

**Prediction and Control:
Global Population, Population Science, and Population Politics
in the Twentieth Century**

by

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A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(History)
in the University of Michigan
2015

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Acknowledgements

In many ways, this dissertation was a joy to write. I found the topic fascinating when I began writing and it continues to fascinate me today. Going to the archives shaped the story in ways that I did not expect when I wrote the prospectus but that only deepened my interest in and commitment to this project. The enthusiasm of my advisors, research subjects, and interlocutors helped keep my own enthusiasm for the project high, even through difficult and frustrating moments in the archives and while writing.

I could not have written this dissertation without the assistance and support of many people and organizations. The seeds of this dissertation were sown in Barbara Anderson's demographic theory and methods courses in the Department of Sociology at the University of Michigan, which I attended in 2008-2009 at the urging of Myron Gutmann. Myron Gutmann and Barbara Anderson encouraged my critical interest in the history of demography, and this encouragement eventually led me back to the Department of History at the University of Michigan, which I had left after earning my M.A. in 2005. I am grateful to John Carson for agreeing to be my advisor at our very first meeting, and to Kali Israel, Farina Mir, Nancy Hunt, and Gabrielle Hecht, who helped me successfully petition for re-admission to the Ph.D. program. I am also grateful to all of the staff and faculty members of the department for helping me re-integrate into the program and balance it with full-time work at the Inter-university Consortium for Political and Social Research (ICPSR). The support and understanding of my supervisors and colleagues at ICPSR — including Myron Gutmann, George Alter, Susan Hautaniemi Leonard, Ken Sylvester, Kristine Witkowski, Jeremy Albright, Russell Hathaway, Dan Brown, Brian Gratton, Melannie Hartman, and many others — made it possible for me to complete my dissertation while pursuing a highly stimulating and rewarding career.

This project would not have been possible without the generous funding I received from several parts of the University of Michigan: the Department of History, the Rackham Graduate School, and the Population Studies Center. Beyond the University of Michigan, I received grants from the National Science Foundation, the Society for Historians of American Foreign Relations, the American Philosophical Society, the Philadelphia Area Center for History of Science, the Rockefeller Archive Center, Marshall Weinberg, and the Doris G. Quinn Foundation. My committee — John Carson, Barbara Anderson, Howard Brick, and Paul Edwards — offered tremendous support and feedback throughout the process. I received generous assistance from archivists at the Hoover Institution, Stanford University, the American Philosophical Society, Princeton University, the United Nations, Yale University, and the Rockefeller Archive Center, where I would particularly like to thank Bethany Antos and Tom Rosenbaum. I am grateful to the History Committee of the Population Association of America for allowing me to sit in on its 2012 meeting and to the following demographers for allowing me to interview them: John Knodel, Ronald Lee, Richard Easterlin, James Trussell, Karen Hardee, Gretchen Condran, Douglas Massey, and Avery “Pete” Guest. Many people opened their homes to me when I was doing archival research: Rosa and Eric in New Haven; Andrea and Etan in Palo Alto; David in Philadelphia; Danielle, Sarah, and Khurram in Princeton; Rebecca Hume in New York; and Suzy and Romain in Sleepy Hollow. Back at UM, workshops in the Department of History, the Sweetland Writing Center, the Science and Technology in Society program, and the Environmental History group helped me work through and refine my ideas. Ken Garner read almost every sentence of this dissertation and provided invaluable feedback.

Many of the debts I incurred through the years of writing this dissertation were personal. Graduate students often experience demographic processes while writing dissertations, particularly marriage, fertility, and migration. The demographic processes I experienced while writing my dissertation were divorce and mortality. I can’t even begin to thank all of the friends who helped me through these events, but I would like to try. They include Eliz-

abeth Moss, Elizabeth Sikkenga, Dan Hirschman, Jamie Budnick, Jamie Van Etten, Liz Ela, Liz Harmon, Laura Ferguson, Crystal Chung, Rebecca Grapevine, Lenny Ureña Valerio, Robyn d'Avignon, Elise Lipkowitz, Diana Mankowski, Christina Johnson, Annie Stultz, Dallas Bluth, David Edwards, Kai Mishuris, Emily Marshall, Kristen Cibelli, and many more. The largest debt I owe is to the anonymous woman who saved my life by making a well-timed call to 911 on the night of September 19, 2013.

The family is a major focus of demographic research, and my family was indispensable to me throughout this process. My parents, Karen Hilfman and Jon Klancher, never wavered in their support for me, and never hesitated to make the trek to Ann Arbor when I needed assistance, whether in moving apartments or in washing my hair when I broke my wrist. My aunt and uncle, Lesley and Richard Hume, also became surrogate parents to me during this process, inviting me to live with them when I got divorced, taking care of me through every illness and injury, and welcoming my friends into their home on holidays and more somber occasions alike. My cousin Rebecca Hume was an inspiring if long-distance companion throughout this process, and I was overjoyed to be able to celebrate the birth of two children to my cousins Michael and Kim Hume while writing this dissertation. As a result of my own parents' divorce, I have been blessed with the most wonderful blended-extended family in the world. It's hard to say where family begins and ends with one as large as ours, so I apologize if I have forgotten anyone: Joan Cucinotta and Emily and Kate Reteshka; Nancy, Sophie, and Maya Klancher; Ken and Lois Levy and Nadine Levyfield; Tania Verafield, Jose Vera, and Maggie Haase; Mona and Helen Field and Martin Goldstein; Chris Moran and Anna Khalsa; Judy and Skip Rosner; Ari Rosner and Omri Ayalon; Robert, Joan, Beth Ann, Walter, Lydia, and David Frank; Kara and Brendan Williams-Kief; Devra and Allen Kifer; Pamela and Ridley Allen. Patrick Parker was my almost-constant companion during the last two years of the process. I am grateful to him for making me laugh several times a day and for keeping me well-supplied with ice cream during the final week of writing.

This dissertation is dedicated to my grandparents, Patricia McMahan and Miriam and

Kenneth Hilfman, all of whom lived through most of the events detailed in the following pages and passed away while I was carrying out this project. Their constant and unconditional love and support throughout my life were formative and irreplaceable. My grandmothers were some of the fiercest women I have ever known. Both served in the military in World War II and utilized the G.I. Bill to pursue educations and careers that would otherwise have been unavailable to them. My grandfather was one of the kindest and strongest men I have ever known. He shared with me his fascination for history and love of learning and teaching, and even in his last days was always eager to hear about my research. We lost Grandma Pat in 2011, Grandpa Ken in 2013, and Grandma Mimi in 2014. I am so grateful for the time I had with them and for the inspiration and confidence they gave me to complete this project.

Table of Contents

| | |
|--|------------|
| Acknowledgements | ii |
| List of Figures | ix |
| List of Tables | x |
| List of Abbreviations | xi |
| Introduction | 1 |
| 0.1 Method | 9 |
| 0.2 Scope | 13 |
| 0.2.1 Conceptual Scope | 13 |
| 0.2.2 Geographical Scope | 30 |
| 0.3 Sources | 33 |
| 0.4 Overview | 35 |
| Chapter 1 Population Problems, Models, and Politics | 42 |
| 1.1 The Malthusian Legacy: Population Thought and Politics Before the Twentieth Century | 45 |
| 1.1.1 Population Accounting: Political Arithmetic and Censuses | 46 |
| 1.1.2 The Valence of Population: From Malthus to Darwin | 49 |
| 1.1.3 The Progressive Turn: Neo-Malthusianism and Eugenics | 55 |
| 1.2 Population Problems and Population Projections: Competing Theories and Politics | 60 |
| 1.2.1 Margaret Sanger and the Neo-Malthusians: Overpopulation and the Logistic Law of Population Growth | 61 |
| 1.2.2 Social Scientific Population Models: Differential Growth | 79 |
| 1.3 Comparing the Logistic Law and the Cohort Component Method: Two Ontologies of Population | 102 |
| 1.4 Demographic Transition Theory: A Social Theory of Population Change . . | 111 |
| 1.4.1 Modernization and Demographic Transition | 112 |
| 1.4.2 The Geopolitical Consequences of Demographic Transition Theory . . | 117 |
| Chapter 2 Disciplining Demography Between the Wars | 124 |
| 2.1 International Population Science and European Population Politics | 127 |
| 2.2 Funding for Demography and the Politics of Population in the United States | 134 |
| 2.2.1 Finding Patrons for Demography | 135 |
| 2.2.2 The Population Association of America: Between Eugenics and Birth Control | 140 |

| | | |
|------------------|---|------------|
| 2.2.3 | Frederick Osborn and Princeton’s Office of Population Research: Science in the Service of Eugenics | 144 |
| 2.3 | Finding Clients for Demography | 157 |
| 2.3.1 | Selling Demography to the U.S. Government | 158 |
| 2.3.2 | Identifying the Correlates of Fertility | 172 |
| Chapter 3 | The Mid-Century Crisis of Global Demography | 191 |
| 3.1 | Demography in War and Peace | 195 |
| 3.1.1 | Demography and Postwar Social and Economic Planning | 199 |
| 3.1.2 | The United Nations: Global Governance for a Global Population | 201 |
| 3.2 | Data Friction: Challenges to World Population Estimation and Projection | 205 |
| 3.2.1 | Unavailable data | 208 |
| 3.2.2 | Inadequate Data | 215 |
| 3.2.3 | Incommensurable Data | 220 |
| 3.3 | Dealing With Data Friction: Making Global Population Data and Making Population Data Global | 225 |
| 3.3.1 | Reviving the Logistic | 226 |
| 3.3.2 | Making Global Population Data: The U.N. Global Census Programs | 234 |
| 3.3.3 | Making Population Data Global: Sampling and Indirect Estimation | 243 |
| 3.4 | Challenges to Demographic Transition Theory | 258 |
| Chapter 4 | The Mid-Century Global Demographic Crisis | 271 |
| 4.1 | The Postwar Construction of Overpopulation | 274 |
| 4.1.1 | The Demographic Critique of Imperialism | 276 |
| 4.1.2 | Demography and the Philanthropic-Industrial Complex | 284 |
| 4.2 | The Economic Discourse of Overpopulation | 300 |
| 4.2.1 | Planning Population Control at Colonial Williamsburg | 301 |
| 4.2.2 | The Population Council | 310 |
| 4.3 | Popularizing Overpopulation | 318 |
| 4.3.1 | Hugh Moore’s Population Bomb | 320 |
| 4.3.2 | Empirical Support for Economic Overpopulation | 324 |
| 4.3.3 | Communicating the Results of the Coale-Hoover Report | 327 |
| 4.4 | Population Control and U.S. Foreign Policy | 332 |
| 4.4.1 | Tracing the Coale-Hoover Report into the U.S. Government | 332 |
| 4.4.2 | The Princeton European Fertility Project | 336 |
| 4.4.3 | U.S. Government Response | 345 |
| Chapter 5 | The Postwar Expansion of Demography and Family Planning | 351 |
| 5.1 | The Expansion of Demography in the U.S. and the Global South | 352 |

| | | |
|--|--|------------|
| 5.1.1 | Population Studies Centers and Demography Careers in the United States | 353 |
| 5.1.2 | Population Studies Centers and Demography Careers in the Global South | 363 |
| 5.2 | The Content of Postwar Demography | 368 |
| 5.2.1 | Demography's Journals | 368 |
| 5.2.2 | Fertility Surveys in the 1950s | 372 |
| 5.3 | Family Planning and Beyond | 393 |
| 5.3.1 | Toward a More Perfect Contraceptive | 395 |
| 5.3.2 | Knowledge, Attitudes, and Practices of Contraception | 403 |
| 5.3.3 | Family Planning Debates | 417 |
| Chapter 6 The Population Bomb Squad | | 428 |
| 6.1 | The Environmental Overpopulation Discourse | 430 |
| 6.1.1 | A New Manhattan Project | 431 |
| 6.1.2 | Paul Ehrlich's Population Bomb | 439 |
| 6.1.3 | Zero Population Growth | 450 |
| 6.2 | Counterdiscourses of Population and the Environment | 467 |
| 6.2.1 | Biological Counterdiscourses | 468 |
| 6.2.2 | Demographic Counterdiscourses | 475 |
| 6.3 | The American Future and Limits to Growth | 481 |
| 6.3.1 | Population Growth and the American Future | 482 |
| 6.3.2 | The Limits to Growth | 498 |
| Chapter 7 The Geopolitics of Population Control | | 512 |
| 7.1 | Beyond Family Planning: Berelson's Public Relations Efforts for the Population Council | 514 |
| 7.2 | Concerned Demographers | 518 |
| 7.3 | U.N. World Population Conference, 1974 | 527 |
| 7.3.1 | Toward a World Population Plan of Action | 530 |
| 7.3.2 | In Bucharest | 539 |
| 7.3.3 | The Population Tribune: Rockefeller's Reversal | 550 |
| 7.4 | From Bucharest to Mexico City | 556 |
| 7.4.1 | Recovering From Bucharest | 556 |
| 7.4.2 | The Passing of the Population Generation | 561 |
| 7.4.3 | Mexico City | 569 |
| 7.4.4 | Demography After 1984 | 575 |
| Conclusion | | 581 |
| Bibliography | | 589 |

List of Figures

| | | |
|-----|--|-----|
| 1.1 | Pearl's Logistic Curve | 70 |
| 1.2 | Observed and Projected U.S. Population, 1700-2100 | 70 |
| 1.3 | Yule's Image of the Populations of the U.S., England, and France | 72 |
| 1.4 | Growth Pattern of Pearl's Drosophila Population | 73 |
| 1.5 | Kuczynski's Net Reproduction Rate for France, Austria, Ukraine, and Poland | 91 |
| 1.6 | Population Projections for the United States by Raymond Pearl and Pascal Whelpton, and Observed U.S. Population | 106 |
| 1.7 | Pearl's Illustration of Population Aging | 110 |
| 1.8 | Demographic Transition Theory | 113 |
| 2.1 | Thompson and Whelpton's U.S. Population Projections, 1928, 1933, and 1938, and Observed U.S. Population, 1920-1940 | 173 |
| 3.1 | Notestein's 1944 Global Population Projection | 206 |
| 3.2 | World Population, as Estimated by the U.N. in 1954 (millions) | 242 |
| 4.1 | Hugh Moore's "Population Bomb" Pamphlet | 321 |
| 4.2 | Hugh Moore Newspaper Advertisement | 335 |
| 4.3 | Princeton European Fertility Project Map | 340 |
| 5.1 | Card 1, Growth of American Families Questionnaire, 1955 | 384 |
| 6.1 | a. Advertisement in <i>The New York Times</i> , March 10, 1968; b. Advertisement in <i>The New York Times</i> , December 8, 1968. | 433 |
| 6.2 | Advertisement proposed by Moore's associates. | 434 |
| 6.3 | a. Advertisement in <i>The New York Times</i> , June 12, 1968; b. Advertisement proposed by Moore's associates. | 437 |
| 6.4 | Advertisement in <i>The New York Times</i> , May 25, 1969. | 438 |
| 6.5 | Cover of <i>Time</i> magazine, February 2, 1970. | 470 |
| 6.6 | World3 model, standard run. | 500 |

List of Tables

| | | |
|-----|---|-----|
| 1.1 | U.S. Population, as Projected by Raymond Pearl and Pascal Whelpton, 1930-1970 | 107 |
| 3.1 | World Population by Continent, as Estimated by the U.N. in 1954 (millions) | 241 |

List of Abbreviations

- ABCL** American Birth Control League
- AES** American Eugenics Society
- ANT** Actor-Network Theory
- CDE** Center for Demography and Ecology (University of Wisconsin)
- CELADE** Centro Latinoamericano de Demografía (Santiago, Chile)
- ECAFE** Economic Commission for Asia and the Far East
- ECOSOC** United Nations Economic and Social Council
- EPA** Environmental Protection Agency
- ERO** Eugenics Record Office
- FAO** United Nations Food and Agriculture Organization
- FERA** Federal Emergency Relief Administration (United States)
- GAF** Growth of American Families
- GNP** Gross National Product
- GRR** Gross Reproduction Rate
- HUAC** House Un-American Activities Committee
- ICPSR** Inter-university Consortium for Political and Social Research
- ILO** International Labour Organization
- IMF** International Monetary Fund
- IPPF** International Planned Parenthood Federation
- IUD** Intrauterine Contraceptive Device
- IUSIPP** International Union for the Scientific Investigation of Population Problems
- INED** Institut National d'Études Démographiques (France)
- IUSSP** International Union for the Scientific Study of Population

KAP Knowledge, Attitudes, and Practices of Contraception
LSE London School of Economics
MMF Milbank Memorial Fund
NAS National Academy of Sciences (United States)
NFS National Fertility Survey (United States)
NIH National Institutes of Health (United States)
NRC National Research Council (United States)
NRR Net Reproduction Rate
OPOR Office of Public Opinion Research (Princeton University)
OPR Office of Population Research (Princeton University)
PAA Population Association of America
PCC Population Crisis Committee
PDR *Population and Development Review*
PEFP Princeton European Fertility Project
PGAF Population Growth and the American Future
PIC Population Investigation Committee (United Kingdom)
PPFA Planned Parenthood Federation of America
PRB Population Reference Bureau
SPIA School of Public and International Affairs (Princeton University)
SPK Stable Population Keynesianism
SRC Survey Research Center (University of Michigan)
SSRC Social Science Research Council (United States)
TFR Total Fertility Rate
UNFPA United Nations Fund for Population Activities
USAID United States Agency for International Development
WPEC World Population Emergency Campaign
ZPG Zero Population Growth

Introduction

The twentieth century was an exceptional period in the history of the world's population: it grew faster than it ever had before or ever would again, and became the subject of a new science and a critical arena of intervention for states, international agencies, and nongovernmental organizations. This dissertation traces the history of global population dynamics, demography, and population politics and policy from 1920 to 1984. It examines the ways in which scientists, activists, and policy makers based in the United States analyzed and intervened in population growth worldwide, focusing on the activity of population projection — estimating future population size and composition — as the key link between population change, the science that aimed to understand it, and the policies that sought to accommodate or manipulate it. I argue that, as a social science of population, demography has played a critical role throughout the twentieth century in supporting specific discourses of population that have legitimized the active intervention of states, international agencies, and nongovernmental organizations into the reproductive lives of individuals, usually individuals on the wrong side of social, political, and economic power. At the same time, however, I contend that demographers themselves played a limited role in constructing these discourses, as the institutional power of their discipline depended on support from wealthy patrons and clients, who exercised substantial influence over the content of the field and how its findings were interpreted and communicated to publics and policy makers.

Between 1900 and 2000, the population of the world grew from about 1.65 billion to over 6 billion.¹ In 1900, the vast majority of the world's inhabitants lived in rural areas; in 2000, about half lived in urban areas.² From 1950 to the present, expectation of life at

¹The estimate of 1.65 billion for the year 1900 is the approximate mid-point between the low estimate of 1.55 billion and the high estimate of 1.762 billion given by the U.S. Census Bureau: https://www.census.gov/population/international/data/worldpop/table_history.php (accessed 3/29/2015).

²http://www.un.org/en/development/desa/population/publications/pdf/popfacts/PopFacts_2014-3.pdf (accessed 3/29/2015).

birth for the world as a whole (a life table index representing the average number of years an individual would live if subjected to current age-specific mortality rates at all ages) was approximately 47 years. Today, it is approximately 62 years.³ Over the same period, fertility rates at the global level have halved, falling from an average of 5.0 children per woman (total fertility rate), to an average of 2.5 children per woman.⁴ As a result, the proportion of the world's population aged 60 and over increased from 8% in 1950 to about 12% today, and U.N. demographers expect that it will reach 21% by 2050.⁵

The rate of world population growth reached its peak at about 2.2% per year in the mid-1960s.⁶ Public anxiety about the potentially deleterious economic and environmental consequences of this population growth reached its peak shortly thereafter. While population grew most rapidly in Asia and Latin America, where fertility rates remained high even though mortality rates had fallen dramatically, concern about world population growth was most palpable in the United States, where prominent and powerful philanthropists and businessmen pushed world population growth into the public consciousness and onto the government's policy agenda.

Numerous U.S.-based organizations sought to provide birth control to women and couples in the global south — the countries of Asia, Africa, and Latin America that produced raw materials for industry in North America, Europe, Oceania, and East Asia, many of which had recently wrested independence from European empires. These organizations promoted the use of birth control to achieve the small families that had become the norm in the global north — the countries of North America, Europe, Oceania, and East Asia to which the profits of global industry and trade flowed. By the late 1960s, these philanthropists had enrolled the U.S. government and the United Nations in their project of global population

³United Nations Population Division, *World Population Ageing 2013* (New York: United Nations, 2013), URL: <http://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2013.pdf> (accessed 04/14/2015), 6.

⁴Ibid., 3.

⁵Ibid., 11.

⁶https://www.census.gov/population/international/data/worldpop/graph_growthrate.php (accessed 3/29/2015).

control, with the U.S. government becoming the world's largest provider of funds to family planning programs worldwide and to the U.N. Fund for Population Activities (UNFPA), which was established in 1969 with additional funding from other countries in the global north, particularly Japan, the U.K., and Sweden.

U.S.-based proponents of population control in the global south developed and perpetuated two new discourses of overpopulation that grew out of an older Malthusian tradition in the postwar period and will be described in greater detail in Chapters Four and Six. The first, which I call the economic overpopulation discourse, understood population growth as a barrier to economic development in the global south. The second, which I call the environmental overpopulation discourse, understood population growth as a threat to global resource conservation and ecosystem integrity. Both discourses relied on commonsensical understandings of a fixed supply of economic and environmental goods being divided among a growing number of people, and on the Malthusian theory that population necessarily grows faster than the supply of food and other natural resources. The proponents of these discourses often pointed to the existence of poverty and starvation in the global south to legitimize their claims that the world was becoming overpopulated and that this overpopulation was the cause of socioeconomic inequality and environmental degradation at both global and local levels. Science provided support to these overpopulation discourses, and their proponents played a critical role in funding, popularizing, and politicizing the scientific theories and findings that supported their claims. While the major scientific supporters of the environmental overpopulation discourse were biologists, the economic discourse drew support from a new interdisciplinary social science that began to emerge between the wars in the U.S. and Western Europe and grew dramatically — particularly in the U.S. and the global south — after World War II: demography.

Demography is an interdisciplinary field of inquiry, practiced in universities, government agencies, and inter- and non-governmental agencies, such as the United Nations and the International Institute for Applied Systems Analysis. Its object of inquiry is how populations

change — through the mechanisms of fertility, mortality, and migration — and the causes and consequences of population change and its mechanisms. The field is often divided into two components: formal or mathematical demography explores the formal mathematical relationships between such demographic variables as fertility, mortality, and population structure; social demography explores the socioeconomic correlates of demographic processes (fertility, mortality, and migration) and the distribution of such social goods as health, wealth, and education within and between populations.⁷ Social demography, like formal demography, is highly quantitative, utilizing statistical methods to examine large-scale patterns and central tendencies that emerge from the aggregation of data about individual behavior. The science of demography grew in tandem with world population and with political projects aimed at shaping world population growth during the twentieth century. Although governments had long been engaged in population accounting and analysis, as will be described below and in Chapter One, it was only after World War I that the analysis of population dynamics became a regular activity of university-based scientists in North America and Western Europe. Demography secured patronage from the new general-purpose foundations that emerged in the United States to improve human welfare, and developed a clientele of governmental and non-governmental agencies. After World War II, the United Nations promoted the collection of demographic data in all countries of the world, extending the scope of demographic research to global population. The field grew in size in the 1950s and 1960s, as it gained new patrons and clients, many of whom were also involved in projects aimed at containing the world's rapidly-growing population, and as it attracted and trained new practitioners, particularly in the United States and the global south.

In the last decade, historians have begun to explore public, intellectual, and governmental anxiety about population growth and policy responses. Matthew Connelly's *Fatal Misconception: The Struggle to Control World Population* (2008) set the agenda for recent historical studies of population thought and politics in the twentieth century. More recently,

⁷David Yaukey, Douglas L. Anderton, and Jennifer Hikes Lundquist, *Demography: The Study of Human Population*, 3rd ed. (Long Grove: Waveland, 2007).

Alison Bashford's *Global Population: History, Geopolitics, and Life on Earth* (2014) has added nuance to Connelly's story of global population control. While Connelly explores the global politics of population as a *biopolitics* of people and peoples and examines the activities of governmental, inter-governmental, and non-governmental agencies, Bashford contends that global population politics were a *geopolitics* of the Earth and its finite resources, and analyzes the thought of an interdisciplinary group of anglophone cosmopolitan intellectuals. By considering these works, along with three texts on population thought and politics in the United States, I will outline how recent historical scholarship has framed the fundamental issues around population thought and politics. I will then explain how this dissertation both develops and challenges these agendas by focusing specifically on the role of demography — a new form of scientific expertise specific to human population dynamics — in twentieth-century population thought and politics.

Connelly and Bashford offer a detailed account of population thought (Bashford) and population control interventions (Connelly) over the majority of the twentieth century, with a focus on anglophone thought and interventions in the global south. Connelly critiques the efforts of “some people” to control the fertility of others “without having to answer to anyone,” which wreaked humanitarian and political havoc in many parts of the world in the second half of the twentieth century.⁸ He traces the tactics of individual, national, philanthropic, non-governmental, and inter-governmental actors — including Sanjay Gandhi, Margaret Sanger, Planned Parenthood, the Rockefeller and Ford Foundations, the U.S. Agency for International Development (USAID), and UNFPA — across space and over time as population control shifted from national efforts to manipulate population “quality” (eugenics projects) to international efforts to manipulate population quantity. Connelly identifies the organizational and individual links between eugenics movements in the first half of the century and population control programs in the second half, particularly in the global south, where both movements comprised elites who sought to limit the childbearing of the poor. He

⁸Matthew Connelly, *Fatal Misconception: The Struggle to Control World Population* (Cambridge: Belknap, 2008), xi.

contends that population control was ultimately about political and economic control — that of the wealthy over the poor and the countries of the global north over those of the global south.⁹ Bashford expands on this story by detailing the population thought of anglophone intellectuals — including biologists, economists, birth control activists, and novelists — that supported the efforts to control population size and composition described by Connelly. She argues that these thinkers viewed World War I as the closing of the global “frontier”: after the war, all of the world’s territory was under the jurisdiction of either empires or sovereign states. In response, anglophone intellectuals began to understand population control — through either contraception or coordinated migration — as the key to global peace.¹⁰ Bashford also demonstrates the imbrication of population thought with eugenics throughout the century, even as population thought and eugenics distanced themselves from racism after the 1930s. Taken together, Connelly and Bashford suggest that the key to understanding population thought and politics in the twentieth century is the conceptual intertwining of biology — that of both human reproduction and natural resources — with politics and economics at the global level, which legitimized biological intervention as a response to global political and economic challenges.

Three recent books — by Derek Hoff, Thomas Robertson, and Paul Sabin — add detail to the general story told by Connelly and Bashford by examining population thought and policy specifically in the United States. Analyzing the role of population thought from the colonial period to the present, Hoff argues that concern about population growth has underpinned economic and social policy throughout U.S. history, particularly with regard to western expansion, slavery and its abolition, and such twentieth-century programs as the New Deal and the Great Society.¹¹ Robertson focuses on the role of population in the twentieth-century conservation and environmental movements. Like Hoff, Robertson finds

⁹Connelly, see n. 8, 378.

¹⁰Alison Bashford, *Global Population: History, Geopolitics, and Life on Earth* (New York: Columbia University Press, 2014).

¹¹Derek Hoff, *The State and the Stork: The Population Debate and Policy Making in U.S. History* (Chicago: University of Chicago Press, 2012).

that population was a major concern for his actors, both environmentalists in the second half of the twentieth century and conservationists in the first half. He places special emphasis on the importance of the Cold War for solidifying the relationship between population and environment in the minds of U.S. publics, scientists, and policy makers.¹² Finally, Sabin explores population as a link between the environment and economy at the end of the twentieth century by detailing the highly-publicized 1980 bet between biologist Paul Ehrlich and economist Julian Simon about population growth and scarcity, using it as an analytic lens through which to examine the growing political divide in the U.S. between environmentalism on the left and neoliberal market fundamentalism on the right, with debate about markets and and conservation eclipsing concern with population by the 1990s.¹³

For the most part, these five books accept at face value the Malthusian contentions of their actors. For Connelly, Bashford, and Hoff, population growth — particularly in the twentieth century — presented a major threat to world peace, human well-being, economic growth, and environmental integrity. Even as Connelly provides a much-needed critique of the ways in which population control programs were carried out, highlighting their coercive implementation and non-democratic control, he does not question the basic premise that population growth had become a global crisis in the second half of the twentieth century. This orientation is particularly surprising in Bashford and Hoff's books, as they focus on the period prior to World War II, when the Malthusian thought that dominated the post-war period was in a minority, as I will demonstrate in Chapters One and Two. In contrast to these works, Robertson reserves judgment on the contributions of population growth to environmental degradation, demonstrating both why this relationship seemed evident to his actors and how their perceptions may have been influenced by social and political factors, and Sabin demonstrates how debates about the environment and economy moved beyond population after the 1980 U.S. election, as I too will discuss in Chapter Seven.

¹²Thomas Robertson, *The Malthusian Moment: Global Population Growth and the Birth of American Environmentalism* (New Brunswick: Rutgers University Press, 2012).

¹³Paul Sabin, *The Bet: Paul Ehrlich, Julian Simon and Our Gamble Over Earth's Future* (New Haven: Yale University Press, 2013).

None of these books directly discusses the development and growth of the field of demography during the period of analysis. Bashford, Connelly, Hoff, Robertson, and Sabin conflate demography with population thought more broadly — including popular thought and that of other types of experts (for example, economists and biologists) — and assume relative homogeneity in population thought, both among demographers themselves and between demographers, the public, policy makers, and other scientists. As a result, these historians conflate the economic and environmental discourses of overpopulation that emerged after World War II, and attribute to them direct continuity with earlier Malthusian theory. By bracketing the establishment of demography as a scientific field in the twentieth century, these works neglect to ask how population became a specific field of scientific expertise, how the thought of the new population experts differed from that of other types of experts, and how population scientists and their work influenced and were influenced by global population politics. Rather, they assume that demography was prior to and independent of population politics, and that it provided unequivocal evidence of population growth and its deleterious consequences, which then became the basis for political movements and policy interventions. As a result, these historians accept uncritically not only the authority claimed by demographers to analyze and predict human population change and its causes and consequences, but also the necessity of policy interventions to slow population growth in the second half of the twentieth century. Because Bashford, Connelly, Hoff, Robertson, and Sabin assume the prior stability of population science, their studies overlook the scientific debates surrounding overpopulation in the second half of the twentieth century, even after overpopulation had been established as a “fact” in public and political opinion.

These five books cover much of the same ground — geographically, chronologically, and conceptually — as this dissertation, and provide important context for the claims made in the present work. They demonstrate that human population growth at multiple scales was a central concern of political, economic, and environmental thinkers in the U.S. and the world in the twentieth century, and that many political programs and policy interventions dur-

ing the twentieth century aimed to address political, economic, and environmental concerns through population management and control. This dissertation both extends and challenges the claims made in these recent works of history. It extends their claims by demonstrating that political, economic, and environmental concerns about global population growth gave rise to a new science of human population dynamics in the twentieth century. It challenges the existing literature by demonstrating that demography — the new science of human population dynamics — did not unequivocally support the view that global population growth threatened human survival or directly contributed to poverty or environmental degradation. Through a discussion of the emergence and development of demographic science, this dissertation examines how the postwar crisis of global population growth was constructed, and examines how demography both supported and challenged postwar overpopulation discourses. In contrast to the existing literature, I trace the emergence of scientific expertise in population and the specific role of demography in twentieth-century population politics. I examine the production of the knowledge that served as the basis of and justification for population interventions throughout the twentieth century. I ask how scientists and policy makers came to see human population change as tractable to scientific expertise and policy intervention, how those who claimed demographic expertise understood human population change and its social, economic, political, and biological correlates and consequences, and how demography and population politics recursively influenced one another to produce and solve “population problems” at both national and global scales.

0.1 Method

The following seven chapters reconstruct the history of demography and its relationship to population politics from 1920 to 1984, proceeding roughly chronologically. To locate and build the framework of the story, I employ a genealogical method to identify relevant ideas, actors, and events in the history of demography by tracing backward from the present-day

structure of the field. This method draws from Michel Foucault’s concept of genealogy, from the practice of constructing family trees, and from actor-network theory.

From Foucault, it borrows the technique of tracing the coalescence and dissolution of discursive formations. According to Foucault, discursive formations can be identified “when- ever, between objects, types of statement, concepts, or thematic choices, one can define a regularity (an order, correlations, positions and functionings, transformations).”¹⁴ From the practice of constructing family trees, it borrows the method of backward and lateral linkages between individuals, which I have supplemented with similar linkages between institutions and ideas.

The genealogical method I use in this dissertation is inspired by actor-network theory (ANT), a method developed originally by Bruno Latour and Michel Callon to examine how a variety of things in the world — from facts to concepts to diseases to people to institu- tions — are produced dynamically through the assemblage of human and non-human actors into more and less dense networks that require ongoing work to maintain their stability.¹⁵ ANT shares with Ian Hacking’s historical ontology the perspective that many types of things come into being only through particular conjunctions of actors and activities at particular moments.¹⁶ However, ANT goes beyond the analysis of how things coalesce to examine the networks that hold them together, how they continue to cohere or how they destabilize, and what kind of work goes into stabilizing or dissolving them. ANT analysis involves identify- ing connections between human and non-human actors and tracing the circulation of actors along those networks. My research for this dissertation has involved following relationships between people (demographers, philanthropists, policy makers) and things (data, survey

¹⁴Michel Foucault, *The Archaeology of Knowledge and the Discourse on Language*, trans. A.M. Sheridan Smith (New York: Pantheon, 1972), 38.

¹⁵See, for example: Michel Callon, “Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen in St. Brieuc Bay,” in *Advances in Social Theory and Methodology: Toward an Integration of Micro and Macro-Sociologies*, ed. Karen Knorr-Cetina and A.V. Cicourel (Boston: Routledge and Kegan Paul, 1986); Bruno Latour, *Science in Action: How to Follow Scientists and Engineers Through Society* (Cambridge: Harvard University Press, 1987); Bruno Latour, *Reassembling the Social: An Intro- duction to Actor-Network Theory* (New York: Oxford University Press, 2005); Annemarie Mol, *The Body Multiple: Ontology in Medical Practice* (Durham: Duke University Press, 2002).

¹⁶Ian Hacking, *Historical Ontology* (Cambridge: Harvard University Press, 2002).

questionnaires, contraceptive drugs and devices) both synchronously and diachronically, often with the exchange of money as the connection among people and between people and things.

Genealogies of the family tree variety provide demographers with an important source of data about past populations.¹⁷ One major drawback, however, is that they only provide information about people who had descendants. They begin with those who are alive at the time of their construction and work backward to identify ancestors; past individuals who had no children remain invisible, as do their ancestors. Similarly, my research process has included only individuals and organizations who appear in the conceptual “family tree” of present-day demography. This fact is not as limiting as it might at first seem, however, because intellectual fields are not families. Familial genealogies link people only by blood, marriage, and adoption, whereas an intellectual genealogy can also link people through institutions, publications, funding, and correspondence. Nonetheless, the scope of this story — defined by tracing the current field backward — is very different than would be the scope of a story constructed by identifying instances of population thought, accounting, or analysis at a given point in the past and tracing them forward.¹⁸ The latter would be more likely to discover dead ends and alternative possibilities. The former is more likely to discover unexpected origins and previously-unrecognized connections.

After identifying these origins and connections, I pieced together the history of demography and population politics chronologically from archival and published sources (described in greater detail below), using a prosopographical approach to link human actors by generation or cohort as well as through institutional and familial connections. Prosopography, also known as collective biography or multiple career-line analysis, seeks to trace the collective history of generations of human actors to reveal patterns, trends, and actions that are not

¹⁷Emily Klancher Merchant and J. David Hacker, “Historical Demography in the United States,” in *A Global History of Historical Demography: Half A Century of Interdisciplinarity*, ed. Antoinette Fauve-Chamoux et al. (Peter Lang, 2015).

¹⁸Ian Hacking addresses the question of how to do the history of an intellectual field in Ian Hacking, “How Should We Do the History of Statistics?” *I&C* 8 (1981): 15–26.

readily apparent through individual-level analysis.¹⁹ The field of demography provides useful insight to the prosopographical method, recognizing three irreducible dimensions along which which people experience and are influenced by time and its passage: age, period, and cohort. Age refers to an individual's age, period to calendar time, and cohort to the intersection of age and period, or to the fact that being a particular age in one year is a different experience from being that same age in a different year. All works of history account for period; this dissertation also pays careful attention to actors' age and cohort, and to the intersection of these factors with historical periodization.

I define demography circularly, as the work of demographers. I identify actors as demographers if they belonged to a professional association for the study of human population, such as the Population Association of America (PAA) or the International Union for the Scientific Study of Population (IUSSP); if they taught in or were trained in a university-based population research center; if they worked in a governmental or an inter- or non-governmental agency dealing with documenting and/or predicting change in human population size or structure (such as the U.S. Bureau of the Census, the U.N. Population Division, or the Institute for International Applied Systems Analysis); or if they published in journals devoted to the analysis of human population, such as *Demography*, *Population Studies*, *Population and Development Review*, *Population Research and Policy Review*, or *Population and Environment*. In addition to demographers, this story includes two other major sets of human and institutional actors: the first I call "patrons" — individuals and organizations that provided funding or other forms of support to demography, demographers, and demographic research; the second I call "clients" — individuals and organizations that used demographic research either to make political claims or to formulate or legitimize policy. These three (analytic) categories of actor — demographers, patrons, and clients — overlapped to some degree, with considerably more overlap between patrons and clients than between demographers and either of the other categories. The U.S. government, for example, was both a patron and a

¹⁹Lawrence Stone, "Prosopography," *Daedalus* 100, no. 1 (1971): 46–79.

client of demography, and employed demographers directly. The non-human actors I follow include money, data, survey questionnaires, and contraceptive drugs and devices. I closely track individual and institutional relationships and the circulation of money and ideas between individuals and institutions in order to demonstrate the enormous material effects of the work of a very small number of actors. The assemblages that form, dissolve, and re-form through these relationships and circulations are demographic theories and methods and actual and proposed population policies and programs, though which the small group of actors I follow shaped public opinion, policy, and population itself.

0.2 Scope

0.2.1 Conceptual Scope

The genealogical method is particularly appropriate to this dissertation, which is a history of the present-day scientific field of demography, as it developed in the United States over the course of the twentieth century, and its relationship to a changing global politics of population, from the perspective of U.S.-based scientists, activists, businessmen, philanthropists, and policy makers. As such, it is not a history of population thought in a broad sense, nor does it consider other scientific fields that invoke concepts of population, such as population ecology or population genetics, though it does note the relationship of these fields to demography.

As I traced the institutions of demography — professional associations, journals, university research and training centers, statistical offices, and funding agencies — and the people involved in them backward through the twentieth century, the threads frayed, ultimately dissolving between the world wars into the disparate domains of vital statistics, biology, public health, life insurance, sociology, economics, birth control, immigration restriction, and eugenics. It is at this point — the point of dissolution if reading backward or the point of coalescence if reading forward — that my story begins, though Chapter One includes a

brief history of the separate domains that came together — through the processes of negotiation and contestation described in Chapters One and Two — to form a field that could be recognized as today’s demography by the end of World War II.

This chronology disrupts the periodization of the field identified by the demographers who, to date, have made the largest contributions to documenting the history of the field. Demographers writing the history of demography in the twentieth century have mainly focused on the period between about 1945 and 1985, when the field provided strong support to the economic overpopulation discourse described above and to population control programs in the global south.²⁰ Demographers examining the history of their discipline have engaged much less with the environmental overpopulation discourse, as demography played a minor role in its construction.²¹ Dennis Hodgson identifies “sharp breaks” in the mid 1940s and mid 1980s, which he contrasts to the “steady refinement” of knowledge he attributes to the period before 1945.²² Paul Demeny has argued that, during the 40-year period between the “sharp breaks” of the late 1940s and the mid 1980s, when the economic overpopulation discourse was ascendant, demography was explicitly a policy science, aiming to influence population trends as much as to understand them.²³ Simon Szreter and Susan Greenhalgh offer additional explanation for demography’s strong alliance with population policy during this period, but do not question Hodgson and Demeny’s assertion that demography did not become a policy science until after World War II.²⁴

²⁰Dennis Hodgson, “Demography as Social Science and Policy Science,” *Population and Development Review* 9, no. 1 (1983): 1–34; Dennis Hodgson, “Orthodoxy and Revisionism in American Demography,” *Population and Development Review* 14, no. 4 (Dec. 1988): 541–569; Simon Szreter, “The Idea of Demographic Transition and the Study of Fertility Change: A Critical Intellectual History,” *Population and Development Review* 19, no. 4 (Dec. 1993): 659–701; Susan Greenhalgh, “The Social Construction of Population Science: An Intellectual, Institutional, and Political History of Twentieth-Century Demography,” *Comparative Studies in Society and History* 38, no. 1 (1996): 26–66.

²¹Kingsley Davis was the demographer who provided the most support to this discourse. David M. Heer, *Kingsley Davis: A Biography and Selections from His Writings* (New Brunswick: Transaction, 2005).

²²Hodgson, “Orthodoxy and Revisionism in American Demography,” see n. 20, 541.

²³Paul Demeny, “Social Science and Population Policy,” *Population and Development Review* 14, no. 3 (1988): 451–479.

²⁴Szreter, “The Idea of Demographic Transition and the Study of Fertility Change: A Critical Intellectual History,” see n. 20; Greenhalgh, “The Social Construction of Population Science: An Intellectual, Institutional, and Political History of Twentieth-Century Demography,” see n. 20.

By asserting that demographers oriented their science toward policy only after World War II, Hodgson and Demeny elide the interwar relationship between demography and population politics and impose continuity between interwar demography and the collection and analysis of vital statistics — governmental accounting and analysis of population — a practice that began in Western Europe and North America in the late eighteenth century. In this dissertation, I argue that vital statistics represent only one of several intellectual forebears of demography. Vital statistics were certainly necessary for demographic analysis, which built on some of the analytic methods developed by nineteenth-century vital statisticians. But while vital statistics were collected and analyzed mainly by government statistical offices for governmental purposes, the science of demography coalesced only in the first decades of the twentieth century, when scientists in a variety of fields — including statistics, biology, public health, sociology, and economics — began to analyze vital statistics in order to develop theories about the causes and consequences of human population change. Moreover, these scientists were not working in a political vacuum, but instead were drawing on their analyses to weigh in on critical policy concerns of the 1920s and 1930s, including birth control legalization, immigration restriction, and eugenics. In contrast to Hodgson, Demeny, Szreter, and Greenhalgh, I argue in this dissertation that demography as it is known today was co-produced between the wars by two overlapping sets of actors: the scientists who analyzed population data and the activists who utilized demographic analyses to make political claims.

This dissertation identifies the origins of the present-day field of demography at the intersection of two longer histories — that of population quantification, along with the attendant rise of probabilistic and statistical thinking, and that of the human and social sciences. The remainder of this section briefly reviews those two literatures and locates the present study within each.

Population Quantification and the Rise of Probabilistic and Statistical Thinking

Although censuses have a much longer history, historians have demonstrated that the practice of individual-level census taking and vital registration by states emerged as an adjunct to the industrial and democratic revolutions of the late eighteenth century.²⁵ Prior to these revolutions, governments rarely counted their subjects directly, instead using mathematical formulae known as “political arithmetic” to estimate population and its change on the basis of tax and military records, as described by Alain Desrosières, Andrea Rusnock, Michael Donnelly, and Theodore Porter.²⁶ Churches recorded vital events — births, marriages, and deaths — to manage pastoral relationships between parishes and parishioners, and these data circulated among clergy, intellectuals, and governments through correspondence networks.²⁷ Even before governments began to count individual subjects or citizens, eighteenth-century medical and statistical thinkers, particularly in France and Great Britain, began to practice population-level analysis in order to understand such things as the ecological correlates of health and disease and the efficacy of smallpox inoculation, and to develop profitable models for life insurance and annuities.²⁸ Through such practices, quantitative arguments came to

²⁵Margo J. Anderson, *The American Census: A Social History* (New Haven: Yale University Press, 1988); David V. Glass, *Numbering the People: The Eighteenth-Century Population Controversy and the Development of Census and Vital Statistics in Britain* (Farnborough: D.C. Heath, 1973); Patrice Bourdelais, “The French Population Censuses: Purposes and Uses during the 17th, 18th, and 19th Centuries,” *History of the Family* 9 (2004): 97–113.

²⁶Alain Desrosières, *The Politics of Large Numbers: A History of Statistical Reasoning* (Cambridge: Harvard University Press, 1998); Andrea Rusnock, “Biopolitics: Political Arithmetic in the Enlightenment,” in *The Sciences in Enlightened Europe*, ed. William Cark, Jan Golinski, and Simon Schaffer (Chicago: University of Chicago Press, 1999); Andrea Rusnock, *Vital Accounts: Quantifying Health and Population in Eighteenth-Century England and France* (New York: Cambridge University Press, 2002); Michael Donnelly, “From Political Arithmetic to Social Statistics: How Some Nineteenth-Century Roots of the Social Sciences Were Implanted,” in *The Rise of the Social Sciences and the Formation of Modernity: Conceptual Change in Context, 1750-1850*, ed. Johan Heilbron, Lars Magnusson, and Bjorn Wittrock (Dordrecht: Kluwer, 1999); Theodore M. Porter, “Statistics and Statistical Methods,” in *The Cambridge History of Science: The Modern Social Sciences*, ed. Theodore M. Porter and Dorothy Ross (New York: Cambridge University Press, 2003).

²⁷These ecclesiastical records became a valuable source of data for the field of historical demography in the twentieth century. George C. Alter et al., “Introduction: Longitudinal Analysis of Historical-Demographic Data,” *Journal of Interdisciplinary History* 42, no. 4 (2012): 503–517.

²⁸Rusnock, *Vital Accounts: Quantifying Health and Population in Eighteenth-Century England and France*, see n. 26; Lorraine Daston, *Classical Probability in the Enlightenment* (Princeton: Princeton University Press, 1988).

hold authority in the sciences and in politics, and the statistical table comparing values across units of analysis — whether individuals, places, or occupations — became a commonplace of scientific and political rhetoric.²⁹ Theodore Porter has argued that quantitative reasoning, through its claims to objectivity, attains particular authority over policy decisions in places and at times where there is no universally-recognized decision-making authority and no universally-shared system of values to guide such decisions.³⁰

With the emergence of democratic governments in France, Britain, and the United States around the turn of the nineteenth century, states established individual relationships with citizens, in part through the practice of census taking, which in the United States also served as the basis of legislative apportionment.³¹ As James C. Scott has argued, censuses are a mechanism of surveillance through which states make citizens and subjects legible.³² He maintains further that the production of legibility involves not only representing objects in a stylized manner, such as with a map or a table, but also modifying those objects to better match their stylized representation and thereby facilitate rule or manipulation.³³

Counting people both reflects and constitutes relations of power between states and their subjects or citizens. Conducting censuses — universal, individual, instantaneous, and periodic enumerations — requires the power to find people and compel them to submit to enumeration, as will be discussed at greater length in Chapter Three. For that reason, censuses are almost exclusively conducted by states. As nineteenth-century states increasingly

²⁹Rusnock, *Vital Accounts: Quantifying Health and Population in Eighteenth-Century England and France*, see n. 26.

³⁰Theodore M. Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton: Princeton University Press, 1995).

³¹Anderson, *The American Census: A Social History*, see n. 25; Glass, *Numbering the People: The Eighteenth-Century Population Controversy and the Development of Census and Vital Statistics in Britain*, see n. 25; Bourdelais, see n. 25.

³²James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998); Frankel points out that the publication of reports on vital statistics also made citizens legible to one another as well as to the state: Oz Frankel, *States of Inquiry: Social Investigations and Print Culture in Nineteenth-Century Britain and the United States* (Baltimore: Johns Hopkins University Press, 2006); Hacking describes the publication of these reports as an “avalanche of printed numbers”: Ian Hacking, “Biopower and the Avalanche of Printed Numbers,” *Humanities in Society* (1982): 279–295.

³³Also see Daston, *Classical Probability in the Enlightenment*, see n. 28.

drew on national narratives to legitimize their sovereignty, censuses claimed to represent nations as well as citizens, and the concept of population became inextricably intertwined with ideas of nation, ethnicity, and race. Through the collection of vital statistics, states and populations produce and stabilize one another: states provide the apparatus to count citizens and subjects, who provide governments with legitimacy.

Quantification always involves classification, and the task of reducing the complex reality of human identity and diversity generates categories that are socially constructed but nonetheless have major material, political, and economic consequences.³⁴ Censuses in multinational states and empires often classified people by nation, ethnicity, race, language, or religion, facilitating the management of these differences as a strategy of rule, but also facilitating the formation of nationalist movements on the basis of these divisions.³⁵ In states that claim to be isomorphic with nations, censuses often record information about individuals using categories of social difference that have been politicized in that particular nation/state formation, such as race and nativity in the United States, class in Great Britain, and religion in India.³⁶

Ian Hacking has demonstrated that classification in the human and social sciences affects the objects that are being classified, in part because they are people and therefore interact with the classification systems and in part because of the material, political, and economic consequences that are attached to classification.³⁷ Historians have suggested that the statis-

³⁴Geoffrey Bowker and Susan Leigh Star, *Sorting Things Out: Classification and its Consequences* (Cambridge: MIT Press, 1999); Hacking, "Biopower and the Avalanche of Printed Numbers," see n. 32.

³⁵See, for example: Peter Holquist, "To Count, to Extract, to Exterminate: Population Statistics and Population Politics in Late Imperial Russia," in *A State of Nations: Empire and Nation-Making in the Age of Lenin and Stalin*, ed. Ronald Grigor Suny and Terry Martin (New York: Oxford University Press, 2001); Bernard Cohn, *Colonialism and Its Forms of Knowledge: The British in India* (Princeton: Princeton University Press, 1996).

³⁶Anderson, *The American Census: A Social History*, see n. 25; Andrew T. Miller, "Measuring Mulattoes: The Changing U.S. Racial Regime in Census and Society" ("Annual Meeting of the Population Association of America," Washington, D.C., 1991); Melissa Nobles, *Shades of Citizenship: Race and the Census in Modern Politics* (Stanford: Stanford University Press, 2000); Clara Rodriguez, *Changing Race: Latinos, the Census, and the History of Ethnicity in the United States* (New York: New York University Press, 2000); Paul Schor, "Mobilising for Pure Prestige? Challenging Federal Census Ethnic Categories in the U.S.A. (1850-1940)," *International Social Science Journal* 57, no. 183 (2005): 89-101; Sumit Guha, "The Politics of Identity and Enumeration in India c. 1600-1990," *Comparative Studies in Society and History* 45, no. 1 (2003): 148-167.

³⁷Hacking, "Biopower and the Avalanche of Printed Numbers," see n. 32; Ian Hacking, "Making Up

tical project of census taking, along with the bureaucratic surveillance it involved and the numeracy it promoted, produced the self-governing subjects of democratic government.³⁸ Censuses have both universalizing and particularizing tendencies — they universalize by counting every individual, and particularize by associating individuals with social categories that may reflect or translate into social, political, or economic inequality.

With regular, universal, and individual enumerations, the practice of census taking produced a new object of scientific and policy analysis: population.³⁹ Alain Desrosières describes population as a “statistical object” — an object that exists and can be acted upon because of its measurement or representation.⁴⁰ Desrosières uses the word “statistics” in its nineteenth-century sense, meaning information (usually but not always quantitative) about states and their citizens or subjects.⁴¹ Demography — like vital statistics — defines a population as a group of people who are enumerated or registered by the same administrative apparatus — for example, the U.S. population includes everyone counted by the U.S. Census and is therefore delimited by a territory and an administrative unit that are coterminous; the U.S. prison population includes all people counted by the Census of State and Federal Adult Correctional Facilities, and is therefore delimited by an administrative unit that does not map onto a contiguous territory. Any group that can be aggregated or disaggregated from an enumeration may also be considered a population. For example, the U.S. population may be disaggregated into state, county, city, and even Census tract populations. If a census classifies people by race — as, for example, the U.S. Census does — the population may be disaggregated by race, and these racially-defined subpopulations may be analyzed independently.

People,” in *Reconstructing Individualism: Autonomy, Individuality, and the Self in Western Thought*, ed. Thomas C. Heller, Morton Sosna, and David E. Wellbery (Palo Alto: Stanford University Press, 1986).

³⁸Nikolas Rose, “Governing By Numbers: Figuring Out Democracy,” *Accounting, Organizations and Society* 16, no. 7 (1991): 673–692; Patricia Cline Cohen, *A Calculating People: The Spread of Numeracy in Early America* (Chicago: University of Chicago Press, 1983); Silvana Patriarca, *Numbers and Nationhood: Writing Statistics in Nineteenth-Century Italy* (Cambridge: Cambridge University Press, 1990).

³⁹Donnelly, see n. 26; Libby Schweber, *Disciplining Statistics: Demography and Vital Statistics in France and England, 1830-1885* (Durham: Duke University Press, 2006); Joshua Cole, *The Power of Large Numbers: Population, Politics, and Gender in Nineteenth-Century France* (Ithaca: Cornell University Press, 2000).

⁴⁰Desrosières, see n. 26.

⁴¹Theodore M. Porter, *The Rise of Statistical Thinking, 1820-1900* (Princeton: Princeton University Press, 1986).

There is nothing natural about these subpopulations (just as there is nothing natural about administratively-defined populations at national or subnational levels), as the disaggregation of subpopulations depends on census classification schemes. Similarly, the populations defined by national censuses may be aggregated to form continental or global populations, which may be analyzed as such. The field of demography that coalesced in the twentieth century, because it relied on vital data collected by governments, further contributed to the stabilization of population as a statistical object coterminous with states.

Population-level analysis depends on the calculation of rates: the number of events in question occurring in a specified period of time divided by the total number of people at risk of experiencing such an event.⁴² Rates calculated by nineteenth-century thinkers included those of such vital events as birth and death as well as rates of such social and bureaucratic phenomena as suicides and letters lost by the postal service. Many techniques used by today's demographers to calculate rates of vital events were developed in nineteenth-century statistical offices, and historians of nineteenth-century population statistics have explored their political uses in France and England during that period.⁴³

Historians have examined the uptake of techniques of mortality analysis in the provision of life insurance and annuities in North America and Western Europe from the seventeenth century to the early twentieth century. While these practices initially treated death as a random occurrence, by the nineteenth century the collection of population and mortality data allowed providers to calibrate prices with probabilities of death in order to turn a profit.⁴⁴ With mortality statistics, chance became something that could be measured, managed, and profited from. During the nineteenth and twentieth centuries, life insurance companies also contributed to the production and analysis of mortality data, and, prior to the establishment of universal vital registration, constituted the major source of mortality data used for

⁴²Donnelly, see n. 26.

⁴³Schweber, see n. 39; Cole, see n. 39.

⁴⁴Lorraine Daston, "The Domestication of Risk: Mathematical Probability and Insurance 1650-1830," in *The Probabilistic Revolution*, ed. Lorenz Kruger, Lorraine Daston, and Michael Heidelberger (Cambridge: MIT Press, 1987); Geoffrey Clark, *Betting on Lives: The Culture of Life Insurance in England* (Manchester: Manchester University Press, 1999).

scientific analysis. However, historians have also demonstrated that, despite their increasing reliability on probability and mathematical statistics, insurance companies continued to hedge their bets with individual medical examinations, and often used aggregate data to value lives differentially by class or race.⁴⁵

The calculation of time series of rates suggested to nineteenth-century analysts that human and social activities might follow natural laws that could be discovered and manipulated probabilistically if not mechanistically.⁴⁶ In recent decades, several historians have addressed the history of probability and mathematical statistics. Lorraine Daston has examined the roots of probability mathematics in efforts to quantify uncertainty in seventeenth- and eighteenth-century Europe.⁴⁷ Hacking has explored the dual nature of the concept of probability, which can refer to uncertainty resulting from either indeterminacy (as in the toss of a coin before it lands) or limited knowledge (as in the toss of a coin after it lands but before it is seen).⁴⁸ He demonstrates that thinkers analyzing social statistics in the nineteenth century began to consider the *a posteriori* statistical regularities they encountered as analogous to the *a priori* probabilities of mechanistically-determined phenomena.⁴⁹ This application of probability to statistics allowed for the aggregate-level prediction of social phenomena that could not be predicted at the individual level because the underlying mechanisms were unknown.⁵⁰ Alain Desrosières describes probabilistic-statistical reasoning and argumentation as the “politics of large numbers” because it relies on numerous observations to identify patterns and regularities.⁵¹ Hacking argues that analysts initially assumed that statistical patterns resulted from real but unknown mechanistic causes, but demonstrates

⁴⁵Timothy Alborn, *Regulated Lives: Life Insurance and British Society 1800-1914* (Toronto: University of Toronto Press, 2009); Dan Bouk, *How Our Days Became Numbered: Risk and the Rise of the Statistical Individual* (Chicago: University of Chicago Press, 2015).

⁴⁶Ian Hacking, *The Taming of Chance* (Cambridge: Cambridge University Press, 1990).

⁴⁷Daston, *Classical Probability in the Enlightenment*, see n. 28.

⁴⁸Ian Hacking, *The Emergence of Probability: A Philosophical Study of Early Ideas About Probability, Induction and Statistical Inference* (Cambridge: Cambridge University Press, 1975).

⁴⁹Hacking, *The Taming of Chance*, see n. 46.

⁵⁰Hacking, *The Emergence of Probability: A Philosophical Study of Early Ideas About Probability, Induction and Statistical Inference*, see n. 48; Daston, *Classical Probability in the Enlightenment*, see n. 28.

⁵¹Desrosières, see n. 26.

that, as the natural sciences also turned toward probabilistic analysis at the end of the nineteenth century, social scientists dispensed with the search for causes in a dual process he describes as “the erosion of determinism” and “the taming of chance.”⁵²

Historians of probability and statistics have demonstrated that these quantitative tools were developed in the social context of their application, and were only later abstracted into fields of mathematics.⁵³ One particularly important domain for the development of the statistical methods used by social scientists is eugenics — the science of improving the human condition through selective breeding. Donald MacKenzie has demonstrated the origins of mathematical statistics in efforts to identify and manipulate patterns of human heredity.⁵⁴ Histories of eugenics and histories of demography acknowledge the importance of each to the other, but tend to assume the stability and independence of these fields of thought. Histories of national eugenics movements in Europe between the world wars demonstrate that proponents of eugenics linked the rise of industrial poverty and growing threats to geopolitical power (for France vis-à-vis Germany and for Britain in its empire) to declining fertility, particularly among the professional middle classes.⁵⁵ Interwar eugenics programs were not limited to Europe and North America, and a small body of literature documents their existence in Asia and Latin America as well.⁵⁶ These studies have demonstrated that

⁵²Hacking, *The Taming of Chance*, see n. 46.

⁵³Daston, *Classical Probability in the Enlightenment*, see n. 28; Porter, *The Rise of Statistical Thinking, 1820-1900*, see n. 41; Donald A. MacKenzie, *Statistics in Britain, 1865-1930: The Social Construction of Scientific Knowledge* (Edinburgh: Edinburgh University Press, 1981); Stephen M. Stigler, *The History of Statistics: The Measurement of Uncertainty Before 1900* (Cambridge: Harvard University Press, 1986); Stephen M. Stigler, *Statistics on the Table: The History of Statistical Concepts and Methods* (Cambridge: Harvard University Press, 1999).

⁵⁴MacKenzie, see n. 53.

⁵⁵Richard Soloway, *Demography and Degeneration: Eugenics and the Declining Birthrate in Twentieth-Century Britain* (Chapel Hill: University of North Carolina Press, 1990); William H. Schneider, *Quality and Quantity: The Quest for Biological Regeneration in Twentieth-Century France* (Cambridge: Cambridge University Press, 1990); Allan C. Carlson, *The Swedish Experiment in Family Politics: The Myrdals and the Interwar Population Crisis* (New Brunswick: Transaction, 1990); Karl Ittmann, “The Colonial Office and the Population Question in the British Empire, 1918-62,” *Journal of Imperial and Commonwealth History* 27, no. 3 (1999): 55–81; Michael S. Teitelbaum and Jay M. Winter, *The Fear of Population Decline* (Orlando: Academic Press, 1985).

⁵⁶Nancy Leys Stepan, *The Hour of Eugenics: Race, Gender, and Nation in Latin America* (Ithaca: Cornell University Press, 1991); Yuehtsen Juliette Chung, *The Struggle for National Survival: Eugenics in Sino-Japanese Contexts* (New York: Routledge, 2002).

eugenics movements had strong support in the first half of the twentieth century, that this support came from multiple political positions, and that it was particularly strong among the professional middle classes.

Histories of eugenics credit demography with identifying declining fertility in the early twentieth century and bringing it into the public view, but they also assume a prior stability and authority for demography that elides the fact that it was — at that same interwar moment — coming into being with the support of the eugenics movement’s financial and social capital, as I will discuss in Chapters One and Two.⁵⁷ Reciprocally, histories of interwar demography examine the relationship between eugenics and demography during this period, but assume that the eugenic influence was carefully cordoned off from population science, and limited to the interwar period.⁵⁸ For example, Hodgson argues that the influence of eugenics on demography waned in the 1930s when “Nazi actions largely discredited the eugenics movement in the public’s eye, and advances in genetics continued to distance the movement from the scientific community.”⁵⁹ Hodgson’s erroneous claim is bolstered by the fact that much of the scholarship on the history of eugenics is limited to the period prior to World War II. However, Daniel Kevles and Alexandra Stern have demonstrated that eugenics continued well into the second half of the twentieth century.⁶⁰ While some interwar approaches continued — particularly the practice of eugenic sterilization in many states of the U.S. — new ones appeared, including marriage counseling and medical genetics. Stern also links eugenics in the twentieth century to conservation and environmental movements, a connection I will address in Chapter Six. Garland Allen argues that eugenics transformed into quantitative population control after World War II, and Connelly demonstrates that national eugenics programs in the global south provided footholds and support for early

⁵⁷See, for example: Soloway, see n. 55; Schneider, see n. 55.

⁵⁸Dennis Hodgson, “The Ideological Origins of the Population Association of America,” *Population and Development Review* 17, no. 1 (1991): 1–34; Edmund Ramsden, “Social Demography and Eugenics in the Interwar United States,” *Population and Development Review* 29, no. 4 (2003): 547–593.

⁵⁹Hodgson, “The Ideological Origins of the Population Association of America,” see n. 58, 21.

⁶⁰Daniel J. Kevles, *In the Name of Eugenics: Genetics and the Uses of Human Heredity* (New York: Knopf, 1985); Alexandra Minna Stern, *Eugenic Nation: Faults and Frontiers of Better Breeding in Modern America* (Berkeley: University of California Press, 2005).

efforts at population control.⁶¹ Alison Bashford, however, argues that eugenics continued alongside population control after World War II, a view this dissertation supports.⁶²

The history of population quantification, probabilistic and statistical analysis, and the development of such analysis in the fields of eugenics and insurance is a critical intellectual context for the history of demography. Demographers continue to depend on vital statistics collected by states and on analytic methods developed in eugenics and insurance, as will be discussed at greater length in Chapters One and Two. Some of the scientists now identified as early demographers worked in the insurance industry, and many prominent twentieth-century demographers maintained close ties to the American Eugenics Society and other eugenicist groups and movements throughout the period covered by this dissertation. Population quantification and probabilistic-statistical analysis have also been crucial foundations for the development of the human and social sciences more broadly in the twentieth century. While the human and social sciences cannot be reduced to statistical analysis of population data, population data form the denominator for many social, economic, and political indices, and statistics have been endowed with the authority to make claims about people and societies. The following section turns to the historical literature on the human and social sciences in the United States.

History of the Human and Social Sciences

Histories of the human and social sciences in the United States typically focus on one of three periods: the second half of the nineteenth century, when thinkers began to consider the possibility of scientific approaches to the emerging problems of industrial society; the first half of the twentieth century, which saw the institutional separation of social science and social reform; and the second half of the twentieth century, when the U.S. government began to fund the social sciences and to enlist social scientists in domestic governance and

⁶¹Garland Allen, "Old Wine in New Bottles: From Eugenics to Population Control in the Work of Raymond Pearl," in *The Expansion of American Biology*, ed. Keith R. Benson, Jane Maienschein, and Ronald Rainger (New Brunswick: Rutgers University Press, 1991); Connelly, see n. 8.

⁶²Bashford, see n. 10.

international intervention projects.

Scholars who treat the history of the human and social sciences in the second half of the nineteenth century describe social thought as a response to modernity and its new complex form of society in which individuals interact with and rely on strangers on a larger scale than ever before.⁶³ By the end of the nineteenth century, it had become apparent to observers that modern urban industrial society promoted social inequality. Enormous wealth abutted abject poverty, which was accompanied by misery and strife. Daniel Rodgers has demonstrated that the modern urban industrial world at the turn of the twentieth century was a transatlantic one, with international trade linking North America and Western Europe. On both sides of the Atlantic, social thinkers hoped that, by investigating the modern world, they could discover ways to temper its excesses, defuse class conflict, and ameliorate poverty and its sequelae without disrupting economic growth.⁶⁴ Dorothy Ross argues that, while European social scientists focused on socioeconomic inequality as a major social problematic, American social scientists deferred class analysis to analysis of race and ethnicity, explaining social inequality in uniquely American terms that denied the need for intervention into the economy or social structure itself.⁶⁵

Rodgers points out that this transatlantic world of social reform was also the crucible for the formation of the modern social science disciplines.⁶⁶ Many late-nineteenth century U.S. thinkers traveled to Germany for graduate study in the social sciences (mainly economics), laying the foundation for the modern American university system, which combined teaching and research.⁶⁷ Histories of the human and social sciences in the first half of the twentieth

⁶³Thomas L. Haskell, *The Emergence of Professional Social Science: The American Social Science Association and the Nineteenth Century Crisis of Authority* (Urbana: University of Illinois Press, 1977); Robert C. Bannister, *Sociology and Scientism: The American Quest for Objectivity, 1880-1940* (Chapel Hill: University of North Carolina Press, 1987); Edward Shils, "The Order of Learning in the United States: The Ascendancy of the University," in *The Organization of Knowledge in Modern America, 1860-1920*, ed. A. Oleson and J. Voss (Baltimore: Johns Hopkins University Press, 1979).

⁶⁴Daniel T. Rodgers, *Atlantic Crossings: Social Politics in a Progressive Age* (Cambridge: Belknap, 1998).

⁶⁵Dorothy Ross, *The Origins of American Social Science* (Cambridge: Cambridge University Press, 1991).

⁶⁶Rodgers, see n. 64.

⁶⁷A. Oleson and J. Voss, eds., *The Organization of Knowledge in Modern America, 1860-1920* (Baltimore: Johns Hopkins University Press, 1979); J. Heilbron, "A Regime of Disciplines: Toward a Historical Sociology of Disciplinary Knowledge," in *The Dialogical Turn: New Roles for Sociology in the Postdisciplinary Age*,

century have demonstrated that, as these new disciplines split from one another and got institutionalized in new university departments, their practitioners distinguished their own work from social reform, which also professionalized in such fields as social work during the same period.⁶⁸ The division between social science and social reform was a gendered one, with women largely being excluded from the emerging social sciences and marginalized in the new professional schools and in public administration.⁶⁹ Histories of the human and social sciences during the first half of the twentieth century have demonstrated that the institutionalization of these new disciplines involved both the definition of the boundaries of the field — including both the boundaries between disciplines and the boundary between knowledge production and administration, reform, or treatment — and the guarding of those boundaries through the development of training and licensing programs.⁷⁰ These credentialing processes explicitly excluded amateurs, but also often tacitly excluded women and non-white scholars.⁷¹

Scholars who have paid particular attention to the funding of the human and social sciences in the first half of the twentieth century have complicated the narrative of the separation between social science and social reform by pointing out that philanthropic foundations were the major source of funding for the human and social sciences during this period. Historians have demonstrated that philanthropic organizations funded social science research in order to inform charity programs but, with this funding, exercised control over the scope, content, and methods of social science, and over the ways in which poverty and related social problems would be understood and addressed.⁷² The organizations that funded social

ed. C. Camic and H. Joas (Lanham: Rowman and Littlefield, 2004).

⁶⁸For the history of social work, see Regina G. Kunzel, *Fallen Women, Problem Girls: Unmarried Mothers and the Professionalization of Social Work, 1890-1945* (New Haven: Yale University Press, 1993).

⁶⁹Kathryn Kish Sklar, *Florence Kelley and the Nation's Work: The Rise of Women's Political Culture, 1830-1900* (New Haven: Yale University Press, 1995); Ellen F. Fitzpatrick, *Endless Crusade: Women Social Scientists and Progressive Reform* (New York: Oxford University Press, 1990).

⁷⁰Heilbron, see n. 67.

⁷¹Michael Kennedy and Miguel A. Centeno, "Internationalism and Global Transformations in American Sociology," in *Sociology in America: A History*, ed. Craig Calhoun (Chicago: University of Chicago Press, 2007).

⁷²Mark Solovey, *Shaky Foundations: The Politics-Patronage-Social Science Network in Cold War America* (New Brunswick: Rutgers University Press, 2013); Alice O'Connor, *Social Science for What? Philanthropy and the Social Question in a World Turned Rightside Up* (New York: Russell Sage Foundation, 2007); Donald Fisher, *Fundamental Development of the Social Sciences: Rockefeller Philanthropy and the United*

science research promoted new standards of objectivity that eschewed normative approaches to poverty and embraced quantitative methods.⁷³ By upholding these new definitions of objectivity, the organizations that funded social science research encouraged social scientists to take on the role of service intellectual, providing policy makers with information rather than recommendations.⁷⁴

Histories of the human and social sciences during the second half of the twentieth century emphasize the alliance between the social sciences and the U.S. government during World War II and the Cold War. These works have demonstrated that, during World War II, military strategists and policy makers began to view the psychological sciences as critical to the war effort, and to invest in research accordingly.⁷⁵ During the Cold War, the U.S. government began to rely even more heavily on the work of human and social scientists — including sociologists, political scientists, and economists as well as psychologists — both to maintain political consent in the U.S. and to promote U.S. hegemony abroad.⁷⁶ Studies of this period have demonstrated the imbrication of government and universities in the pursuit of social science, with government funding academic research and academic scientists working on government contracts, though the large philanthropic foundations continued to promote social science, with the Ford Foundation establishing the area studies programs of the Cold War period.⁷⁷ Grants from government and foundations continued to promote the

States Social Science Research Council (Ann Arbor: University of Michigan Press, 1993); Ellen Condliffe Lagemann, *The Politics of Knowledge: The Carnegie Corporation, Philanthropy, and Public Policy* (Middletown: Wesleyan University Press, 1989); Olivier Zunz, *Philanthropy in America: A History* (Princeton: Princeton University Press, 2012); Judith Sealander, *Private Wealth and Public Life: Foundation Philanthropy and the Reshaping of American Social Policy from the Progressive Era to the New Deal* (Baltimore: Johns Hopkins University Press, 1997).

⁷³O'Connor, *Social Science for What? Philanthropy and the Social Question in a World Turned Rightside Up*, see n. 72; Ross, *The Origins of American Social Science*, see n. 65.

⁷⁴Mark C. Smith, *Social Science in the Crucible: The American Debate Over Objectivity and Purpose, 1918-1941* (Durham: Duke University Press, 1994).

⁷⁵Ellen Herman, *The Romance of American Psychology: Political Culture in the Age of Experts* (Berkeley: University of California Press, 1995).

⁷⁶Joy Rohde, *Armed with Expertise: The Militarization of American Social Research During the Cold War* (Ithaca: Cornell University Press, 2013); Sonja M. Amadae, *Rationalizing Capitalist Democracy: The Cold War Origins of Rational Choice Liberalism* (Chicago: University of Chicago Press, 2003); Mark Solovey and Hamilton Cravens, eds., *Cold War Social Science: Knowledge Production, Liberal Democracy, and Human Nature* (New York: Palgrave Macmillan, 2012); Solovey, see n. 72.

⁷⁷For academics working on government contract, see Rohde, see n. 76; for the Ford Foundation, see

service intellectual model of scholarship, though Joy Rohde has demonstrated that social scientists working on government contracts took a variety of approaches to the question of normativity in their work.⁷⁸ These funding sources also continued to promote the use of quantitative methods, which remained nearly hegemonic in the social sciences immediately following World War II.⁷⁹ However, histories of the human and social sciences demonstrate that many of these disciplines suffered serious crises of authority in the late 1960s and early 1970s, stemming both from critiques of the involvement of the Vietnam War government in social science research and from critiques of the exclusivity of the social sciences in terms of race, class, gender, and ethnicity, all of which served to maintain the existing social order.⁸⁰

The history of demography fits well within this twentieth-century narrative of the human and social sciences, and adds some new elements to it. Existing histories of the human and social sciences assume that it was obvious in advance which topics would be the subjects of those sciences and how disciplines would be divided from one another.⁸¹ As an interdisciplinary field of inquiry lying between the human/social and natural sciences, demography provides an opportunity to examine the historical process of boundary formation between these fields. Although many historians discuss the influence of biology, particularly evolution, on the methods and theories of the social sciences,⁸² it is only in the realm of human population projection that scholars have discussed territorial skirmishes between biology and

Solovey, see n. 72.

⁷⁸Rohde, see n. 76.

⁷⁹George Steinmetz, "American Sociology Before and After World War II: The (Temporary) Settling of a Disciplinary Field," in *Sociology in America: A History*, ed. Craig Calhoun (Chicago: University of Chicago Press, 2007); Calhoun and VanAntwerpen question this view, suggesting that this hegemony was constructed after its supposed demise by its challengers in the 1960s and 1970s, who cast themselves in contrast to it. Craig Calhoun and Jonathan VanAntwerpen, "Orthodoxy, Heterodoxy, and Hierarchy: 'Mainstream' Sociology and its Challengers," in *Sociology in America: A History*, ed. Craig Calhoun (Chicago: University of Chicago Press, 2007).

⁸⁰Steinmetz, see n. 79; Calhoun and VanAntwerpen, see n. 79.

⁸¹See, for example: Bannister, see n. 63; Mary O. Furner, *Advocacy and Objectivity: A Crisis in the Professionalization of American Social Science, 1865-1905* (Lexington: University Press of Kentucky, 1975); Haskell, see n. 63; Ross, *The Origins of American Social Science*, see n. 65.

⁸²See, for example: Carl N. Degler, *In Search of Human Nature: The Decline and Revival of Darwinism in American Social Thought* (New York: Oxford University Press, 1991); Mike Hawkins, *Social Darwinism in European and American Thought, 1860-1945: Nature as Model and Nature as Threat* (Cambridge: Cambridge University Press, 1997); Rebecca Lemov, *World as Laboratory: Experiments with Mice, Mazes, and Men* (New York: Hill and Wang, 2005).

sociology, a topic this dissertation takes up in Chapters One and Two.⁸³ Attention to the role of biology in the coalescence of demography between the world wars (Chapter One) and attention to the role of biologists in the establishment of demography's disciplinary institutions (Chapter Two) disrupts both the continuity demographers typically assume between their field and nineteenth-century vital statistics and the assumption that demography was naturally and obviously a social science.⁸⁴ At the same time, the establishment of demography between the wars is an often-overlooked aspect of social scientists' embrace of quantitative methods and performance of objectivity in that period.

Because demography remained an interdiscipline, rather than becoming a discipline of its own or being absorbed into an existing discipline, it provides another example of what Joel Isaac has termed the “interstitial academy” — the highly productive interdisciplinary spaces between and outside of university departments.⁸⁵ As I will discuss in Chapters Two and Five, demography's location between rather than within university departments made the field particularly vulnerable to influence from external funding agencies. Demography also provides an important perspective on the history of funding for the human and social sciences after World War II, when the U.S. government replaced private philanthropic foundations as the major benefactor of these fields. I demonstrate in Chapters Four through Six that the philanthropic foundations themselves promoted government investment in the human and social sciences, and in this way directly influenced policy.

Locating the origins of demography as a policy-oriented science of human population with roots in vital statistics, life insurance, public health, birth control, eugenics, biology, and the social sciences between the world wars offers a new perspective on the field that elucidates

⁸³Edmund Ramsden, “Carving Up Population Science: Demography and the Controversy Over the ‘Biological Law’ of Population Growth,” *Social Studies of Science* 32 (2002): 857–899; Sharon Kingsland, “The Refractory Model: The Logistic Curve and the History of Population Ecology,” *Quarterly Review of Biology* 57, no. 1 (1982): 29–52.

⁸⁴See, for example: Frank W. Notestein, “Demography in the United States: A Partial Account of the Development of the Field,” *Population and Development Review* (1982): 651–687; Hodgson, “The Ideological Origins of the Population Association of America,” see n. 58.

⁸⁵Joel Isaac, *Working Knowledge: Making the Human Sciences from Parsons to Kuhn* (Cambridge: Harvard University Press, 2012).

its mutual constitution with population politics and projects of population engineering both before and after World War II. It challenges the accepted periodization of demography by disrupting the assumed continuity between demography and vital statistics and by revealing continuity in demography's policy orientation across the assumed rupture of World War II. This dissertation traces the history of demography as a policy science from its coalescence between the world wars — when it drew support from a range of population-oriented political projects, as will be described in Chapter One — to the abandonment of global population control as an element of U.S. foreign policy in 1984, as described in Chapter Seven. It details the history of population science during a period when powerful individuals and institutions attributed many of the world's problems — including poverty, industrial and geopolitical conflict, resource depletion, and ecosystem degradation — to population dynamics, and supported and relied on demography as a science that could inform and legitimize population interventions.

0.2.2 Geographical Scope

The history of demography and population politics presented in this dissertation is both a U.S. history and a global history, examining the activities of U.S.-based population science and politics on the global stage. This geographical scope is not arbitrary. In the twentieth century, the United States was a major center of worldwide population research and intervention. As Matthew Connelly has demonstrated, U.S. actors

were the first to pursue policies intended to shape world population. They played a leading role in institutionalizing both the science of demography and the political strategy of family planning, at the same time mentoring protégés around the world. They were disproportionately represented in the international and nongovernmental organizations that created standardized population control programs, which were largely funded by public and private sources in the United States.⁸⁶

⁸⁶Connelly, see n. 8, 11.

Globally, more funding for both demography and population control has come from the United States than from any other country. This dissertation follows U.S.-based actors around the world as they negotiated the population politics of fascist Europe between the world wars, and as they turned their attention to decolonizing countries after World War II, marshaling population analysis and intervention to keep those countries aligned with the United States in an increasingly polarized Cold War world. It is a global history not only because it deals with the world as a whole but also because it examines the role that population and its science and politics played in twentieth-century world history, from the Great Depression through World War II, the Cold War, and decolonization.⁸⁷

Actors in this story include individuals, institutions, publications, and populations, aggregated at a variety of levels. Most frequently, I refer to specific individuals or institutions, or to the governments or populations of specific countries. At times, I aggregate these actors further. I use the phrase “the population establishment” to refer to the network of scientific, philanthropic, and governmental institutions and individuals involved in defining and solving “population problems” worldwide. Although this phrase is sometimes attributed to Matthew Connelly, it has been used by those critical of population control since at least 1981.⁸⁸ I also aggregate countries into continents and into two socioeconomic and political groups, which I term the “global north” and the “global south.”

Broadly, the “global north” refers to the countries that form the “core” of the global economy (in a world-systems sense), into which the world’s materials and wealth flow as a result of the imperial relationships established between these countries and the rest of the world beginning in the fifteenth century.⁸⁹ In general, these countries are located above 30°north latitude, with the notable exceptions of Australia and New Zealand, countries of large-scale European settlement in the southern hemisphere. The countries of the global

⁸⁷At present, this statement is more aspirational than descriptive, but the book will amplify the world-historical element of the story.

⁸⁸The earliest reference I could find is Julian L. Simon, *The Ultimate Resource* (Princeton: Princeton University Press, 1981).

⁸⁹Immanuel Wallerstein, *The Modern World-System* (New York: Academic Press, 1974).

north — particularly the U.K., the U.S., Australia, and Canada — have large coal deposits, which fueled (but did not overdetermine) industrialization, while the countries of the global south have the climatic conditions necessary to produce many industrial raw materials, such as cotton, jute, oil, and rubber.⁹⁰ In general, the countries of the global north are those that colonized territory in the global south or otherwise benefited economically and politically from the imperial system that lasted from the late fifteenth century to the mid twentieth century. The countries of the global south are those that were colonized or otherwise politically and economically dominated and compelled to produce the primary materials of industry — the “periphery” of the world-systems model.⁹¹ Such a divide is clearly reductive, and masks important differences both between and within countries in these categories. However, the north/south classification is less anachronistic than some of its alternatives. These alternatives include the “three worlds” of the Cold War — the First (capitalist) World, the Second (communist) World, and the Third (nonaligned) World — and the more/less developed categories employed by the United Nations and other development organizations, which rely on a concept of development that emerged only after World War II and elide the history of imperialism that shaped the very categories of “developed” and “underdeveloped” or “developing.”⁹² In contrast, the terms “global north” and “global south” capture the inequalities between these two categories that have persisted across the colonial/postcolonial rupture, and emphasize the environmental differences that contributed to the production of political and socioeconomic differences.

⁹⁰China also had large coal deposits, but lacked the access to internal waterways that would have made their exploitation profitable. Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (New York: Verso, 2011).

⁹¹Although the countries of Central and South America established independence from colonial rule in the nineteenth century, I (and others) classify them into the category of global south because they remained under the political and economic sway of the United States.

⁹²Arturo Escobar, *Encountering Development: The Making and Unmaking of the Third World* (Princeton: Princeton University Press, 1995); Arturo Escobar, “Power and Visibility: Development and the Invention and Management of the Third World,” *Cultural Anthropology* 3, no. 4 (1988): 428–443.

0.3 Sources

I have pieced this story together mainly through close reading of evidence gathered from the archival records, publications, and grey literature (official but unpublished documents produced in government, academia, non-governmental organizations, and industry) of demographers and their patrons and clients, as well as their interlocutors and antagonists, over the twentieth century. I conducted oral history interviews with prominent living demographers, utilized publicly-available transcripts of oral history interviews with demographers and other key actors carried out by others, and analyzed data and documentation from fertility surveys conducted in the United States, Puerto Rico, and Taiwan in the 1950s and 1960s.

Archival research for this project took me to the Hoover Institution (papers of demographer Kingsley Davis and U.S. Representative Paul “Pete” McCloskey Jr.), the Stanford University Archives (papers of biologist Paul Ehrlich and his organization Zero Population Growth), the American Philosophical Society (papers of biologist Raymond Pearl and eugenicist Frederick Osborn and records of the International Union for the Scientific Investigation of Population Problems and the American Eugenics Society), the Princeton University Archives (papers of demographers Frank Notestein, Ansley Coale, and Alfred Lotka; papers of philanthropist Hugh Moore; records of the Wilson School for Public and International Affairs), the United Nations archives, the Yale University Archives (records of the Milbank Memorial Fund), and the Rockefeller Archive Center (papers of John D. Rockefeller III and records of the Rockefeller Foundation and the Population Council). These archival materials allowed me to identify personal and professional networks of people and institutions, as well as the links between demographers and their patrons and clients. It also offered perspectives of the relevant actors on major events and publications.

Published sources, including scholarly journals, academic, technical, and popular books, and the mass media, provided me with access to the public face of demography and pop-

ulation politics, allowing me to identify the circulation of scholarly and popular narratives about population growth and its causes and consequences. Published sources also allowed me to analyze narratives that were adjacent or antagonistic to those produced by demographers and their patrons and clients, placing demography into broader intellectual and political contexts. JSTOR has given me access to the full text of all articles (as text files) from three major English-language demography journals — *Population Studies*, *Demography*, and *Population and Development Review* — from their establishment through 2010, facilitating the use of topic modeling (latent dirichlet allocation) to examine and quantify the content of these journals over time.⁹³ I also used metadata for population-related articles from these journals and 38 others to map the conceptual terrain of demography and its relationship to its neighboring fields.⁹⁴ These methods are discussed in greater detail at <http://www.emilyklancher.com/digdemog>.

Many demographers were kind enough to let me interview them for the oral history component of this project. I conducted interviews with Douglas Massey (by email), John Knodel, Ronald Lee, Richard Easterlin, James Trussell, Karen Hardee, and Gretchen Condran in 2012 and with Avery “Pete” Guest (by telephone) in 2014. As demographers have long had a major role in preserving and writing the history of their discipline, the Population Association of America (PAA) has a history committee that maintains a website with information about the history of the PAA and transcripts of interviews that comprise the PAA Oral History Project and include many of the PAA’s presidents from 1947 to 2013.⁹⁵ An additional source of oral history transcripts for this project was the Population and Reproductive Health Oral History Project in the Sophia Smith Collection at Smith College.⁹⁶

Censuses and surveys are some of the most important tools of demographic research. As

⁹³For an accessible discussion of latent dirichlet allocation, see <http://www.matthewjockers.net/2011/09/29/the-lda-buffet-is-now-open-or-latent-dirichlet-allocation-for-english-majors/>. More information about the method and corpus, as well as the results of the topic modeling, are given at <http://www.emilyklancher.com/digdemog/tmod/topicmod.html>.

⁹⁴For methods, corpus, and results, see <http://www.emilyklancher.com/digdemog/nets/networks.html>.

⁹⁵<http://geography.sdsu.edu/Research/Projects/PAA/paa.html>.

⁹⁶<http://www.smith.edu/libraries/libs/ssc/prh/prh-narrators.html>.

the dissertation will discuss, demographers have utilized survey methods to conduct research into the correlates of fertility in the United States since the 1940s, and worldwide since the 1960s. Scholars have demonstrated that these fertility surveys both observed and intervened in fertility behavior. Many surveys intended not only to measure and evaluate attitudes and behavior related to fertility, but also to shape attitudes and behavior, and often included an explicit family planning component.⁹⁷ These surveys also played an important role in shaping policy and public opinion surrounding family planning programs.⁹⁸ Raw data and documentation are publicly available for some of these surveys through the Inter-university Consortium for Political and Social Research at the University of Michigan.⁹⁹ When available, I draw on survey documentation to examine how demographers studied and attempted to shape individual attitudes and behavior related to childbearing and contraception, and analyze survey data to discover the findings of this research independently of the associated publications.

0.4 Overview

Chapter One begins with a discussion of population thought and accounting in Western Europe and North America from the eighteenth century to 1920, when my story begins. I demonstrate that, in 1920, there was no such thing as population science and nobody called himself a population scientist or demographer. Nonetheless, population had taken a central role in three political movements — birth control legalization, immigration restriction, and eugenics — each of which called on visions of future population size and/or composition to legitimize its agenda. Scientists in a number of fields — including biology, statistics, and sociology — who were either sympathetic or antagonistic to these movements began to de-

⁹⁷Mahmood Mamdani, *The Myth of Population Control: Family, Caste, and Class in an Indian Village* (New York: Monthly Review Press, 1973); Agnes Riedmann, *Science that Colonizes: A Critique of Fertility Studies in Africa* (Philadelphia: Temple University Press, 1993).

⁹⁸Saul Halfon, *The Cairo Consensus: Demographic Surveys, Women's Empowerment, and Regime Change in Population Policy* (Lanham: Lexington Books, 2007).

⁹⁹<http://www.icpsr.umich.edu>.

velop systematic methods of analyzing population and predicting its future growth or decline, which they and others marshaled in support of their political positions. In this chapter, I trace two competing theories of population growth that were articulated in the 1920s — the logistic law of population growth, which understood populations as organisms whose growth was determined by biological factors, and demographic transition theory, which understood populations as aggregates of individuals whose growth was determined by social factors — and two competing methods of population projection (estimates of future population size and/or structure) that corresponded to these theories of growth. I argue that scientific understandings of population growth were multiple and contradictory: those who asserted their expertise disagreed over whether populations in North America and Western Europe were growing or declining, and over which trend was preferable.

Chapter Two traces the institutional history of demography between the world wars, focusing on the United States, but with brief discussions of similar developments in the U.K. and the relationship between demography and the politics of population in Western Europe in the 1930s. I document demography's acquisition of patrons and clients and their role in establishing and providing legitimacy to the new interdisciplinary field as it acquired the trappings of an academic discipline — professional associations, journals, academic research centers, and training programs. I argue that, as demographers and their patrons — philanthropic foundations — established these institutions, and as demography's clients — governments and eugenics societies — began to incorporate demographers and their research into their own programs and projects, all three types of actors negotiated the boundary between the science and politics of population. As they did so, they excluded the politics of birth control and distinguished between mainstream eugenics — which was increasingly discredited through its association with Nazi population policies — and what historians have termed “reform” or (supposedly) non-racist eugenics, keeping the latter inside and the former outside the boundaries of population science. I argue that the small size of the field and the close working and interpersonal relationships between demographers and their patrons

and clients gave patrons and clients a substantial degree of influence over the content of the new interdisciplinary field of demography.

Chapter Three demonstrates that, during and after World War II, U.S.-based demographers expanded the ambit of their field to include population worldwide. A major catalyst for this expansion was the postwar establishment of the United Nations and the ambitions of its founders toward global governance and global socioeconomic development, a new concept made possible by the emergence of national economies as sociotechnical objects.¹⁰⁰ U.N. delegates saw the collection of global population data and production of global population projections as an important basis for planning, but quickly found that the requisite data were not available for much of the world, particularly the global south. Since the U.N. had neither the resources nor the authority to carry out a global census, it provided member states with technical assistance in establishing systems of enumeration and vital registration, and supported efforts of academic demographers to develop methods of estimating the detailed population data required to make projections from sparse information. These methods relied on demographic transition theory, which — at the same moment — faced challenges from two new population trends: mortality decline in the global south in the absence of “modernization” and fertility increase in the global north in conjunction with the spread of birth control. I argue that these challenges to demographic transition theory, combined with the difficulty of collecting and collating data from the global south, amounted to a crisis of legitimacy for the new field of demography.

Chapter Four examines how demography overcame this crisis of legitimacy by adapting demographic transition theory to complement modernization theory and support the emerging economic discourse of overpopulation. With this adaptation, demography acquired new patrons — the powerful Rockefeller and Ford Foundations — and new clients — lobbyists for population control in the global south as a component of U.S. foreign policy and nongovern-

¹⁰⁰See, for example: Mitchell, *Carbon Democracy: Political Power in the Age of Oil*, see n. 90; Daniel Hirshman and Isaac Ariail Reed, “Formation Stories and Causality in Sociology,” *Sociological Theory* 32, no. 4 (2014): 259–282.

mental organizations that provided and supported family planning services in the global south, such as the Population Council, established by John D. Rockefeller III in 1952. These new patrons and clients saw in demography the solution to their anxiety that the rapid growth of poor and disaffected populations in the global south would disrupt U.S. economic and military activities by fueling political unrest, particularly anti-colonial nationalism and communist revolution. The economic overpopulation discourse relied on the new concept of national economies as something that could be measured and expanded, posing population growth as a barrier to economic development, and the dissemination of family planning as a stimulus to economic growth. As economic development in the global south became a component of U.S. Cold War strategy, so too did population control.¹⁰¹ This chapter explores the role of demography and its patrons and clients in the emergence and popularization of the economic discourse of overpopulation, tracing a critical study on the relationship between population growth and economic development in India from grant, to research, to scholarly publication, to the mass media, and finally to U.S. foreign policy.

Chapter Five documents the influence of the economic overpopulation discourse on the structure and content of academic demography in the United States and the global south. During the 1960s, the Ford Foundation and the Population Council funded the establishment of population research centers at universities in the U.S. and the global south, bringing statisticians and demographers from the global south to U.S. universities for training. I argue that, to meet the needs of patrons and clients, demographers focused their field narrowly around research on the individual correlates of fertility, rather than the relationship between fertility and economic development or well-being. Many of these studies included direct fertility interventions in the global south and among poor and nonwhite Americans. I demonstrate that concern about population growth among U.S. philanthropists generated funding for the development of new systemic contraceptives that worked directly on women's

¹⁰¹For economic development and foreign aid as a U.S. Cold War strategy, see Amanda Kay McVety, *Enlightened Aid: U.S. Development as Foreign Policy in Ethiopia* (New York: Oxford University Press, 2012).

bodies and increased the power of medical authorities over individual childbearing decisions. This chapter also documents the skepticism of some demographers that the voluntary adoption of family planning could effectively reduce fertility, and the proposals they made for structural alternatives that would change the social status of women and childbearing. I argue that these debates over the means of fertility reduction signaled the acceptance by demographers that high fertility was detrimental to economic development and needed to be stemmed.

Chapter Six focuses on the domestic politics of population in the United States, examining the environmental discourse of overpopulation that grew in strength in the late 1960s, promoted by some of the same interests described in Chapter Four and by some new interests. This discourse, which posed population growth as a threat to resource conservation and environmental integrity worldwide, shifted the geographic focus of concern about population growth from the global south to the global north, where per-capita rates of resource use and pollution were much higher. I argue that, as the U.S. became more politically divided toward the end of the 1960s, concern for the environment galvanized support on the left wing of the political spectrum for coercive population control measures in both the U.S. and abroad (including calls for new restrictions on immigration to the U.S., which had been opened by the Immigration and Naturalization Act of 1965), while continued concern with the threat of communism and urban unrest generated support on the right for the legalization of abortion and the provision of contraceptives worldwide. This chapter offers a new perspective on what Thomas Robertson calls “environmental Malthusianism” by documenting the distinction between the environmental and economic overpopulation discourses and the strong criticism of the environmental overpopulation discourse by demographers and some of their patrons, notably the Population Council. These critics challenged the direct relationship between population growth and environmental degradation proposed by the environmental overpopulation discourse, and cautioned that population control movements in the global north diverted attention and resources from population control programs in the

global south, which demographers and their patrons continued to promote as necessary for economic development.

Chapter Seven returns the focus to the global scene. It begins at the height of support worldwide for the economic discourse of overpopulation and population control programs in the global south, when the president of the Population Council engineered the Council's nomination for the Nobel Peace Prize in 1972. It then traces critiques of the economic overpopulation discourse, which emerged among demographers in Latin America and demography graduate students in the U.S., and culminated in the rejection by governments in the global south of population control as a vehicle for economic development at the 1974 U.N. World Population Conference. These critiques of the economic overpopulation discourse came from the political left and precipitated important changes in personnel and strategy within the major organizations that funded demography research and population control, notably the Ford Foundation and the Population Council. I demonstrate that, in addition to these institutional changes, many of the individuals involved in the establishment of demography and its relationship to the economic discourse of overpopulation — including demographers, patrons, and clients — died or retired in the decade following the 1974 meeting, opening new possibilities for research in the field and its relationship to population politics. I also document a right-wing critique of the economic discourse of overpopulation that emerged after the 1974 meeting at the intersection of neoliberalism and evangelical Christianity. The rise of these ideologies was reflected in the 1980 election of Ronald Reagan, who used the 1984 U.N. World Population Conference as a platform from which to announce that population growth in the global south would no longer be a factor in U.S. foreign policy and that the U.S. government would no longer fund organizations that performed or counseled abortion anywhere in the world. I argue that this announcement signaled the end of demography's policy orientation, opening the field to new topics, methods, and political alignments.

This dissertation offers a new history of the science of demography from its establishment as an academic field of inquiry between the world wars to the abandonment of population

control as a component of U.S. foreign policy in 1984. I argue that this interdisciplinary science emerged in tandem with the population-oriented politics of birth control legalization, immigration, and eugenics in Western Europe and North America. Demographers themselves saw their work intervening in these debates, as did the patrons and clients of demographic research, who supported and legitimized the institutionalization of demography in academia and government in the U.S. and exerted considerable influence on the content of its research. By demonstrating the policy orientation of interwar demography, I disrupt the claim of demographers that their field became a policy science only after World War II. Nonetheless, I demonstrate the emergence of two new and distinct political discourses of overpopulation after World War II, challenging the characterization by historians of postwar population thought as relatively homogeneous and continuous with earlier Malthusian theory. While other scholars have assumed that demography formed an unambiguous scientific basis for postwar population interventions, I argue that demography too was shaped by those interventions through the influence of the field's patrons and clients on its structure, content, and public communication. Contextualizing demography in this way is critical, given the numerous and fundamental uses of demographic data and analyses: as a measure of the human strength of nations, as the denominator for per-capita social and economic indices, as an input to other scientific models, as a basis for planning, and as a justification for policy intervention into the most intimate realms of human life.

Chapter 1

Population Problems, Models, and Politics

In 1927, American birth control advocate Margaret Sanger organized an international conference for population science in Geneva, drawing participants from Europe, the Americas, and Asia. At the conference, they discussed population trends, their causes and consequences, and methods of measuring and predicting them. In *Global Population: History, Geopolitics, and Life on Earth*, historian Alison Bashford draws a direct line from Thomas Robert Malthus's 1798 *Essay on the Principle of Population* to the 1927 conference, and from there to the United Nations World Population Year, celebrated in 1974, presenting all three moments as reflective of awareness of the danger posed by world population growth to human survival.¹ In this chapter, I disrupt that continuous line, arguing that, prior to World War II, there was no consensus among scientists or policy makers that population growth, in and of itself, posed a threat to human survival. Rather, I contend that scientists and policy makers held a variety of ideas about population. I argue further that population was a deeply political issue, and that the politics of population inflected the various scientific forms of population analysis that emerged between the wars and are the topic of this chapter.

When Sanger proposed the 1927 conference, population science did not exist as a coherent field of inquiry and few would have considered themselves population scientists. There was no consensus about whether human population should be a topic for analysis in the natural sciences or the social sciences. Over the previous 150 years, population had become an object of analysis in two non-academic domains in North America and Western Europe: in government statistical offices, which took censuses and analyzed population change; and in

¹Bashford, see n. 10, 2.

private insurance companies, which turned a profit from the analysis of mortality. Population also served important theoretical functions in economic and biological thought, but had only just begun to become an object of analysis in those fields at the beginning of the twentieth century. In the 1920s, scientific analysis of population — other than for purposes of business and governance — was motivated by three political concerns of the world’s elite: birth control legalization, immigration, and eugenics. In that decade, scientists in a variety of fields — including statistics, biology, economics, and sociology — developed new measures of population growth, each demonstrating a looming “population problem” that mapped onto these political concerns. Advocates and opponents of birth control legalization, immigration restriction, and eugenics who were not themselves scientists drew on the work of those “population scientists” whose analysis best validated their program.

In general, advocates for these programs cited them as solutions to a future “population problem” — either overpopulation or population degeneration — while opponents cited them as causes of a future “population problem” — either depopulation or population degeneration. The phrase “the population problem” gained traction between the wars, but it did not have a stable referent. Those who used the phrase attached it to various and contradictory versions of “the population problem,” corresponding to their political sympathies. Because these were problems of the future rather than problems of the present, their advocates and opponents relied heavily on population projections — estimates of future population size and structure — to argue for or against these programs. However, in 1920, there was no agreed-upon method of projecting future population. Projection was not a new concept, but had in the past been performed by a range of actors for various reasons, and had generally used methods specific to the population in question and the reason for its projection.² During the 1920s, men who would later be recognized as the founders of the new field of population science — or demography, as its practitioners would generally call it by the end of the 1930s — developed methods of projecting future population and comparing population growth and

²For a review of population projections prior to 1920, see George Mair, “Population Projection: The State of an Art” (Ph.D. diss., Princeton University, 1957).

decline that met the needs of these political programs. Some of the methods developed in the 1920s are now staples of demography textbooks.

In this chapter, I offer a brief history of population thought and analysis from the late eighteenth century to the early twentieth, connecting population thought and analysis to the three prominent issues in early-twentieth-century population politics: birth control, immigration, and eugenics. I then introduce some of the men who, by the early 1930s, would identify themselves and each other as population scientists, along with the methods they developed and the political debates in which they participated. These men include Raymond Pearl and Lowell Reed, biologists at Johns Hopkins University who developed the logistic law of population and the logistic projection method; Alfred Lotka and Louis Dublin, statisticians at the Metropolitan Life Insurance Company, who developed the intrinsic rate of natural increase; economist Robert Kuczynski, who developed the net reproduction rate; and Pascal K. Whelpton and Warren S. Thompson, who developed the cohort component projection method and demographic transition theory. I examine the particular concept of population and its relationship to social, political, economic, and biological variables articulated by each of those methods and theories, and the ways in which they intervened in political debates. I argue that these methods and theories were suffused with the politics that motivated their development, and that they shaped how scientists and policy makers would understand population and population change for the rest of the century.

This chapter demonstrates that scientific and political views of population prior to World War II were multiple and multivalent. What would become standard measures of population and population change were only just being developed, and different measures offered divergent predictions about the future course of population. Prior to World War II, scientists differed over whether the world's population and the populations of specific countries in North America and Western Europe were growing steadily or on the verge of decline, and disagreed over which future was preferable.

1.1 The Malthusian Legacy: Population Thought and Politics Before the Twentieth Century

Present-day demographers often locate the beginning of their science in the 1798 publication of Malthus's *Essay on the Principle of Population*, which signaled a shift in the value accorded to population growth in Western Europe. Previously, European rulers and thinkers had viewed population and its growth as almost unqualified goods. Populations — defined administratively and territorially — belonged to sovereigns, and were resources that sovereigns could extract in the form of labor and military service or extract from in the form of taxation. Sovereigns had little obligation to feed or otherwise maintain their subjects, though subjects generally had some kind of claim to land for subsistence purposes. Mercantilism, the leading political-economic theory of the early modern period, sought to increase state wealth as the basis of national security and international power. Mercantilists viewed large populations as both sign and source of strong and wealthy states, and population growth as a fuel for economic growth and dynamism.³ Political theorists interpreted population growth as a sign of effective government. Malthus's *Essay* introduced ambivalence into scientific and political understandings of population growth, suggesting that it could be a liability as well as an asset. Political theorists and heads of state generally continued to view population growth as a source of national and military strength, though economists and formulators of domestic policy readily adopted Malthus's law of population to explain individual poverty. Malthusian theory inspired Darwin's theory of natural selection and supported its application to human social structures. Together, Malthusianism and Social Darwinism naturalized socioeconomic inequality in the democratic nineteenth-century societies of North America and Western Europe. This section details these developments and traces new forms of Malthusianism and Social Darwinism — neo-Malthusianism and eugenics — that emerged on both sides of the Atlantic during the Progressive Era at the turn of

³Yaukey, Anderton, and Lundquist, see n. 7.

the twentieth century.⁴

1.1.1 Population Accounting: Political Arithmetic and Censuses

Before the nineteenth century, Western European rulers rarely counted their subjects directly. Churches kept records of births, marriages, and deaths, and states counted whatever served as the basis of taxation, often hearths, windows, or grain production.⁵ Population accountants, known as political arithmeticians, developed mathematical methods for estimating the size of total, taxable, and military-eligible populations from whatever records or figures were available to them, often using methods developed by scientists outside of government.⁶ Political arithmeticians, such as John Graunt and William Petty, developed the concept of the life table, which quantifies the probability of dying at any given age. Life tables served as the basis for annuities, an important source of state income in Early Modern Europe, and for the nascent insurance industry.⁷ As early modern European rulers considered population a major source of state wealth and military power, population data were often maintained as closely guarded state secrets.⁸

By the end of the eighteenth century, new understandings of population dynamics began to unsettle the perceived reliability of common methods for estimating population. Early political arithmetic depended on the assumption of a constant relationship between the number of births or deaths and total population — that is, constant crude death rates (deaths per thousand people) and crude birth rates (births per thousand people) — but it had become apparent that fertility and mortality rates varied across time and space.⁹ Political arithmeticians therefore began to treat the relationship between births or deaths and total population

⁴For a transatlantic analysis of the Progressive Era, see Rodgers, see n. 64.

⁵Glass, *Numbering the People: The Eighteenth-Century Population Controversy and the Development of Census and Vital Statistics in Britain*, see n. 25.

⁶Rusnock, *Vital Accounts: Quantifying Health and Population in Eighteenth-Century England and France*, see n. 26.

⁷Daston, *Classical Probability in the Enlightenment*, see n. 28.

⁸Bourdelaís, see n. 25, 99.

⁹Cole, see n. 39.

as an empirical question, rather than a constant, and abandoned attempts to calculate total population from birth and death records. In Great Britain, political arithmeticians found themselves unable to answer what had become the most pressing population question of the eighteenth century: whether the population had declined since the 1688 Glorious Revolution as a result of ineffective rule and urban decadence. Debate over this question precipitated the passage of the 1800 Population Act, which mandated a decennial census beginning in 1801.¹⁰

In France and the United States, the shift from church record keeping and political arithmetic to government census-taking accompanied the democratic revolutions of the late eighteenth century, which — at least in theory — made populations sovereign. France's *Bureau de la statistique générale*, which is responsible for taking a census every five years and publishing the results, was established in August 1798, abolished in September 1812, and restored in 1834.¹¹ In the United States, census-taking was written into the Constitution, which mandated direct enumeration as the basis of both taxation and representation. Decennial censuses began in 1790, and the 1850 census was the first to list each free person by name.¹² Censuses can be a tool of self-government in the sense that, in many places, they facilitate legislative apportionment, but also in the sense that they are a disciplinary technology, forging individual relationships with the state that carries them out and serving as a mechanism of state surveillance, particularly of workers, immigrants, and nonwhites by the native-born white professionals who served as agents of the state.¹³

As North American and Western European states extended their bureaucratic and surveillance apparatus into the domestic spaces of their citizens and subjects in the nineteenth cen-

¹⁰Glass, *Numbering the People: The Eighteenth-Century Population Controversy and the Development of Census and Vital Statistics in Britain*, see n. 25.

¹¹Bourdelaïs, see n. 25, 107.

¹²Slaves were enumerated in separate schedules. According to Article 1, Section 2 of the Constitution, slaves counted as three-fifths of an individual for purposes of representation, though their political power accrued to southern white men, as slaves could not vote. Anderson, *The American Census: A Social History*, see n. 25.

¹³Nikolas Rose, *Powers of Freedom: Reframing Political Thought* (Cambridge: Cambridge University Press, 1999); Frankel, see n. 32.

ture, they began to extend formal political control over colonies in other parts of the world. Colonial censuses, however, continued to resemble political arithmetic more than they did metropolitan censuses, as colonial populations remained subject populations, to be extracted or extracted from.¹⁴ As will be discussed at greater length in Chapter Three, while metropolitan censuses produced self-governing citizens, colonial censuses produced colonial subjects, and the categories used in those censuses contributed to maintaining the legal distinctions between Europeans and non-Europeans on which colonial projects depended.

Population data proliferated over the course of the nineteenth century in Europe and North America.¹⁵ States established permanent statistical offices, which developed the infrastructure required to take regular censuses and perform vital registration, and invented new techniques of data analysis and presentation.¹⁶ In contrast to the population data collected before the nineteenth century, which may have circulated among select networks of clergy, scientists, or rulers but were not shared publicly, data collected by nineteenth-century states were published and publicized as part of nationalizing and democratizing efforts and to legitimize state power.¹⁷ Multi-national states of Central and Eastern Europe used censuses to classify and manage their diverse subjects, often in repressive and extractive ways, though censuses also inspired and justified nationalist movements within those states.¹⁸ Classification along such lines as race, religion, language, and occupation also served political purposes in democratic nation-states, both for those designing the categories and for those being classified.¹⁹

¹⁴See, for example, Robert R. Kuczynski, *Demographic Survey of the British Colonial Empire*, vol. 1 (London: Oxford University Press, 1948).

¹⁵Ian Hacking has described these data as part of “an avalanche of printed numbers.” Hacking, “Biopower and the Avalanche of Printed Numbers,” see n. 32.

¹⁶Schweber, see n. 39; Cole, see n. 39.

¹⁷Rusnock describes the networks through which early modern population data circulated. Rusnock, *Vital Accounts: Quantifying Health and Population in Eighteenth-Century England and France*, see n. 26; for the nineteenth century, see Frankel, see n. 32.

¹⁸For an example, see Holquist, see n. 35; Benedict Anderson discusses this role played by censuses in the anti-colonial nationalisms of the twentieth century, but they played a similar role in nineteenth-century European nationalisms. Benedict R. Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, Second (New York: Verso, 2006).

¹⁹For example, in designing an 1851 statistical report, French officials classified certain types of workers as artisans rather than laborers, thereby denying their class identification and reducing the number of “workers”

Censuses not only produce information about population size and composition, but also shape populations through the process Ian Hacking describes as “making up people” — by placing people into categories, the classificatory work of census-taking influences how people understand themselves and each other in relation to broader social groupings, and can thereby influence behavior.²⁰ The choice of questions and categories in a census is always a political decision, and census administrators design censuses to address political issues and shape their outcomes. In the antebellum U.S., pro- and anti-slavery factions in Congress debated how much and what kind of information should be collected in Census slave schedules, with Southerners opposing the recording of slaves’ family information, which would have further humanized them and increased the weight of arguments against the institution of slavery.²¹ After the Civil War, the decision to collect information on race, and the categories used, reflected developments in racial science — the science of human difference — which itself depended on the availability of census data classified into the relevant categories. These categories, in turn, changed over time as understandings of race and political uses of race changed.²² Systems of classification in censuses and other official statistics are vital tools for the production and maintenance of social categories.²³ As such, they never simply reflect already-existing categories, nor do they classify people without at the same time having some effect on the people they classify.

1.1.2 The Valence of Population: From Malthus to Darwin

European and North American thinking about population size became more ambivalent around the time that states began taking censuses. Malthus’s 1798 *Essay*, written in opposition to the optimism and idealism of intellectual supporters of the French Revolution

in order to prevent their organization and thereby counter the threat of socialism. Joan Wallach Scott, “A Statistical Representation of Work: La statistique de l’industrie à Paris, 1847-1848,” in *Gender and the Politics of History* (New York: Columbia University Press, 1988).

²⁰Hacking, “Making Up People,” see n. 37.

²¹Anderson, *The American Census: A Social History*, see n. 25.

²²Rodriguez, see n. 36; Nobles, see n. 36.

²³For more examples, see Bowker and Star, see n. 34.

— a direct response to Godwin’s “Political Justice” — inverted the valence of population growth, casting it as the fundamental source of poverty and misery at both individual and societal levels. Malthus attributed all individual and social ills to a natural tension between two fundamental facts: “First, that food is necessary to the existence of man. Secondly, that the passion between the sexes is necessary and will remain nearly in its present state.”²⁴ From these basic principles, Malthus deduced that individuals who could not control their sexuality, and societies whose members could not control their sexuality, would suffer the consequences of population pressing against the limits of food supply. This was so because, Malthus contended, “the power of population is indefinitely greater than the power in the earth to produce subsistence for man. Population, when unchecked, increases in a geometrical ratio. Subsistence increases only in an arithmetical ratio.”²⁵ That is, Malthus stated that population increases geometrically — by a constant *proportion* — while subsistence increases arithmetically — by a constant *increment*.

Present-day scholars who cite Malthus often describe him as the first prophet of overpopulation and inaccurately interpret his law of population as a prediction “that uncontrolled population growth would lead to war, starvation, and disease.”²⁶ However, unlike the population observers of the early twentieth century who will be discussed later in this chapter, Malthus was not concerned with the future. Rather, Malthus invoked his law of population to explain everyday misery. In fact, Malthus never predicted overpopulation, and contended that population could not grow beyond the limits of subsistence.²⁷ However, he argued that, always and everywhere, human population strained the capacity of the food supply. The balance between population and food supply was maintained by two types of checks on population. First was what he called “the preventive check” — sexual restraint, or delaying

²⁴Thomas Robert Malthus, *An Essay on the Principle of Population, as it Affects the Future Improvement of Society with Remarks on the Speculations of Mr. Godwin, M. Condorcet, and Other Writers* (London: J. Johnson, 1798), URL: <http://www.esp.org/books/malthus/population/malthus.pdf>, 4.

²⁵Ibid., 4.

²⁶Robertson, see n. 12, 5.

²⁷Thomas Robert Malthus, *An Essay on the Principle of Population* (Library of Economics and Liberty, 1826), URL: <http://www.econlib.org/library/Malthus/malPlong.html>, I.I.7.

marriage until the resulting offspring could be supported.²⁸ Second were “positive checks,” a category that included “every cause, whether arising from vice or misery, which in any degree contributes to shorten the natural duration of human life.” He listed as examples of these causes “all unwholesome occupations, severe labour and exposure to the diseases and epidemics, wars, plague, and famine.”²⁹

Because he attributed all forms of misery and all causes of mortality (other than old age) to population pressure, he interpreted all woes and calamities as evidence of population pressure. Similarly, he attributed to every social institution — such as political organizations, labor practices, and marriage customs — the motive of managing the balance between population and resources. Malthus viewed the existence of these institutions as both responses to population pressure and evidence of it. The constant pressure of population on resources was neither a result of Malthus’s analysis nor a prediction. Rather, it was his foundational assumption.

For Malthus, poverty was the result of unrestrained sexuality. The only preventive check he offered was the delay of marriage, and he interpreted non-procreative sexuality — including the use of contraception within marriage — as a form of “vice” caused by the pressure of population on resources. Malthus thereby attributed all forms of human suffering to excessive sexuality, naturalizing poverty and misery and blaming the poor for their own plight.

Although Malthus is widely regarded as a scholar of population, the main purpose of his work was not to understand, predict, or control population growth, but rather to justify the existing social order by naturalizing poverty. By the sixth edition of his *Essay*, published in 1826, Malthus had developed a strong argument against poor relief, contending that assistance to the poor would lead only to an increase in their numbers, and would spread their misery further across the social spectrum by redistributing resources from those he deemed worthy to those he deemed unworthy.³⁰ Malthus’s argument carried substantial weight in

²⁸Malthus, *An Essay on the Principle of Population, as it Affects the Future Improvement of Society with Remarks on the Speculations of Mr. Godwin, M. Condorcet, and Other Writers*, see n. 24, 20.

²⁹Malthus, *An Essay on the Principle of Population*, see n. 27, I.II.9.

³⁰Malthus, *An Essay on the Principle of Population*, see n. 27, III.V.1, III.V.6; also see Michael Eagan,

England. His law of population became the intellectual basis for the New Poor Law of 1834, which eliminated all outdoor relief, forcing the poor to either accept low-paying factory work or enter workhouses. By helping to create the labor force necessary for the Industrial Revolution, the New Poor Law participated in the formation of what Marx has termed “a disposable industrial reserve army, that belongs to capital quite as absolutely as if the latter had bred it at its own cost.”³¹

Present-day scholars usually assume that Malthus’s premise regarding the disparity between population growth and food production was accurate and widely accepted.³² However, some political economists, notably Karl Marx and Friedrich Engels, questioned Malthus’s theory and critiqued his conclusions, and their nineteenth-century criticism would reverberate into the twentieth century.³³ Marx and Engels attributed poverty and hunger not to an inevitable imbalance between population and food supply, but to the capitalist mode of production, in which “the laboring population therefore produces, along with the accumulation of capital produced by it, the means by which itself is made relatively superfluous, is turned into a relative surplus population.”³⁴ They rejected the idea that human population growth could be governed by natural laws, arguing that “an abstract law of population exists for plants and animals only, and only insofar as man has not interfered with them.”³⁵ If there were laws of human population, they contended, those laws were specific to the historic modes of production; Malthus’s laws, if valid, held only for the capitalist mode. Marx and Engels argued that Malthus had devised his principle of population to explain and naturalize the coexistence of extreme wealth and extreme poverty under capitalism, and described his

“Barry Commoner and the Science of Survival” (Ph.D. diss., Washington State University, 2004), 186.

³¹Karl Marx, “Capital, Volume One,” in *The Marx-Engels Reader*, ed. Robert C. Tucker, Second edition (New York: Norton, 1978), 423. Demographers readily acknowledge that the Industrial Revolution led to a large increase in England’s population as a result of rising living standards and a concomitant fall in mortality. It is, however, less commonly acknowledged that the population thought of Malthus helped to provide the Industrial Revolution’s workforce by justifying the elimination of poor relief.

³²See, for example: Robertson, see n. 12; Hoff, see n. 11.

³³Chapter Seven will discuss the resistance of communist countries to the discourse of impending global overpopulation in the second half of the twentieth century.

³⁴Ronald L. Meek, ed., *Marx and Engels on the Population Bomb* (Berkeley: Ramparts, 1971), 94.

³⁵*Ibid.*, 94.

principle as “even more nonsensical” than the phenomenon it explained.³⁶ Marx and Engels thereby refused Malthus’s naturalization of poverty, arguing that poverty resulted from — and was intrinsic to — the capitalist system of production, rather than the unrestrained “passion between the sexes,” as Malthus had claimed.³⁷

Marx and Engels were not the only nineteenth-century critics of Malthus’s population principle. Although many economists and policy makers in Western Europe and North America accepted his view of population as a cause of poverty at the family level — attributing it to lack of sexual self-control — they still viewed aggregate population growth as a sign of strength, wealth, and power at the national level. The U.S. government, for example, promoted white population growth throughout the nineteenth century, largely through free immigration and land grants, as a means of expanding political power westward across the continent.³⁸ French thinkers blamed their country’s defeat in the Franco-Prussian War on falling birthrates, and this disaster touched off a series of debates about nationalism and women’s roles in and reproductive duties to family, economy, and nation.³⁹ Similar concerns surfaced in the U.K. surrounding the South African (Boer) War in the first decade of the twentieth century, with falling birthrates among the middle classes and growing evidence of ill health among the working classes sparking fears that the U.K. population might be losing the size and strength it needed to maintain its empire.⁴⁰

Although policy makers in the U.S., the U.K., and France continued to value aggregate population growth, Malthus’s principle of population was nonetheless highly productive in the intellectual realm. In addition to providing support for the passage of the New Poor Law, it inspired the theory of natural selection as the mechanism of evolution, formulated independently by Alfred Russel Wallace and Charles Darwin and described in Darwin’s *The*

³⁶Meek, see n. 34, 57.

³⁷Malthus, *An Essay on the Principle of Population, as it Affects the Future Improvement of Society with Remarks on the Speculations of Mr. Godwin, M. Condorcet, and Other Writers*, see n. 24, 4.

³⁸Hoff, see n. 11.

³⁹Cole, see n. 39.

⁴⁰Emily R. Klancher, “Imperial Women: British Women as the Borders of the ‘Imperial Race’ in Britain and South Africa, 1899-1910” (B.A. thesis, Pomona College, 2001).

Origin of Species (1859).⁴¹ According to the theory of natural selection, evolution occurred when random mutations made certain members of populations better able to compete for limited resources, and therefore able to reproduce more prolifically, than those who lacked the mutation. This theory depended on the assumption that constant population pressure placed individuals with different genetic traits into competition with one another for survival and reproductive success. Natural selection provided additional credibility to Malthus's population principle by building on its foundation.⁴²

Social thinkers in the second half of the nineteenth century, most notably Herbert Spencer, read the biological principles of evolution and natural selection back into the social realm to naturalize poverty and blame the poor for their own plight, as Malthus had done by attributing poverty and misery to population growth and resource scarcity. Supporters of this theory, known as “social Darwinism” variously and contradictorily interpreted evolution to suggest on the one hand that “inferior” populations — whether defined racially, nationally, or socioeconomically — would die out as a result of contact and competition with “superior” populations — invariably defined as white, Western or Northern European, and affluent — and on the other hand that “inferior” populations would outbreed “superior” populations as a result of higher birth rates, endangering the survival of the “superior” populations.⁴³ Malthusianism and social Darwinism were conservative ideologies in the sense that they sought to naturalize, justify, and thereby preserve the existing social order. By introducing his law of population, Malthus aimed not to eliminate or to alleviate poverty, but rather the opposite: to naturalize poverty and justify the repeal of poor relief. Social Darwinists similarly argued against poor relief by explaining poverty as the result of genetic

⁴¹Robertson, see n. 12, 5.

⁴²Latour describes how citations in a “positive modality” can move statements closer to being generally accepted as fact. Latour, *Science in Action: How to Follow Scientists and Engineers Through Society*, see n. 15, 22-23.

⁴³U.S. economist Warren Thompson, for example, argued both positions, declaring that African-Americans were committing “race suicide” as a result of their low fertility and cautioning that immigrant populations would edge out the native-born as a result of their high fertility and low living standards. Warren S. Thompson, “Population Facts for the United States and their Interpretation,” *Journal of the American Statistical Association* 18, no. 141 (Mar. 1923): 575–587; Warren S. Thompson, “Standards of Living as They Affect the Growth of Competing Population Groups,” *The Scientific Monthly*, July 1923, 57–65.

inferiority, a problem that would solve itself through evolution.

1.1.3 The Progressive Turn: Neo-Malthusianism and Eugenics

Toward the end of the nineteenth century, social reformers on both sides of the Atlantic recognized that unfettered capitalism, coupled with the industrialization and urbanization to which it gave rise, had begun to engender extreme socioeconomic disparities, resulting in both dire poverty and labor organization, both of which threatened the capitalist order. In the decades around the turn of the twentieth century, these reformers — now known as “Progressives” — began to propose mechanisms that would stabilize society and maintain economic growth while preventing workers from slipping into abject poverty.⁴⁴ Many of these proposals involved systems of insurance and public support for meeting workers’ basic social needs. Two Progressive Era projects focused explicitly on the management of reproduction as a means of alleviating the social problems caused by poverty: neo-Malthusianism and eugenics.

Though the phrase neo-Malthusianism was repurposed in the second half of the twentieth century to refer to concerns about impending overpopulation that pointed to family planning as a solution (discussed in Chapters Four and Five), it originated in the late nineteenth century to denote the movement among the professional Western European middle classes to legalize birth control, both for their own use and to promote among the poor. Like Malthus, neo-Malthusians attributed poverty to a conflict between population and resources, particularly at the family level. Unlike Malthus, however, who had classified contraception as a form of “vice,” neo-Malthusians viewed the legalization and diffusion of contraception as a solution to poverty. They reasoned that working-class couples should have access to information about contraception because, without it, their wages would not be able to keep up with the growth of their families.⁴⁵ Neo-Malthusians sought to prevent extreme poverty

⁴⁴Rodgers, see n. 64.

⁴⁵C.V. Drysdale, “The Malthusian Doctrine To-Day,” *Birth Control Review* 2, no. 2 (1918): 15.

among workers by giving them the means to limit the size of their families.

In the United States, the 1873 Comstock Act, which prohibited sending contraceptive devices or information through the mail, and state-level versions of the law that further restricted the distribution of contraceptive knowledge and materials, had essentially outlawed birth control. Some states also explicitly prohibited the use of contraception. Several European countries enacted similar prohibitions in the late nineteenth century, either specifically against birth control or against “obscenity” more broadly, which included contraceptive information. The first neo-Malthusian organization appeared in Great Britain in 1877 in response to the trial of Annie Besant and Charles Bradlaugh, who had been prosecuted for reprinting the contraceptive manual *Fruits of Philosophy*, first published in 1832 by American physician Charles Knowlton. Neo-Malthusian organizations soon followed in the Netherlands, France, and Germany, and the first international neo-Malthusian conference was held in Paris in 1900. Neo-Malthusianism came later to the United States, where Margaret Sanger, the most prominent birth control advocate, had initially promoted contraception as a feminist and socialist issue. While in exile in Great Britain after her 1914 arrest, however, Sanger became acquainted with the British neo-Malthusians and aligned her movement with theirs.⁴⁶ By 1918, there were neo-Malthusian societies in Algeria, Austria, Belgium (both French and Flemish), Brazil, Cuba, Italy, Portugal, Spain, Sweden, and Switzerland, in addition to the countries mentioned above, all organized under the Federation of Neo-Malthusian Leagues.⁴⁷

Although many neo-Malthusians also supported the principles of eugenics, the two movements were not in complete alignment. Coined in 1883 by Charles Darwin’s younger cousin Francis Galton, the word “eugenics” — literally “good breeding” — denoted the view that evolutionary change was progressive rather than random, and that the process in humans could be accelerated by selectively breeding genetically superior individuals while restricting the reproduction of those deemed inferior.⁴⁸ Eugenicists shared the social Darwinist belief

⁴⁶Dennis Hodgson and Susan Cotts Watkins, “Feminists and Neo-Malthusians: Past and Present Alliances,” *Population and Development Review* 23, no. 3 (1997): 469–523.

⁴⁷Organizations are listed at the beginning of each issue of *The Birth Control Review*.

⁴⁸Galton introduced the idea much earlier, in an 1865 series of articles in *MacMillan’s Magazine* that

that socioeconomic status was an indicator of inherent genetic quality, but differed in asserting that the social order could be improved by increasing the proportion of each successive generation drawn from the middle and upper classes (positive eugenics), reducing the proportion drawn from the working classes and poor (negative eugenics), and preventing altogether the reproduction of those thought to have hereditary defects (also negative eugenics).⁴⁹ By the turn of the twentieth century, it had become clear in North America and Western Europe that wealthier couples were having fewer children than poorer couples, and eugenicists sought to reverse this trend, as will be discussed in greater length in Chapter Two.

Francis Galton founded the Eugenics Record Office at University College London in 1904. In 1907, the Office became the Galton Eugenics Laboratory, and Galton's protégé Karl Pearson became director of the laboratory and the first holder of a chair in National Eugenics endowed by Galton. In the United States, Charles Davenport and Harry Laughlin established a Eugenics Record Office in 1910 at Cold Spring Harbor, New York, with funding from railroad heiress Mary Harriman, the Rockefeller Foundation, and the Carnegie Institution of Washington.

Although eugenicists in the U.K. and the U.S. had similar goals — improvement in the genetic quality of human populations — their understandings of genetic inheritance and the methods they used to research inheritance differed. Eugenicists in the U.S. had accepted Mendelian genetics as the basis of human inheritance, and accordingly conceptualized all human characteristics and personality traits — from wanderlust to train-wrecking — as inherited according to autosomal dominant and autosomal recessive patterns. Eugenicists in the U.K. did not work within the Mendelian paradigm. Instead, they premised their research on the theory of ancestral inheritance, which holds that like breeds like, so the traits of

was published in 1869 as *Hereditary Genius*. His theory was based on the observation that, in England, prominence tended to run in families. The conclusions he drew from that observation conflated prominence with ability and elided the passing of social privilege from parent to child. Kevles, see n. 60, 3.

⁴⁹Throughout this dissertation, I will refer to genetic “improvement” and the genetic “superiority” and “inferiority” without scare quotes, as the historical actors used these phrases. However, there has never been consensus about what makes a person genetically “superior” or “inferior” or what genetic “improvement” would entail or how it would be measured. Moreover the inheritance of personality traits and characteristics, including intelligence, in humans, remains a scientific mystery.

children are the combined traits of their parents. To give a hypothetical example, ancestral inheritance predicts that the child of a parent with blue eyes and a parent with red eyes will have purple eyes, while Mendelian inheritance predicts that the child will have either blue eyes or red eyes, depending on the alleles inherited from each parent and on whether the red or blue allele is dominant. This is a trivial example, but to generalize, eugenicists in the U.S. understood human difference in categorical terms — a person was either “a trainwrecker” or not — while eugenicists in the U.K. understood human difference in continuous terms — a person with one trainwrecking parent might have some tendency toward trainwrecking. Moreover eugenicists in the U.K. believed that the traits of the child could be determined fairly well in advance from knowledge of the parents, while U.S.-based eugenicists worried that children could express genes that were not expressed in the parents and could therefore turn up with traits or “deficiencies” that could not be predicted simply from knowledge of the parents. U.K. eugenicists therefore developed modes of continuous-variable analysis that would be later codified as mathematical statistics — including regression and correlation — while U.S. eugenicists created ancestry charts that linked a person with a given trait to other family members with the same trait.⁵⁰

Eugenics was a political movement as well as a science, and enjoyed widespread public support in both countries, particularly among middle-class professionals, and above all among scientists and physicians. Eugenics had more left-wing support in Great Britain, including that of the Fabian socialists, but was also consonant with Progressive Era ideas of social engineering in the United States. The most prominent early-20th century advocate of eugenics in the U.S. was President Theodore Roosevelt, who warned in the early twentieth century against the danger of “race suicide,” which he defined as the qualitative decline of the American people as a result of the disproportionate use of birth control among native-born middle-class white couples. As a solution, Roosevelt advocated a positive eugenic program “intended to increase the number of Americans with approved bloodlines by promoting larger

⁵⁰MacKenzie, see n. 53; Kevles, see n. 60.

families among the ‘good stock’ of the nation.”⁵¹ Roosevelt’s anxiety, shared by economist Francis Amasa Walker, who directed the 1870 and 1880 U.S. Censuses, focused on the new wave of immigration from Southern and Eastern Europe, and the fear that these undesirable newcomers and their progeny would become a substantial proportion of the white U.S. population as a result of their relatively higher birth rates. This eugenic vision focused on white Americans and white immigrants, implicitly excluding African Americans, Native Americans, and all other nonwhite Americans and nonwhite immigrants from its national imaginary. Eugenicists in both Britain and the U.S. sought to improve the “quality” of the white race through selective breeding in order to maintain white supremacy at both national and international levels. Support for eugenics was not limited to the U.S. and the U.K., however. By the interwar period, eugenics movements had taken hold in many countries of Western Europe, Asia, and Latin America, including Brazil, China, Cuba, France, Italy, Japan, Mexico, and Sweden, and their leaders met regularly at international eugenics conferences.⁵²

Like neo-Malthusians, eugenicists sought to effect socioeconomic amelioration by reducing the number of poor people rather than through redistribution of wealth. However, neo-Malthusians saw resources as fixed and sought to limit the number of people among whom they were distributed, whereas eugenicists saw members of the elite as genetically superior and sought to increase their proportion within the population, regardless of the actual supply of resources available to them. Moreover, while neo-Malthusians viewed birth control as a remedy for poverty, eugenicists saw their program not as ameliorating existing poverty but as reducing its spread to future generations. Initially, eugenicists such as Roosevelt opposed the legalization of birth control, as it was much more popular among the middle and upper classes — who they hoped would have larger families — than it was among the working classes — who they hoped would have smaller families. In the United States, eugenicists favored sterilization of the supposedly unfit, and worked to have legislation passed in a

⁵¹Jean H. Baker, *Margaret Sanger: A Life of Passion* (New York: Hill and Wang, 2011), 140-141.

⁵²Connelly, see n. 8, 79.

number of states that provided for the compulsory sterilization of those deemed “socially inadequate,” a category that could include the nonwhite, the mentally ill, the disabled, the addicted, and the promiscuous.⁵³ By 1920, 15 states had sterilization laws; by 1937, compulsory sterilization had spread to 32 states.⁵⁴

Neo-Malthusianism and eugenics were political projects that called on two dimensions of population — quantity and quality — for their legitimacy. Birth control activists appropriated Malthus’s name to present their program as the solution to a problem — the rapid growth of population that outpaced the increase of wages and other resources — that required the control of population quantity. Eugenicists presented their program as a way to increase the “quality” of populations, wrapping their political agenda in the language of biometrics (the application of statistics to human heredity) in Britain and genetics in the United States. By promoting these programs as solutions, their supporters called into being and reified two population “problems” — that of quantity and that of quality. In the U.S., supporters of another political movement — immigration restriction — also attached their program to the concept of population, presenting immigration restriction as a way to both control population quantity and improve population quality. The following section examines how these political programs influenced the development of measures of population and population change between the wars.

1.2 Population Problems and Population Projections: Competing Theories and Politics

After the First World War, a nexus emerged in the United States between neo-Malthusians, eugenicists, and immigration restrictionists. As Margaret Sanger sought scientific and medical legitimacy for birth control, she formed alliances with scientists and doctors who supported eugenics and immigration restriction. One of these scientists was Raymond Pearl, a

⁵³Stern, see n. 60.

⁵⁴Baker, see n. 51, 144.

biologist at Johns Hopkins University who claimed human population growth as part of the territory of the field of biology. Yet scientists in other fields — notably statistics, economics, and sociology — had also begun to analyze population growth, and challenged the authority of Pearl, and biology more generally, to predict population growth. This section examines the methods developed by biologists, statisticians, economists and sociologists to evaluate population change and predict future population growth, and the ways in which analyses using those methods intervened in debates about birth control, immigration, and eugenics. I argue that these methods reflected the political sympathies of their developers, and that each had embedded within it assumptions about what populations are and how they change.

1.2.1 Margaret Sanger and the Neo-Malthusians: Overpopulation and the Logistic Law of Population Growth

As stated above, Margaret Sanger aligned her movement for legalization of birth control in the United States with the European neo-Malthusian movement during her 1914-1916 exile in London. An obstetric nurse working in New York City in the first decades of the twentieth century, Sanger had initially promoted the legalization of birth control as part of a feminist and socialist program, with the aim of improving the autonomy, sexual satisfaction, and living standards of poor women and families. She pointed out that the illegality of contraception didn't prevent it from being used, but did keep it out of the hands of poor women, who could not afford to visit the private doctors who could provide them with birth control information and devices. Sanger wrote sex education articles for the socialist daily *The New York Call*, and in 1914 started publishing her own magazine, *The Woman Rebel*, in which she advocated that American workers adopt birth control as a means of resisting capitalist domination by refusing to reproduce capital's surplus army of labor.⁵⁵ Sanger also described birth control as the basis for women's complete social emancipation and sexual autonomy.⁵⁶

⁵⁵Baker, see n. 51, 78.

⁵⁶Ibid., 83.

Later that year, Sanger was arrested and charged with four counts of violating the Comstock laws for mailing *The Woman Rebel*. She fled to London before her trial. While there, Sanger studied population statistics in the reading room of the British Museum, while waiting tables to support herself. She befriended members of the overlapping networks of Fabian socialists, eugenicists, and neo-Malthusians, including H.G. Wells, Marie Stopes, and Havelock Ellis, and began to incorporate their ideas into her arguments for birth control legalization. In 1915, Sanger traveled to the Netherlands, the country with the most relaxed contraceptive laws in Europe, where she visited the women's health clinics that would become the model for the clinics she set up on her return to New York in 1916.⁵⁷

Sanger's first clinic, located in Brooklyn, provided information only, telling clients where they could obtain pessaries (similar to cervical caps), spermicides, and condoms, and how to use them. The police soon raided the clinic and shut it down, arresting Sanger and her staff. In a negotiated settlement, Sanger pled guilty to obscenity charges and served a month at the Queens County Penitentiary.⁵⁸ After her release, she appealed her conviction on the grounds that the illegality of birth control unconstitutionally forced motherhood on American women. The judge who heard her case denied her appeal, ruling that women were not forced into motherhood, interpreting the New York Penal Code to imply that physicians could be exempted from the state's Comstock Laws if contraception was necessary for a woman's health. Although this decision did not overturn Sanger's conviction, it did legalize birth control if prescribed by a physician, laying the foundation for Sanger's subsequent alliance with doctors and scientists.⁵⁹

As a result of their eugenicist convictions, however, many doctors and scientists were initially hostile to birth control, which they saw as disproportionately reducing the size of the families that, according to eugenicist doctrine, should be the largest.⁶⁰ In 1917, Sanger began to publish a new journal, *The Birth Control Review*, in which she increasingly aligned

⁵⁷Baker, see n. 51, 97-98.

⁵⁸Ibid., 122-123.

⁵⁹Ibid., 156.

⁶⁰Hodgson and Watkins, see n. 46.

birth control with the eugenics movement. She even printed a critique of birth control by eugenicist luminary Paul Popenoe, who blamed contraception for the differential “increase of less capable persons,”⁶¹ so that she could refute his claim that birth control was an enemy of positive eugenics (the promotion of births among the genetically “superior”) and instead present it as a vehicle for negative eugenics (the restriction of births among the genetically “inferior”), one more democratic and easier to implement than sterilization. In 1919, Sanger published the book *Woman and the New Race*, in which she presented birth control as the solution to “‘the glut of inferior children who now threatened society’ imposed by the church and the state, conspiring to keep women powerless and sexually ignorant.”⁶² Even in her eugenicist writings, Sanger’s concern for women’s social and sexual liberation was apparent.

Though Sanger, like most of her contemporaries, genuinely subscribed to some elements of the negative eugenic program, she had long been an advocate for the poor, and her courting of eugenics and eugenicists was likely a highly calculated move along the lines of Michel Callon’s concept of *interressement*. Callon describes *interressement* as the process by which actor A gains the support of actor B for A’s project by making the success of A’s project indispensable to the realization of B’s own goals. Through this process, A’s project becomes an “obligatory passage point” for B’s project.⁶³ Eugenics at that time had much more widespread support and scientific legitimacy than did birth control, and by attaching birth control to eugenics — indeed, by making it a tool of eugenics or even an obligatory passage point for eugenics — Sanger legitimized her cause and gained powerful allies. As her biographer Jean Baker has argued, “in an effort to gain support, she signed on to negative eugenics, expecting that its proponents would reciprocate and urge birth control as a solution.”⁶⁴ This connection between reproductive rights, eugenics, and other movements

⁶¹Paul Popenoe in *The Birth Control Review*, quoted in Baker, see n. 51, 145.

⁶²*Ibid.*, 161.

⁶³For more on *interressement* see: Callon, see n. 15; Susan Leigh Star and James R. Griesemer, “Institutional Ecology, ‘Translations’ and Boundary Objects: Amateurs and Professionals in Berkeley’s Museum of Vertebrate Zoology, 1907-39,” *Social Studies of Science* 19, no. 3 (1989): 387–420.

⁶⁴Baker, see n. 51, 147; Jonathan Eig makes a similar argument in Jonathan Eig, *The Birth of the Pill: How Four Crusaders Reinvented Sex and Launched a Revolution* (New York: Norton, 2014).

to control population quality or quantity would continue throughout the century, as I will describe in later chapters.

Sanger never embraced the positive eugenics program, and for that reason, her overtures were rejected by the most prominent American eugenicists of the moment, Charles Davenport and Paul Popenoe. She did, however, forge alliances with eugenicist scientists who were also neo-Malthusians and whose population concerns had broadened during World War I from poor families to white humanity in general. Many participants and observers, including the leaders of the belligerent nations, located the war's origins in population growth in Germany and Russia, and the territorial aggression stimulated by that growth.⁶⁵ World War I aroused multiple and contradictory population fears, demonstrating that population could be a source of both strength and vulnerability for states: experts attributed Germany's power and aggression to its rapid growth and France's easy defeat to its low birth rate; at the same time, larger populations required more resources and more intensive management of them, particularly in times of war. During World War I, neo-Malthusians began to discuss birth control legalization not only as a way to alleviate individual poverty, but also as a way to avert what some experts began to see as the looming Malthusian threat of population growth outpacing food supply.

World War I indicated that success in twentieth-century warfare would require governments to maintain adequate food supplies for both military and civilian populations. In response to this challenge, the U.S. government established the U.S. Food Administration under the direction of engineer and future U.S. President Herbert Hoover to ensure continuous food supplies to the Allied powers.⁶⁶ At least one member of the Food Administration, Harvard plant geneticist Edward East, read Malthus's *Essay* during the war, and became a committed neo-Malthusian, combining support for birth control with support for immi-

⁶⁵Baker, see n. 51, 128.

⁶⁶For the role of civilian hunger in Germany's World War I defeat, see Belinda Davis, *Home Fires Burning: Food, Politics, and Everyday Life in World War I Berlin* (Chapel Hill: University of North Carolina Press, 2000); for more on the increased wartime powers of the U.S. government, see Christopher Capozzola, *Uncle Sam Wants You: World War I and the Making of the Modern American Citizen* (New York: Oxford University Press, 2008).

gration restriction and negative eugenics.⁶⁷ In 1921, Sanger recruited East and his fellow neo-Malthusian and former Food Administration colleague Raymond Pearl, a biologist at Johns Hopkins University, to her first scientific conference on birth control and to the board of her American Birth Control League, which was dedicated to contraceptive research, development, distribution, and legalization, through association with science and control by the medical profession.⁶⁸

Born in 1879, East's early work at agricultural extension stations in Illinois and Connecticut had focused on corn genetics, laying the foundation for the hybrid corn that would dramatically increase crop yields after 1940.⁶⁹ In 1909 he was hired as a faculty member at Harvard's Busey Institution, where he mainly studied tobacco breeding, though some of his work was foundational to the emerging science of human genetics, and some of his students became leading members of that field.⁷⁰ As a plant geneticist, East's research did not deal directly with human populations. However, he was concerned enough about the potential of population growth to reach the limit of the Earth's food resources that, in 1923, he published the popular text *Mankind at the Crossroads*, warning of just this possibility. He began by calculating the Earth's carrying capacity, assuming that "a reasonable maximum for the world's future population is one person for each 2.5 acres on 40 per cent of the land area of the globe." He then reasoned that, if current crude rates of population growth remained constant, the Earth would reach its maximum population of 5.2 billion in just over a century.⁷¹

East warned that, at its maximum population size, the world would not be a pleasant place to live, but he offered an alternative to the dire future he predicted: "the remedy proposed is to promote birth control at the lower end of the social scale."⁷² This state-

⁶⁷Donald F. Jones, "Biographical Memoir of Edward Murray East, 1879-1938," *National Academy of Sciences of the United States of America Biographical Memoirs* 23 (1944): 229.

⁶⁸Robertson identifies Pearl and East as pioneers of "a robust kind of environmental Malthusianism that would grow in importance in the wake of World War II." Robertson, see n. 12, 6.

⁶⁹Jones, see n. 67, 222.

⁷⁰Ibid., 227-229.

⁷¹Edward M. East, *Mankind at the Crossroads* (New York: Scribner, 1923).

⁷²Ibid., 303.

ment clearly indicates a eugenic concern, as population limitation could have been produced through the promotion of birth control at any point on the social scale. His eugenic anxieties are also apparent in his stance on immigration. Although East himself was a plant geneticist, actively engaged in breeding higher-yielding food crops, he argued that, within the U.S., “the most helpful means available to-day for aiding agriculture is an indirect one — a severe permanent restriction on immigration. Any present cry for immigration can only be made by the fool, the hypocrite, or the ignorant.”⁷³ While immigration restriction may have held the promise of slowing U.S. population growth, it would certainly not have affected world population growth, and the amount of space East devoted to eugenics and immigration restriction in his book suggests that these were his main concerns and the Malthusian limits to growth a convenient justification for the programs he promoted. Like Roosevelt before him, East advocated for eugenic control of the white population of the U.S., as his brand of racism assured him that white population growth would displace nonwhite populations and ultimately lead to their extinction.

East’s statement that, if its current growth rate continued, world population would reach 5.2 billion around the year 2023 was not a population projection. He was not predicting a future population of 5.2 billion, but rather arguing for policies — a eugenic program that combined birth control and immigration restriction — that would prevent world population from reaching this seemingly-absurdly high number. Although his numbers were based on actual data and documented rates of natural increase, they represented a demodystopian vision of a future in which population growth caused widespread suffering rather than East’s actual expectation of future population growth.⁷⁴ His intention was not that readers should expect a world population of 5.2 billion around the year 2023, but rather that they should act to prevent it. Sanger praised East’s book as “one of the finest contributions given to the literature on the age,” but Pearl critiqued it as propagandistic, complaining that it included

⁷³East, see n. 71, 191.

⁷⁴For more on demodystopianism, see Andreu Domingo, “‘Demodystopias’: Prospects of Demographic Hell,” *Population and Development Review* 34, no. 4 (2009): 725–745.

“too much preaching and too much over-elaboration.”⁷⁵

Pearl shared East’s neo-Malthusian and eugenicist views, but took a different epistemological approach to the question of population growth and, beginning in 1927, became a critic of the eugenics program’s scientific validity. Born in the same year as East, Pearl was an animal geneticist who completed his Ph.D. in zoology at the University of Michigan in 1902. In 1905, he went to London to study biometrics with Karl Pearson at the Francis Galton Eugenics Laboratory. Pearson and Pearl developed considerable rapport, with Pearson describing his protégé as “the most original and powerful of the younger Americans who have taken up biometric work,”⁷⁶ and appointing him to the editorial board of his journal *Biometrika*.

When Pearl returned to the United States, he put his eugenic training to use at the Maine Agricultural Experiment Station, attempting to breed hens that would lay more eggs. Following the principle of ancestral inheritance embedded in the British biometric version of eugenics, Pearl selectively bred good layers — with the expectation that their offspring would also be good layers — but soon concluded that this approach was ineffective. Rather, he found that in order to increase egg production, he had to selectively breed the *parents* of good layers. This result offered support for Mendelian genetics rather than ancestral inheritance as the mechanism of heredity. Pearl himself was surprised at his finding. As he admitted, he had “approached the subject with a bias in the other direction so far as there was any bias at all.”⁷⁷ In 1910, when Pearl informed Pearson of his findings, and of the challenge that they presented to the principle of ancestral inheritance, Pearson dropped Pearl from *Biometrika*’s editorial board.⁷⁸ Over the next two decades, Pearl would elaborate this finding into a critique of the scientific claims of the eugenics movement, which will be discussed at greater length in Chapter Two.

⁷⁵Margaret Sanger to Raymond Pearl, Nov. 7, 1923, Raymond Pearl Papers, American Philosophical Society, Philadelphia, PA, “Margaret Sanger #2,” box 24; Raymond Pearl to Edward M. East, Nov. 2, 1923, “E.M. East #4,” box 7.

⁷⁶Karl Pearson to Carnegie Institution, Oct. 28, 1909, “Karl Pearson UCL Copies #3,” box 22.

⁷⁷Raymond Pearl to Karl Pearson, Jan. 27, 1909, “Karl Pearson UCL Copies #3,” box 22.

⁷⁸Raymond Pearl to Karl Pearson, 1910, “Karl Pearson UCL Copies #3,” box 22.

In contrast to East, whose writings on human population were more political than scientific, Pearl argued that biologists should be responsible for studying human population growth. He contended that human populations are appropriate topics of analysis for biologists because human populations grow according to natural laws, resemble organisms in their growth and other properties, and can be studied through analogy to non-human populations. In 1920, he and his junior colleague Lowell Reed published an article in the *Proceedings of the National Academy of Sciences* in which they proposed a mathematical law of population growth and derived from it a method of predicting population size at any future date. At that point, there were no scientific theories governing the growth rates of human populations. East had assumed that, in the absence of intervention, population would continue to grow at its present rate, simply because he had no basis for assuming a different rate of growth. It was clear that population growth was not constant — censuses in North America and Western Europe demonstrated vastly different rates of growth in different places and in different intercensal periods — but there were no agreed-upon explanations for what factors governed the growth of human population.

As biologists, Pearl and Reed began with the Malthusian premises that populations are always constrained by the limits of subsistence and that subsistence is the only force limiting population growth. Pearl and Reed suggested that, governed by these natural limits, human population must grow along a regular trajectory that could be described by a mathematical equation, similar to the trajectories of heavenly bodies discovered by astronomers. They also took an organic view of population, conceptualizing it as an object of analysis with emergent properties — properties that apply only to the population as a whole and can't be reduced to the properties of its individual members, as is the case with an organism, which has an existence beyond simply a collection of cells. On the basis of this analogy, Pearl and Reed contended that the trajectory of population growth was none other than the S-shaped curve of autocatalysis — a chemical reaction in which the reaction product is also the catalyst for the reaction — which had already been identified by biologist T. Brailsford Robertson as

the growth pattern of individual organisms.⁷⁹

Pearl and Reed were not the first to suggest that human population growth followed an S-shaped trajectory. As early as 1838, Pierre-François Verhulst, a student of renowned Belgian astronomer-statistician Adolphe Quetelet, had considered and rejected a similar curve to describe population growth, naming this curve the “logistique.” Although Pearl and Reed developed their “autocatalytic” theory of population growth independently, by 1927 Pearl had become familiar with Verhulst’s work and had begun to refer to his own equation for population growth as the “logistic” curve. For Pearl and Reed, the logistic was not just a law of population growth, but also a method of population projection: they contended that the size of a given population at any point in time could be calculated by fitting the known growth of the population in question to the general equation for a logistic curve, given in Equation (1.1).

$$y = \frac{b}{e^{-ax} + c} \quad (1.1)$$

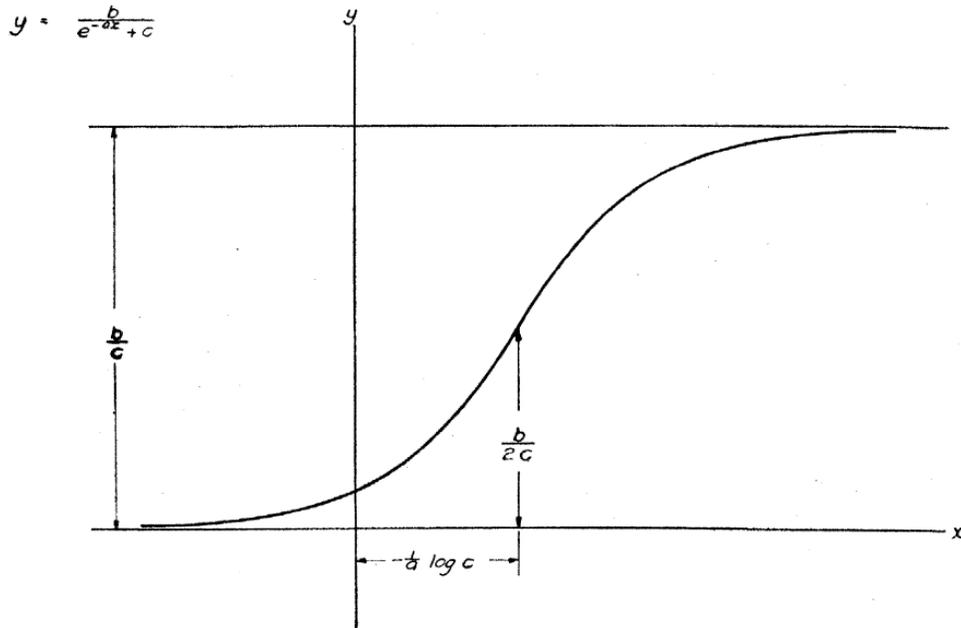
The curve described by Equation (1.1) and illustrated in Figure 1.1 is shaped like the letter *S* and represents what Pearl and Reed called a “complete cycle of population growth.”⁸⁰ The *x*-axis represents time and the *y*-axis represents population size at any given time. The lower asymptote represents the starting population — the population size at the beginning of the growth cycle — and the upper asymptote ($\frac{b}{c}$) represents the saturation population. The letter *a* is a constant to be fitted empirically, as are *b* and *c*. With population data from three different points in time, an analyst can solve for the three unknown constants (*a*, *b*, and *c*), thereby determining — in theory, at least — the size of the population in question at any point in the past or future.

According to this projection method, the saturation population is not given in advance, nor is it calculated with any reference to the territory itself; rather it is determined by past

⁷⁹Raymond Pearl and Lowell J. Reed, “On the Rate of Growth of the Population of the United States since 1790 and its Mathematical Representation,” *Proceedings of the National Academy of Sciences of the United States of America* 6, no. 6 (June 15, 1920): 280; Pearl had earlier been a harsh critic of Robertson’s theory that the growth of organisms followed the curve of autocatalysis. Kingsland, see n. 83.

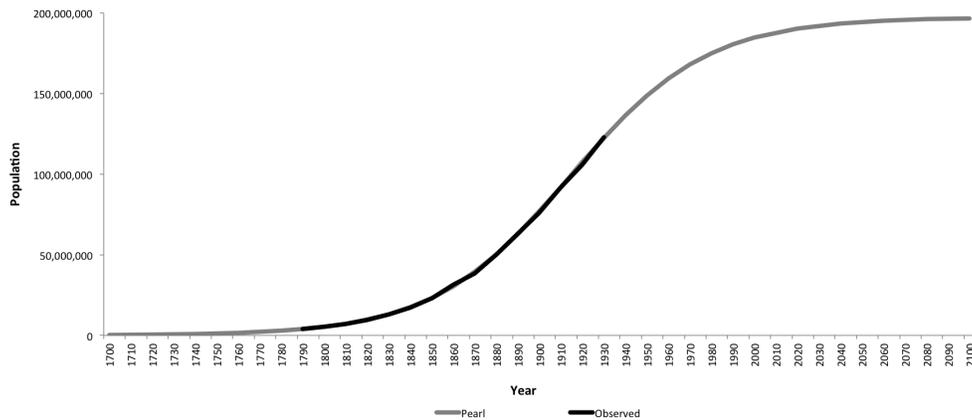
⁸⁰Pearl and Reed, see n. 79, 282.

Figure 1.1: Pearl's Logistic Curve



population growth through the curve-fitting process. With this equation, Pearl argued, “it is now possible to forecast with a reasonable degree of accuracy not only what the maximum population for any given area will be, but *when* it will be, and also when will be the period of most rapid growth.”⁸¹ Pearl and Reed attributed the logistic law to Malthus, describing it as a mathematical formalization of Malthus’s population principle.

Figure 1.2: Observed and Projected U.S. Population, 1700-2100



In their 1920 article, Pearl and Reed fit a logistic curve to the U.S. population as an

⁸¹Raymond Pearl, “Forecasting the Growth of Nations,” *Harper’s Monthly Magazine*, 1921: 704.

example, discovering a saturation population of 197 million in the year 2100. This projection is illustrated in Figure 1.2 (gray line), along with observed U.S. population growth from 1790 to 1920 (black line).⁸² Pearl and Reed's application of the logistic law to the population of the United States highlights some of the important features of their theory. Although Pearl claimed a basis for the logistic law in biology, the law defined populations administratively, as those included in government censuses (therefore American Indians and enslaved African Americans would not have been included in early U.S. population figures). Yet Pearl's theory assumed that the biologically-determined rate of growth was always governed by the ultimate population that could be supported on the territory controlled by a given state. According to Pearl, the population of the United States — even as early as 1790 — was growing along a logistic trajectory toward the maximum population that could be supported in the year 2100, after more than three centuries of territorial expansion and technological innovation. Moreover, the population before 1790 was taken to be zero, not because nobody was living in the territory that would become the United States, but because there was not yet a census to count them.

To demonstrate the validity of his theory, Pearl fit logistic curves to historical census data for an additional 15 countries, and to historical estimates of the population of the world as a whole.⁸³ However, while logistic curves could be fit to any three data points, no human population had demonstrated a full logistic growth cycle during the period for which data had been collected. The observed growth of the population of the United States, for example, appeared to trace the bottom part of the curve, while that of France appeared to trace the top, and that of England and Wales the middle. In 1924, Pearl's admirer, British statistician George Udny Yule, in his presidential address to the Royal Statistical Association, brilliantly finessed this fact by superimposing population data for the three countries onto a single graph to produce the full logistic, shown in Figure 1.3.⁸⁴ Pearl declared "the dodge"

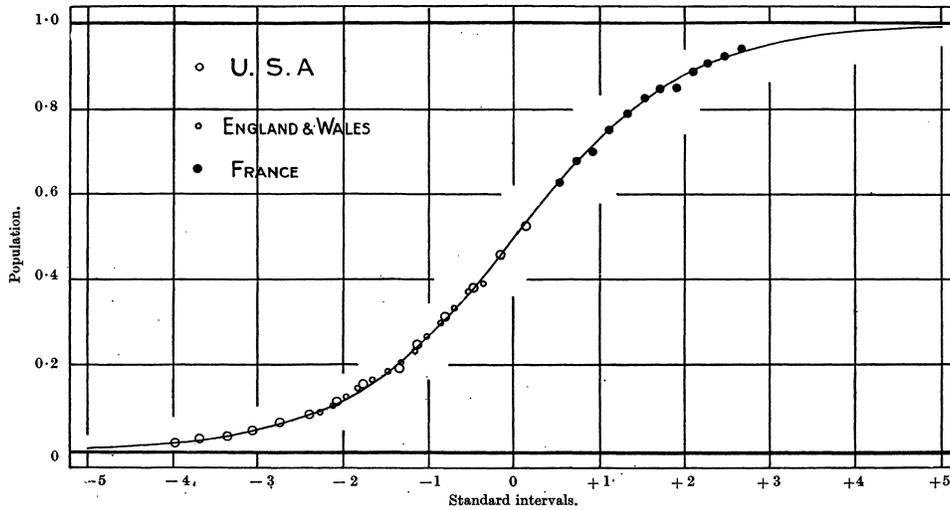
⁸²Graph created by author using data from: Pearl and Reed, see n. 79; Susan B. Carter et al., eds., *Historical Statistics of the United States, Millennial Edition* (n.d.), URL: <http://hsus.cambridge.org>.

⁸³Raymond Pearl, *Studies in Human Biology* (Baltimore: Williams & Wilkins, 1924).

⁸⁴G. Udny Yule, "The Growth of Population and the Factors Which Control It," *Journal of the Royal*

to be “extremely clever” and remarked, “how beautifully the thing comes out!”⁸⁵

Figure 1.3: Yule’s Image of the Populations of the U.S., England, and France



Arguing that human populations simply grew too slowly for an entire “cycle of growth” to have been recorded, Pearl also took an experimental approach, contending that “a real understanding of the problem to which Malthus addressed himself is going to come more from the intensive study of lower forms of life in the laboratory, under physically and chemically controlled conditions, than from the manipulation of never quite satisfactory demographic statistics.”⁸⁶ He attempted to bolster his theory by breeding populations of yeast and drosophila (fruit flies) in his laboratory and presenting their logistic growth pattern, shown in Figure 1.4, as evidence “that certain natural laws of growth appear to control population as definitely as they control an individual.”⁸⁷ He argued further that it was not necessary to observe a full cycle of human population growth in order to know that it took the shape of the logistic curve, drawing an analogy to astronomy, where it was possible “to calculate

Statistical Society 88, no. 1 (1925): 21.

⁸⁵Raymond Pearl to G. Udny Yule, Dec. 9, 1934, box 31; Although Yule had not manipulated the data in any way, fellow statistician A.M. Bowley accused him of misleading his audience with this image, which Yule presented as evidence of the veracity of the logistic law, despite the fact that no single country’s population growth had in fact described a full logistic curve. T.H.C. Stevenson, “The Laws Governing Population, Response to Yule’s Presidential Address,” *Journal of the Royal Statistical Society* 88, no. 1 (1925): 76.

⁸⁶Raymond Pearl, *The Biology of Population Growth* (New York: Knopf, 1925), 4-5.

⁸⁷Pearl, “Forecasting the Growth of Nations,” see n. 81, 704, image 708.

the path of a comet from a relatively few observations, and tell a century in advance exactly when Halley’s comet, for instance, should be visible from a given point.”⁸⁸

Figure 1.4: Growth Pattern of Pearl’s *Drosophila* Population

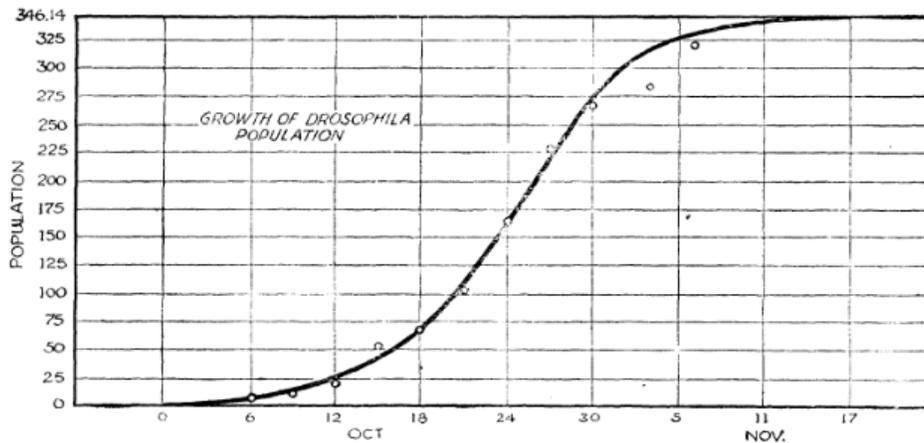


FIG. 4.—A CURVE SHOWING THE GROWTH OF A COLONY OF FRUIT FLIES IMPRISONED IN A BOTTLE

By the mid-1920s, Pearl had found one human population for which a full logistic cycle of growth could be observed: the indigenous population of Algeria between 1886 and 1921. Unlike the other populations Pearl projected — the U.S., France, etc. — this one was defined ethnically rather than politically, though of course the decision by the French colonial government in Algeria to subdivide the population by nativity in its census was a political one. Pearl described this Arab and Berber population as being midway between experimental (yeast, *drosophila*, etc.) and European or Euro-American populations — a human population whose growth Pearl assumed to be uninfluenced by social, economic, and political forces and thereby determined solely by biological factors. Pearl proposed that the Algerian population had been at its biological maximum prior to French colonization in the mid-nineteenth century, and that colonization had initiated a new cycle of growth by linking Algeria to new markets and introducing methods of agricultural production that increased yields, thereby expanding the territory’s carrying capacity. He then presented the subsequent population growth and its leveling off as biological responses to the rising population ceiling, rather than as results of such social projects and technological developments as public health, sanitation,

⁸⁸Pearl, “Forecasting the Growth of Nations,” see n. 81, 704.

and birth control.

Pearl drew on popular racist and colonialist tropes to argue that population growth among indigenous Algerians was governed solely by biological factors — mortality unaffected by public health measures and fertility unaffected by contraceptive practice. He denied that the mortality decline that produced recent Algerian population growth could have resulted from improved health practices, averring that “the fruits of European public health doctrines and education can scarcely be thought to play any large or direct part in the folkways and mores of the Arab or Berber. His notions of sanitation, cleanliness, personal hygiene, and medicine are all his own.”⁸⁹ In terms of the fertility decline that had caused the growth to level off, producing the S-shaped trajectory, Pearl denied the practice of birth control on the basis of the assumption that “the Arabs and Berbers are notoriously much less concerned about the remote consequences of sexual activity than they are about its immediate pleasures,” again calling on familiar colonial tropes about nonwhite sexuality to “prove” the absence of contraceptive practices.⁹⁰ Pearl drew an analogy to experimental evidence that demonstrated a decline in egg production among hens in response to increasing population density, claiming that human fertility was similarly biologically governed.

Pearl’s racist attempts to present indigenous Algerians as midway between experimental and European populations reveals inconsistencies in his logistic law of population growth. First, it raises the question of how populations are to be defined. Pearl’s analysis of the indigenous population separately from the foreign-born population of Algeria suggested a definition based on nativity, ethnicity, or biology, but the assertion that population growth was governed by a territory’s carrying capacity suggested a territorial definition. Second, the fact that Pearl went to such great lengths to “prove” that population growth among indigenous Algerians was governed solely by biological factors suggests that population growth among Europeans or Euro-American was not governed solely by biological factors, and therefore should not be predictable using the logistic projection method. However, Pearl argued

⁸⁹Pearl, *The Biology of Population Growth*, see n. 86, 79.

⁹⁰*Ibid.*, 107.

just the opposite — he cited the observed logistic growth trajectory among indigenous Algerians as “proof” that all human populations grow along logistic trajectories and therefore could be predicted by fitting logistic curves. Pearl pressed this assertion even further, arguing that “all the complexities of human behavior, social organization, economic structure, and political activity, seem to alter much less than would have been expected the results of the operation of those biological forces which basically determine the course of the growth of populations of men.”⁹¹ As evidence of this assertion, he argued that “neither the most destructive war in all history, nor the most serious epidemic since the Middle Ages (the influenza scourge), caused more than a momentary hesitation in the steady onward march of population growth” along a logistic trajectory toward Malthusian saturation.⁹²

Pearl’s claims indicate his view that populations had emergent and organic properties that superseded the actions of any individual, with growth governed only by biological properties and subsistence availability. According to these principles, Pearl understood population growth as an independent variable, and the components of that growth — fertility, mortality, and migration — as dependent variables. Therefore, population growth was pre-determined; if fertility were to decline, mortality would decline as well, or migration would increase to keep population growth on its pre-determined logistic trajectory. Growth could therefore be predicted but not controlled, and it could be predicted precisely *because* it could not be controlled. He therefore argued that human population growth should be a topic for the analysis of biologists rather than economists or sociologists.

Pearl used his projections to warn the public about the threat of impending overpopulation, publishing articles in popular periodicals with such titles as “Forecasting the Growth of Nations: The Future Population of the World and Its Problems” (*Harper’s* 1921), “The Population Problem” (*Geographical Review* 1922), and “World Overcrowding: Saturation Point for Earth’s Population Soon Will Be in Sight, With the Safety Limit for United States Estimated at 200,000,000 People—How the Nations Grow” (*The New York Times* 1922).

⁹¹Pearl, *The Biology of Population Growth*, see n. 86, 18.

⁹²Pearl, “Forecasting the Growth of Nations,” see n. 81, 711.

Although the upper asymptote of the logistic curve, according to Pearl's logistic law, represented the saturation population — the largest population that could be supported on a given territory — Pearl presented saturation as *overpopulation*, marked by scarcity and suboptimal living conditions. However, in contrast to East, who advocated birth control as a means of slowing population growth, Pearl argued that the human population growth trajectory could not be altered.

Overpopulation was the starting point for Pearl's analysis, not its outcome. His theory was predicated on the notion that populations would inevitably grow to their subsistence limit, and that this limit was the only influence on population growth. Pearl therefore interpreted any slowdown — whether observed or projected through the extrapolation of a logistic curve — as evidence of population pressure on resources. However, the slowing of growth is a fundamental property of logistic curves, meaning that Pearl imposed slowing growth on future population trajectories and then interpreted that slowdown as evidence of overpopulation. According to Pearl, fitting a logistic curve to the population of every country for which he had data “proved” not only that populations grew according to this “law” but also that populations everywhere — and the population of the world as a whole — had begun to (or would soon) experience the effects of resource limitation. Even in countries where growth had not slowed, the logistic curves Pearl fit necessarily predicted a future slowdown, which he attributed to pressure on resources. Moreover, on the basis of Malthusian theory, he described the upper asymptote as the “saturation population” — the size at which population would continually press against the limits of subsistence — though he never defined the phrase in terms of population density or the ratio of people to agricultural production, as East had done in his calculation of the Earth's maximum population.

Neo-Malthusian arguments about impending overpopulation were readily believable for some interwar U.S. observers. As a result of large-scale immigration, mainly from Southern and Eastern Europe, the population of the country had grown dramatically from just under

76 million in 1900 to over 105 million in 1920.⁹³ The 1920 census classified more than half of the U.S. population as urban for the first time, and problems of poverty and overcrowding were evident in the country's larger cities.⁹⁴ Because birth control was more readily available to wealthier couples, and because larger families required more resources, poorer families tended to be larger and larger families poorer.⁹⁵ All of these factors made it easy to attribute poverty and its sequelae to overpopulation, rather than to inadequate wages or the absence of social insurance. The businessmen whose philanthropic ventures funded both social science and poor relief were also heavily invested in overpopulation as an explanation, since it exonerated their business practices and the capitalist status quo.⁹⁶

But even Pearl's own math did not necessarily support his prediction of food shortage when the U.S. reached its supposed saturation population of 197 million shortly after the year 2100, or his claim that "our children's children will have to face a standard of living much below that which we enjoy."⁹⁷ He admitted that the 197 million he predicted for the U.S. seemed "absurdly small," as it was only twice the then-current population.⁹⁸ At the projected saturation point, the U.S. would have a density of 66 persons per square mile, which Pearl acknowledged was much lower than the density of many European countries that had standards of living at least as high as those in the U.S., potentially belying his prediction of scarcity. Unwilling to give up his Malthusian premise, however, he reasoned that, at this density, U.S. agriculture would not be able to meet the nation's food needs, and other

⁹³Carter et al., see n. 82, Table Aa2.

⁹⁴Alice O'Connor, *Poverty Knowledge: Social Science, Social Policy, and the Poor in Twentieth-Century U.S. History* (Princeton: Princeton University Press, 2000).

⁹⁵Edgar Sydenstricker and Frank W. Notestein, "Differential Fertility According to Social Class: A Study of 69,620 Native White Married Women Under 45 Years of Age Based upon the United States Census Returns of 1910," *Journal of the American Statistical Association* 25, no. 169 (1930): 9–32.

⁹⁶This assertion will be discussed in greater detail in Chapter Two. Fisher, see n. 72; Edward T. Silva and Sheila Slaughter, *Serving Power: The Making of the Academic Social Science Expert* (Westport: Greenwood, 1984); O'Connor, *Poverty Knowledge: Social Science, Social Policy, and the Poor in Twentieth-Century U.S. History*, see n. 94.

⁹⁷Raymond Pearl, "World Overcrowding: Saturation Point for Earth's Population Soon Will be in Sight, with the Safety Limit for United States Estimated at 200,000,000 People—How the Nations Grow," *The New York Times*, Oct. 8, 1922.

⁹⁸Pearl, "Forecasting the Growth of Nations," see n. 81, 708; The U.S. population reached 197 million around the year 1967. Carter et al., see n. 82, Table Aa7.

countries would stop exporting food because their populations would be nearing saturation as well, according to Malthusian theory. Yet East, taking the opposite approach to U.S. carrying capacity — calculating it on the basis of agricultural productivity — estimated that, with a requirement of 2.5 acres per person, the 800 arable acres of the U.S. could support a population of 320 million (close to the actual U.S. population in the year 2010), with another 11 million supported by forests and grazing.⁹⁹ East most certainly did not *recommend* such population density, but the carrying capacity he calculated on the basis of agricultural capacity was much higher than the saturation population determined by Pearl's logistic projection method.

Pearl recognized that birth control was in use and could be effective in preventing births to the couples who used it, and supported Sanger's efforts to have it legalized. For Pearl, birth control was a eugenic technology that could alter the *quality* of the saturation population, if not its *quantity*. At the 1921 International Eugenics Congress, he presented a talk titled "Some Eugenic Aspects of the Problem of Population." His *New York Times* article began with the provocative statement, "They breed like flies!" and went on to explain that "most cynical persons who make this remark about the inhabitants of the congested quarters of our great cities do not realize that that is an accurate statement of scientific fact."¹⁰⁰ Comparing the poor to flies, Pearl contended that

among the lower animals the least intelligent often reproduce most rapidly. And in mankind that part of the population which, if not the most stupid, at any rate takes least thought of the future, has the highest birth rate. Hence the lower classes tend to replace the upper classes. The poor man, facing poverty, and least able to rear children with the advantages necessary to make them good citizens, is likely to have the largest family.¹⁰¹

Pearl promoted birth control as part of a eugenic program that could reverse this trend, reducing the proportion of the population in poverty and increasing the "responsible" and

⁹⁹East, see n. 71.

¹⁰⁰Pearl, "World Overcrowding: Saturation Point for Earth's Population Soon Will be in Sight, with the Safety Limit for United States Estimated at 200,000,000 People—How the Nations Grow," see n. 97.

¹⁰¹Pearl, "Forecasting the Growth of Nations," see n. 81, 713.

“intelligent” segments of the population. Pearl also supported immigration restriction on the theory that reducing immigration would leave more room for native-born individuals in the saturation population.

Pearl’s logistic law of population growth and his logistic method of population projection were based on the Malthusian theory that population growth was entirely governed by subsistence availability, Pearl’s own claim of human population growth as a subject for the field of biology, and Pearl’s political support for birth control legalization and immigration restriction as part of the eugenic project of improving the quality of the U.S. population by reducing the proportion that was poor or foreign born. The following section describes scientific and political critiques of the logistic law and logistic projection method, and the political bases of alternatives to it developed by social scientists later in the decade.

1.2.2 Social Scientific Population Models: Differential Growth

Social scientists throughout the English-speaking world critiqued Pearl’s logistic law of population growth on scientific grounds. Walter Willcox, a vital statistician at Cornell, rejected the idea that population grew along any smooth trajectory, pointing to the effects of the Great War as evidence of the jaggedness of population growth.¹⁰² U.S. economist Roy Garis, though a supporter of immigration restriction, rejected the possibility of overpopulation and argued that “a really intensive capitalistic system of agriculture” could produce enough to feed the future population at a standard even higher than the present one.¹⁰³ George Knibbs, an Australian statistician, made a mathematical critique of Pearl’s logistic law of population growth, demonstrating that, although a logistic curve could be empirically fit to historical U.S. Census data, intercensal growth rates did not conform to those predicted by the logistic

¹⁰²Walter Willcox, “Population and the World War: A Preliminary Survey,” *Journal of the American Statistical Association* 18, no. 142 (1923): 699–712.

¹⁰³R. Garis, “Dangers of Overpopulation Doubted; Brighter Future Seen for Nation’s Young,” *New York Times*, Nov. 5, 1922.

equation.¹⁰⁴ British economist A.L. Bowley pointed out that, although the logistic curve appeared to describe past population growth reasonably well, other curves also fit past growth patterns, throwing doubt on the authority of the logistic to uniquely describe the future course of growth on the basis of its fit to past growth.¹⁰⁵ Economist Victor von Szeliski rejected the idea that U.S. population growth had, from the beginning, been governed by a fixed upper limit, arguing

it is impossible to read in economic history how population movements were conditioned by the geographical knowledge, the highways and the state of the arts of the time, how births and deaths were affected by the contemporaneous state of medicine and sanitary engineering and how large cities were made possible by the development of agricultural machinery, high speed transportation, electric power, steel frame buildings, refrigeration, and canning, and believe that in earlier periods the population was growing towards an upper limit governed by physical factors and inventions which were not to come into being for fifty years.¹⁰⁶

With this statement, Szeliski argues that human populations, at different times, grow under different conditions of possibility.

Pearl did, at times, recognize that technological changes could change the carrying capacity of a territory and therefore influence population growth — as in his discussion of Algeria.¹⁰⁷ He readily called on this explanation when observed population growth did not follow a logistic trajectory, as was the case in Germany and Japan, where he attributed deviations from the logistic curve to industrialization.¹⁰⁸ However, when observed population growth did not deviate from a logistic trajectory, as was the case for the United States, he made no mention of the potential effects of industrialization or territorial expansion on population growth.

¹⁰⁴George Knibbs, “The Laws of Growth of a Population,” *Journal of the American Statistical Association* 21, no. 156 (1926): 381–398.

¹⁰⁵Stevenson, see n. 85.

¹⁰⁶Victor von Szeliski, “Population Growth Due to Immigration and Natural Increase,” *Human Biology* 8, no. 1 (1936): 32–33.

¹⁰⁷Pearl, *The Biology of Population Growth*, see n. 86.

¹⁰⁸Pearl, *Studies in Human Biology*, see n. 83.

Above all, social scientists disputed Pearl's assertion that social, economic, and political interventions — such as wars, sanitation, industrialization, birth control, and immigration policy — had no effect on human population growth. The population models they developed in the 1920s focused on the role of human agency in determining population growth through activities that regulated mortality (sanitation and health care), migration (politics), and fertility (birth control). This section describes three models, developed by social scientists now viewed as fathers of demography (as are Pearl and Reed), and still in use by demographers, to explore their political premises and the ways in which they conceptualized population. These are the intrinsic rate of natural increase, developed by Alfred Lotka and Louis Dublin; the net reproduction rate, developed by Robert Kuczynski; and the cohort component method of population projection, popularized by Pascal Whelpton. In contrast to Pearl's logistic law of population growth, which understood human populations as organic entities with emergent properties that grew according to a natural law, the three models described in this section conceptualize human populations as aggregates of individuals. Population growth, therefore, is a result of the summation of individual activities affecting the three components of population growth: mortality, migration, and fertility.

The Intrinsic Rate of Natural Increase: An Argument Against Immigration Restriction and Birth Control Legalization

While many scientists in the U.S. favored immigration restriction and birth control legalization, support for these programs was not ubiquitous. Opponents constructed their own versions of “the population problem” and developed alternative methods of demographic analysis that predicted imminent population decline in the United States, rather than the overpopulation at the heart of Pearl's logistic method. The two main proponents of this view were Metropolitan Life Insurance statisticians Alfred Lotka and Louis Dublin.

Alfred Lotka was born in 1880 in Lviv, Ukraine, to American parents. He completed his undergraduate education at Birmingham University in 1901 and pursued graduate work at

the University of Leipzig and then at Cornell, returning to Birmingham to earn a D.Sc. in mathematical biology in 1912. Between 1912 and 1922, he worked for the General Chemical Company, the U.S. Patent Office, the U.S. Bureau of Standards, and the magazine *Scientific American*. From 1922 to 1924, Lotka worked in Raymond Pearl's lab at Johns Hopkins, and the two remained close friends until Pearl's death in 1940. Immediately after his stint in Pearl's lab, Lotka became supervisor of mathematical research at Metropolitan Life Insurance, where he worked closely with Louis Dublin. Before Lotka's death in 1949, the two published three books together: *The Money Value of a Man* (1930), *Length of Life* (1936), and *Twenty-Five Years of Health Progress* (1937).

Lotka's colleague Louis Dublin was born in Lithuania in 1882, but moved to New York with his parents in 1886. He completed an undergraduate degree in mathematics at the College of the City of New York in 1901 and a Ph.D. in biology at Columbia in 1904, where he worked closely with Franz Boas, one of the most prominent critics of racial and eugenic thought in the early twentieth century.¹⁰⁹ Metropolitan Life Insurance hired Dublin in 1909 as part of a new initiative that provided public health, health education, home nursing, and other welfare services for policyholders as a means of increasing profits.¹¹⁰ Dublin remained at MetLife until 1952, eventually becoming vice president. He also played a major role in strengthening the American Public Health Association and laying the groundwork for modern public health administration systems.¹¹¹

Dublin was interested not only in predicting the mortality of the American population, but also in reducing it, and demonstrated that MetLife's public health and welfare work saved the company much more money than it cost.¹¹² In particular, Dublin saw these ini-

¹⁰⁹“Louis I. Dublin, Ph.D.,” n.d.,Milbank Memorial Fund Records, Yale University Library, New Haven, CT, folder 1, box 24; Daniel B. Bouk, “The Science of Difference: Developing Tools for Discrimination in the American Life Insurance Industry, 1830-1930” (Ph.D. diss., Princeton University, 2009), 188; For more on Boas, see George W. Stocking, *Race, Culture, and Evolution: Essay in the History of Anthropology* (New York: Free Press, 1968).

¹¹⁰I.S. Falk, “Editorial: Louis I. Dublin: November 1, 1882 – March 7, 1969,” *American Journal of Public Health and the Nation's Health* (July 1969): 1083–1085; Bouk, “The Science of Difference: Developing Tools for Discrimination in the American Life Insurance Industry, 1830-1930,” see n. 109, 184.

¹¹¹Falk, see n. 110.

¹¹²See n. 109.

tiatives as a way to reduce the mortality of African Americans relative to white Americans. MetLife, as was the case with most white-owned insurance companies, insured black policyholders as substandard risks, using class as a criterion for discrimination in states where insurance companies were prohibited from pricing policies differentially by race. In contrast to Frederick Hoffman, statistician at The Prudential, who drew on mortality statistics to argue that African Americans were inherently, permanently, and terminally inferior to white Americans, destined to die off as a race and therefore uninsurable, Dublin demonstrated that African American mortality was decreasing over time, and that the mortality gap was a result of inferior access to medical care and decent housing rather than biological inferiority, thereby making the case for black equality and insurability.¹¹³

Dublin served as president of the American Statistical Association in 1924. He devoted that year's meeting to "the population problem," and titled his presidential address and keynote speech "The Statistician and the Population Problem." Dublin's version of the problem, however, was very different from that of Pearl and East. He argued that, although population growth in Central Europe had been a major factor leading to the outbreak of World War I, the problem in the United States was not imminent overpopulation, as the neo-Malthusians argued, but rather *anxiety about the threat of overpopulation*, which led to nativism and its expression in immigration restriction and the rise of the Ku Klux Klan.¹¹⁴ He contended that immigration restriction had no scientific basis; rather "the stream of papers and books in recent years which has crystallized into an organized propaganda for the Nordic races in America is simply an effort to give the appearance of respectability and of science to what is fundamentally an expression of unreasoned prejudice." Dublin described the new immigration quotas, passed earlier that year, as "hastily considered legislation," and argued that it was the job of the statistician "to get the facts, to analyze them, to weigh

¹¹³Bouk, "The Science of Difference: Developing Tools for Discrimination in the American Life Insurance Industry, 1830-1930," see n. 109, 185-186; Louis I. Dublin, "Life, Death and the Negro," *American Mercury*, 1927, 37-45.

¹¹⁴Louis I. Dublin, "The Statistician and the Population Problem," *Journal of the American Statistical Association* 20, no. 149 (1925): 2.

their relative importance, and then to arrive at a conclusion based upon the evidence,” so that policy could be informed by “accurate information or calm, logical reasoning.”¹¹⁵ The fact that Dublin assigned this task to the statistician — then still understood as a collector and analyst of state data — reiterates that there was as yet no distinct field of population science or demography. Moreover, by claiming the study of human population for the statistician, despite Pearl’s prominent claim that it was a topic for biology, Dublin emphasized the importance of the social, economic, and political determinants of population dynamics.

Dublin harshly criticized neo-Malthusian population arguments — whether based on Pearl’s logistic law or on East’s assumption of constant growth — arguing that they erroneously “forecast future populations of enormous size which at an early date would tax the very limits of our natural resources,” promoting unnecessary anxiety and stimulating racist and anti-immigrant politics.¹¹⁶ He contended that “prophecy is at all times dangerous, especially so in view of our lack of basic data and the imminent possibility of fundamental discoveries in agriculture or in the production of synthetic foodstuffs.”¹¹⁷ In addition to suggesting that future food supplies could be greater than those predicted by neo-Malthusians, he also suggested that future population growth might be less than the neo-Malthusians predicted. He faulted them for assuming “that the future growth of the country will keep pace with the increase in past decades without giving due consideration to the underlying factors which have caused that increase.”¹¹⁸ Dublin attributed recent population change not to biological factors or natural laws of population but to social, economic, and political factors, notably industrialization as a cause of population increase and contraception and war as a cause of population decrease.

Dublin supported this contention by collaborating with Lotka on a new model of pop-

¹¹⁵Dublin, “The Statistician and the Population Problem,” see n. 114, 3.

¹¹⁶Ibid., 6.

¹¹⁷Louis I. Dublin, ed., *Population Problems in the United States and Canada: An Outgrowth of Papers Presented at the Eighty-Sixth Annual Meeting of the American Statistical Association, December, 1924* (Boston: Houghton Mifflin, 1926), vii.

¹¹⁸Dublin, “The Statistician and the Population Problem,” see n. 114, 6.

ulation growth that was based on a much older population model with which insurance statisticians were very familiar — life tables. Life tables indicate the probability of death at each age, and allow insurance companies to calculate the premiums they need to charge in order to turn a profit.¹¹⁹ Recognizing that the probability of dying depends on age, Dublin and Lotka understood that a population with an older age structure will have a higher crude death rate. The same basic life table principle also applies to fertility, since only women are at risk of giving birth, and that risk depends on age, so a population with a higher proportion of women aged 15–49 will have a higher crude birth rate. Lotka and Dublin therefore argued that the crude rate of natural increase — the basis for East’s argument — was not an accurate indication of future population trends because it didn’t account for impending changes in the age structure of the population, which would change crude birth and death rates and thereby change the overall rate of growth.

Instead, Dublin and Lotka developed a measure that they termed the “true” rate of growth, known today as the intrinsic rate of natural increase. Lotka and Dublin defined this rate as the crude rate of natural increase a given population *would* exhibit if its age-specific rates of fertility and mortality were to remain constant long enough for the age structure to stabilize.¹²⁰ They therefore argued that it was more likely that *age-specific rates of fertility and mortality* — the proportion of people of a given age and sex who can be expected to give birth or die within the year — would remain constant into the future than that *crude fertility and mortality rates* — the number of births or deaths in a year divided by total population — would remain constant, since the crude rates depended on the population’s age structure, which is not stable if fertility and/or mortality have changed recently.

The famous publication of this measure — coauthored by Dublin and Lotka — appeared in 1925 in the *Journal of the American Statistical Association*. The mathematics are clearly

¹¹⁹Bouk, “The Science of Difference: Developing Tools for Discrimination in the American Life Insurance Industry, 1830-1930,” see n. 109.

¹²⁰This measure is based on the stable population model, which demonstrates that, given constant age-specific rates of mortality and fertility, in a population closed to migration, the age structure will become constant (stable) after several decades.

Lotka's work and he is the sole author of the methodological appendix, but Dublin presented the punchline in his 1924 presidential address: although the then-current crude rate of natural increase in the United States was 11 per thousand per year, the true rate of natural increase was only 5.5 per thousand per year.¹²¹ In plain English, this means that, although the U.S. population was at that time increasing at an annual rate of 11 per thousand (1.1%) through the difference between births and deaths (not including migration), if current age-specific rates of fertility and mortality were to continue into the future, once the age structure stabilized, those same age-specific fertility and mortality rates would only produce a natural increase (growth excluding migration) of 5.5 per thousand, or 0.55%. Dublin and Lotka explained the difference between the crude rate of natural increase and the intrinsic growth rate as a function of recent declines in fertility: as the new smaller cohort moved into the childbearing ages and the current childbearing cohort moved into old age, the population would have a higher proportion of elderly relative to young adults, which would mean more deaths and fewer births. Although 5.5 per thousand still represents a growing population, Dublin warned that, with immigration cut off, the U.S. would "be confronted with the reality of a stationary [non-growing] population much sooner than any of our forecasters have imagined," a thinly-veiled reference to Pearl.¹²² The relatively low rate of growth Dublin and Lotka identified was a troubling proposition because economists and policy makers still viewed population growth as a source of national strength and a prerequisite for economic growth, which had not entered into Pearl and East's purely biological analysis.¹²³

Pearl had also predicted eventual population stationarity (zero net growth) — represented by the upper asymptote of his logistic curve. According to Pearl's logistic theory, however, stationarity indicated and resulted from overpopulation. The logistic law held that a population only became stationary when it reached the limits of its subsistence and simply

¹²¹Louis I. Dublin and Alfred J. Lotka, "On the True Rate of Natural Increase," *Journal of the American Statistical Association* 20, no. 151 (1925): 305–339.

¹²²Dublin, "The Statistician and the Population Problem," see n. 114, 7.

¹²³John Maynard Keynes, "Some Economic Consequences of a Declining Population," *The Eugenics Review* 29, no. 1 (1937): 13–17.

could not grow any further. For Dublin and Lotka, stationarity was the result of numerous individual decisions to limit family size, which they argued were independent of limits to subsistence. Even if food were readily available, Dublin disagreed with the Malthusian premise that population growth was inevitable, and contended that “if a population can increase in a geometric ratio, it can also decrease in the same ratio.” His assessment of that possibility is clear from his following sentence: “This is the real danger.”¹²⁴

Lotka and Dublin’s “true” rate of growth was not a population projection. Rather, it represented what the long-term crude rate of natural increase *would be* if current age-specific rates of fertility and mortality continued into the future, immigration notwithstanding. This measure provided strong support for Dublin’s pro-immigration position, which Lotka seems to have shared. In fact, they positioned their co-authored article as a critique of immigration restriction, introducing their research question by stating that “the present policy of restricting immigration into the United States lends a particular interest to inquiries into the powers of natural increase of our population,” and continuing to show that those powers were not as strong as commonly thought or feared.¹²⁵ Dublin did advocate a eugenic program in the sense that he emphasized that, as the population approached stationarity, it would be important “not to weaken its internal composition by increasing the proportion of defective stock.”¹²⁶ However, he rejected any correlation between “defectiveness” and national origin. Dublin also opposed the legalization of contraception, which he saw as a threat to both the quantity and quality of the U.S. population.¹²⁷

The Net Reproduction Rate: Comparing Growth Across Populations

Concern for absolute population decline was much more prevalent in Europe, where World War I and the influenza epidemic had taken a heavier toll, than in the United States. Indeed, there had been a long history of concern with population decline in certain countries,

¹²⁴Dublin, “The Statistician and the Population Problem,” see n. 114, 10.

¹²⁵Dublin and Lotka, see n. 121, 305.

¹²⁶Dublin, “The Statistician and the Population Problem,” see n. 114, 10.

¹²⁷Louis I. Dublin, “The Significance of the Declining Birth Rate,” *Science* 47, no. 1209 (1918): 201–210.

particularly France, where it appeared that birthrates had been falling since the Revolution, and England, where birthrates had dropped dramatically among the middle and upper classes.¹²⁸ European leaders equated population size with national strength and geopolitical power. France's defeat in the Franco-Prussian War and its horrifying losses in World War I seemed to validate fears that population stagnation meant national weakness, while Britain's struggles to maintain its hold on South Africa at the turn of the twentieth century sparked fears that its population might no longer be up to the task of imperial rule.¹²⁹ These population anxieties conflated quantity and quality: as the fertility decline was mainly concentrated among the middle and upper classes, quantitative decline in *fertility* (regardless of absolute population change) was equated with *qualitative* population decline.¹³⁰

Between the wars, economist Robert Rene Kuczynski popularized a measure of population growth developed in 1884 by his mentor Richard Boeckh, director of the Berlin Statistical Office. This measure, the net reproduction rate (NRR), like the intrinsic rate of natural increase, refers not to the actual growth of a population, but to the growth of a population that has experienced constant age-specific fertility and mortality rates for several decades, and therefore has a stable age structure. Specifically, the NRR indicates the rate at which *women* replace themselves.¹³¹ An NRR of one says that, on average, every woman born will have exactly one daughter during her life and the population will replace itself exactly. The NRR and intrinsic rate of natural increase basically measure the same thing: a population with an NRR of one has an intrinsic rate of zero; a population with an NRR greater than one will have a positive intrinsic rate and a population with an NRR less than one will have a negative intrinsic rate. In a low-mortality population, where most women live to the average

¹²⁸Joseph Spengler, *France Faces Depopulation* (Durham: Duke University Press, 1938); Simon Szreter, *Fertility, Class, and Gender in Britain, 1860-1940* (Cambridge: Cambridge University Press, 2002).

¹²⁹Cole, see n. 39; Klancher, see n. 40.

¹³⁰Teitelbaum and Winter, see n. 55.

¹³¹The NRR specifically describes the rate at which women bear daughters, but since age-specific fertility rates are usually not available by sex of the child, this is estimated by applying the sex ratio at birth (boy babies per 100 girl babies) to age-specific fertility rates undifferentiated by sex. Samuel H. Preston, Patrick Heuveline, and Michel Guillot, *Demography: Measuring and Modeling Population Processes* (Oxford: Blackwell, 2001).

age of childbearing, women must have an average of two children (one daughter and, by implication, one son) to achieve an NRR of one. In a high-mortality population, where fewer women live to bear children, those who do live to childbearing age must have more than two children in order to make up for those who do not live to childbearing age if the NRR is not to dip below one.

The description of the NRR as the rate at which women replace themselves reflects the fact that the NRR — like the intrinsic growth rate — is a one-sex model: it models population growth on the basis of fertility rates experienced by one sex, in this case women. This definition had important consequences for the way demographers modeled population growth and conducted fertility research, and for the development of systemic methods of contraception that worked directly on women's bodies in postwar period. These consequences will be discussed in greater detail in later chapters; here I will discuss the reasons for and analytical implications of this definition. Counting births to men and to women would lead to the double-counting of fertility, but there is no inherent reason why the female population at risk of bearing children should be used as the denominator of the birthrate rather than the male population at risk, since men are also involved in conception. There are, however, practical reasons to attribute births to mothers rather than to fathers. First, the mother is always present at the birth, while the father might not be present, and might not even know that he has had a child. In places where a physician, midwife, or hospital employee is responsible for recording births, he or she may have better access to information about the mother than to information about the father. Mothers are therefore easier to account for. Their childbearing is also easier to model than that of men, since women can only bear children during a particular age span (usually considered by demographers to be ages 15–49), and rarely give birth to more than one child per year.

In 1941, when the female-centric model of fertility was in the process of becoming standard, demographer Robert J. Myers reminded his audience that it was a choice, not a biological necessity, pointing out that, “although at first glance it would seem as though rates for

men are without meaning since women actually bear the babies, it should be remembered that where there is a mother, there must also be a father.”¹³² While demographers in the mid-twentieth century made occasional use of male reproduction rates — for example, in the analysis of differential fertility by socioeconomic status, where births to men are correlated with their occupations¹³³ — the NRR is and nearly always has been employed as a female-centric measure. In 1949, demographers George Stolnitz and Norman Ryder referred to the NRR as “customarily female,” indicating that the female NRR was more commonly utilized than the male NRR and that, when sex was not specified, the NRR in question was a female one. However, the fact that they explicitly stated this assumption indicates that the naturalization of NRR as a female measure was not yet complete.¹³⁴ Today, the unqualified phrases “net reproduction rate,” “gross reproduction rate,” “total fertility rate,” and “age-specific fertility rate” always refer to female rates, and are defined in demography textbooks as the rate at which women replace themselves or bear children.¹³⁵

The decision to attribute births to women in the intrinsic growth rate and the NRR has both analytical and conceptual implications. Analytically, it may produce a different rate of net reproduction than would be calculated if births were attributed to men, particularly in populations with extreme sex disparities, as was the case in Europe after World War I, which had cost so many male lives.¹³⁶ In interwar France, for example, a country with more women than men in the childbearing ages, the female NRR was below one, indicating long-term population decline, and the male NRR (calculated in the same way, but using male

¹³²Robert J. Myers, “The Validity and Significance of Male Net Reproduction Rates,” *Journal of the American Statistical Association* 36, no. 214 (June 1941): 275.

¹³³Christopher Tietze, “Differential Reproduction in England,” *Milbank Memorial Fund Quarterly* (1939): 288–293.

¹³⁴George J. Stolnitz and Norman B. Ryder, “Recent Discussion of the Net Reproduction Rate,” *Population Index* 15, no. 2 (Apr. 1949): 116.

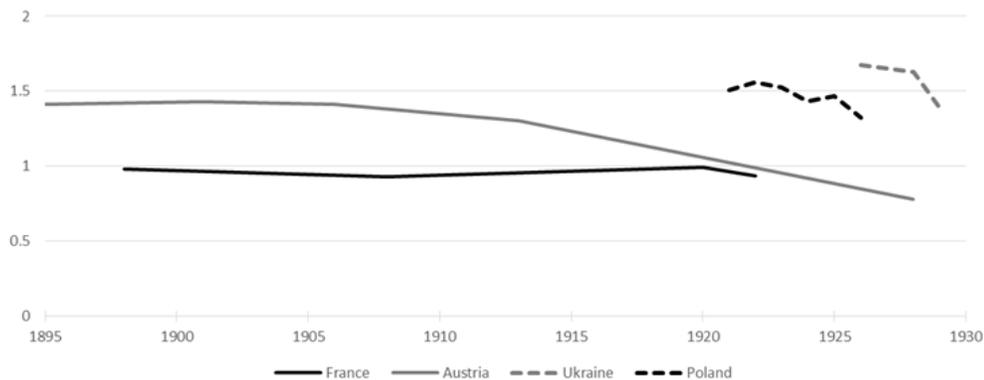
¹³⁵The gross reproduction rate (GRR), like the NRR, specifically refers to the rate at which women bear female children, with the same qualification cited above, though does not take mortality into account. For explanations of these measures, see Preston, Heuveline, and Guillot, see n. 131.

¹³⁶Alfred J. Lotka, “Review of *The Balance of Births and Deaths*, Volume I,” *Journal of the American Statistical Association* 24, no. 167 (Sept. 1929): 332–333; Alfred J. Lotka to Raymond Pearl, Nov. 28, 1932, Alfred J. Lotka Papers, Seeley G. Mudd Manuscript Library, Princeton University, Princeton, NJ, folder 4, box 14.

age-specific fertility rates rather than female rates) was above one, indicating long-term population growth.¹³⁷ The conceptual implication of the female model is the naturalization of women as the bearers of population, and therefore as the agents of growth and the targets of pro- or anti-natal interventions, as will be discussed further in Chapter Five.

Kuczynski was born in Berlin in 1876 and studied at the Universities of Freiburg, Munich, Strasbourg, and Berlin. His research included the history of wages, German economic and financial problems, food production, and labor conditions. Until the early 1930s, Kuczynski worked in German statistical offices, with a two-year sabbatical at the U.S. Census Office. From 1926 to 1932 he was a member of the Brookings Institution in Washington, D.C., though he spent most of that period in Germany, moving to England when the political climate became inhospitable and remaining there until his death in 1947.¹³⁸

Figure 1.5: Kuczynski's Net Reproduction Rate for France, Austria, Ukraine, and Poland



While at Brookings, Kuczynski published a two-volume work analyzing European NRRs, demonstrating that, while the Northern and Western European countries had NRR values near or below one, indicating imminent decline, the countries of Southern and Eastern Europe had NRR values well above one, indicating vigorous growth. He warned of the dire geopolitical consequences of his findings, which suggested a potential shift from north and

¹³⁷P.H. Karmel, "The Relations Between Male and Female Reproduction Rates," *Population Studies* 1, no. 3 (1947): 249–274; Robert R. Kuczynski, *Fertility and Reproduction: Methods of Measuring the Balance of Births and Deaths* (New York: Falcon, 1932).

¹³⁸David V. Glass, "Robert Rene Kuczynski, 1876-1947," *Journal of the Royal Statistical Society* 110, no. 4 (1947): 383–384.

west to south and east in the European balance of power, and his index provided support for the pronatalist activities of eugenicist groups and governments throughout Northern and Western Europe.¹³⁹ Figure 1.5 graphs the NRR values Kuczynski calculated for some of the countries of Europe, demonstrating that, by the late 1920s, the net reproduction rate had dropped below replacement in France (solid black line) and Austria (solid gray line), but was still above replacement in Eastern Europe, represented in this figure by Poland (dashed black line) and Ukraine (dashed gray line).¹⁴⁰ The figure suggests that, despite the anxiety apparent in Kuczynski's text, the net reproduction rates of Eastern Europe were also falling rapidly. Again, an NRR below one did not necessarily mean that a population was in decline, only that it would eventually decline if age-specific fertility and mortality rates remained constant into the indefinite future. Nonetheless, Kuczynski represented his results as demonstrating imminent decline, and his audience generally accepted his reading. In England between the wars, the NRR was popularly known as the "Kuczynski rate," and newspapers publicized declines over time in the NRR as evidence of national decline and degeneration.¹⁴¹

Over the next few years, Lotka and Dublin would challenge the originality of Kuczynski's NRR, citing its reliance on their intrinsic rate of natural increase and Lotka's stable population model.¹⁴² While this dispute is largely beyond the scope of the present dissertation, what is important is that, in attempting to resolve it, Brookings Institution Director E.G. Nourse stated that the questions Lotka and Dublin had raised regarding Kuczynski's originality

can be adequately dealt with only by one who is not merely an able mathematician but also one who has a very considerable familiarity with vital statistics and demographic concepts. The final questions to be argued involve very delicate

¹³⁹See, for example: Soloway, see n. 55; Schneider, see n. 55; Carlson, see n. 55.

¹⁴⁰Graph created by author using data from: Robert R. Kuczynski, *The Balance of Births and Deaths*, vol. 1 (New York: MacMillan, 1928); Robert R. Kuczynski, *The Balance of Births and Deaths*, vol. 2 (New York: MacMillan, 1931).

¹⁴¹Soloway, see n. 55.

¹⁴²Alfred J. Lotka to Raymond Pearl, Nov. 9, 1936, "Alfred J. Lotka #9," box 17; Alfred J. Lotka to Raymond Pearl, Nov. 11, 1936, "Alfred J. Lotka #9," box 17.

interpretations of concepts which have a demographic as well as mathematical content. . . . In a word, I believe that the issues are so finely drawn that it is hardly possible to find anyone who is sufficiently inside and at the same time sufficiently outside to serve as a non-partisan but qualified arbitrator of the case.¹⁴³

Nourse's statements suggest that, by the early 1930s, social scientists had begun to view population as a distinct field of inquiry, one that drew on mathematics and statistics but could not be reduced to mathematics or statistics, and one that involved specialized knowledge that, at that time, few had. Indeed, the field was, at that moment, in the process of being invented, with Lotka, Dublin, and Kuczynski — as well as Pearl, East, and Sanger — all taking active roles.

Lotka, Dublin, and Kuczynski offered a very different view of the future than did Pearl and East, one that stemmed from different scientific assumptions and political positions. Pearl began from the scientific premise that population *quantity* was biologically determined and that overpopulation was inevitable, which reflected his political support for immigration restriction and a eugenic contraceptive program to control the *quality* of the ultimate saturation population. East supported the same political programs, but began from the scientific premise that both quantity and quality could be controlled by policy. Dublin and Lotka viewed population quantity as being shaped by social, political, and economic factors, and their analytic method validated their political opposition to contraception and immigration restriction. Meanwhile, Kuczynski's analysis pointed to a geopolitical anxiety: if Western European populations were headed toward decline, continued growth of Eastern European populations threatened the continental balance of power.

The Cohort Component Population Model: An Alternative Projection Method

In 1928, agricultural economist Pascal K. Whelpton published an article in the *American Journal of Sociology* in which he presented new projections for the U.S. population, and a

¹⁴³E.G. Nourse to Alfred J. Lotka, Sept. 28, 1931, folder 4, box 14.

new method of projecting population, now known as the cohort component method.¹⁴⁴ In contrast to the intrinsic growth rate and the NRR, which applied current age-specific rates of fertility and mortality to a fictitious age-sex structure — the structure that would prevail if those age-specific fertility and mortality rates remained constant for several generations — the cohort component method applied fictitious age-specific fertility and mortality rates — those expected to pertain in the future — to the current age-sex structure. Over the period of an arbitrary time step — usually five years — the cohort component method “ages” the current population, applying age-specific mortality rates to each age group, moving the survivors into the next age group, applying age-specific fertility rates to each female age group between 15 and 49, and inserting the expected births into the 0-4 age category. The analyst must also account for expected immigration and emigration within each age category.

Although the cohort component projection method came to be associated with Whelpton, he was not the first to use it. In 1895, British economist Edwin Cannan had employed this algorithm to forecast the 1931 population of London for the Metropolitan Water Commission, and A.L. Bowley had used it in 1924 to calculate the fertility rates that would be necessary for England and Wales to avoid population decline over the twentieth century.¹⁴⁵ Welpton’s major innovation was to combine the mathematical algorithm used by Cannan and Bowley — as simple as subtracting expected deaths and emigrations and adding expected births and immigrations — with predictions of *changes* in age-specific fertility and mortality rates over the period of projection. It is this component — changing future fertility and mortality — that qualifies Whelpton’s work as population forecasting, in contrast to the work of Cannan and Bowley, which would more appropriately be classified as simulations. Cannan had assumed constant mortality rates and numbers of births, and Bowley had assumed constant mortality rates and zero overall natural increase.

¹⁴⁴Pascal K. Whelpton, “Population of the United States, 1925 to 1975,” *American Journal of Sociology* 34, no. 2 (1928): 253–270.

¹⁴⁵Edwin Cannan, “The Probability of a Cessation of Growth of Population in England and Wales During the Next Century,” *The Economic Journal* 5, no. 20 (1895): 505–515; A. L. Bowley, “Births and Population in Great Britain,” *The Economic Journal* 34, no. 134 (1924): 188–192.

As demographer Irene Taeuber would put it in 1944, calculations based on “the assumption of the maintenance of present levels of fertility and mortality actually constitute illustrations of the maintenance of the present vital balance, not predictions of future population. Projections which attempt to estimate the probable population of the future must take account of probable future changes in fertility, mortality, and migration.”¹⁴⁶ This distinction is critical to understanding the ways in which demographers describe present conditions of population change with reference to the future. As discussed in the Introduction, demographers deal in population stocks and flows, or quantities and rates of change. Demographers often illustrate the effects of growth rates on population quantity by invoking the future. For example, East’s statement that, in the absence of intervention, world population could reach 5.2 billion by the year 2023 illustrated the magnitude of the then-current population growth rate. He did not predict that the world’s population *would be* 5.2 billion in the year 2023, but rather translated the then-current rate of world population growth into a quantity. It was a statement about the then-current rate of world population growth rather than one about future world population size. In contrast, in his 1928 article, Whelpton predicted what the U.S. population would be at five-year increments on the basis not of current rates of fertility, mortality, and migration, but on the basis of expected future rates.

Whelpton was one of two social scientists working at the Scripps Foundation for Research in Population Problems. The Foundation had been established in 1922 by newspaper magnate Edward Scripps to promote research on yet another version of “the population problem”: the fear that population growth in some parts of the world — specifically Asia — combined with population decline in other parts of the world — specifically North America and Western Europe — would disrupt the existing geopolitical order. This fear had been popularized in the U.S. by historian Lothrop Stoddard, who published *The Rising Tide of Color Against White World-Supremacy* in 1920, and eugenicist lawyer Madison Grant, who published *The Passing of the Great Race* in 1916 and wrote the introduction to Stoddard’s

¹⁴⁶Irene B. Taeuber, “The Development of Population Predictions in Europe and the Americas,” *Estadistica* (1944): 329.

book.

This fear was the global analogue of a central concern of many interwar eugenicists: differential fertility. Differential fertility refers to the birthrate differentials within countries between segments of the population considered more favorable and less favorable, usually defined by class, race, or nativity. In the U.S., for example, differential fertility could refer either to the higher fertility of the foreign born relative to the native born or to the higher fertility of the working classes relative to the middle class, while in Western Europe it usually referred to the latter. Scholars of all political stripes railed against differential fertility within their own countries. However, although Kuczynski expressed concern about fertility differentials between North America and Western Europe on the one hand and Eastern Europe and the U.S.S.R. on the other, most population observers in the U.S. and Western Europe paid little attention to population growth in other parts of the world. Three factors that may have contributed to their disinterest are the relative lack of data for countries outside of North America and Europe (which will be discussed in greater detail in Chapter Three); the fact that population density was low in many parts of Asia, Africa, and Latin America, and high mortality kept net population growth low even in places with high fertility; and the Darwinian belief apparent in East's work that "superior" races would outcompete "inferior" ones if space on the planet ever became scarce.¹⁴⁷ Others, however, including Stoddard and Grant along with many U.S.-based businessmen and politicians, viewed the impending population decline predicted by Lotka, Dublin, and Kuczynski for North America and Western Europe in a global context.

When Scripps established his research center, it was not immediately clear what type of experts he should hire. Nobody yet called himself a population scientist or demographer. Pearl had claimed the study of human population for biology, but scholars in other disciplines were also analyzing population data. Scripps ultimately chose sociologist Warren Thompson, whose work Scripps admired. Thompson had completed his dissertation, titled "Population:

¹⁴⁷East, see n. 71.

A Study in Malthusianism,” in 1915 under the direction of Columbia University sociologist Franklin Giddings, who pioneered the use of quantitative methods in the social sciences. Giddings had encouraged Thompson to work with population data for the United States because those data were readily available and had not yet been extensively analyzed outside of government statistical offices.¹⁴⁸ In so doing, Giddings claimed population as a topic of inquiry for the social sciences.

In 1922, Thompson accompanied Scripps on a yacht tour of East Asia, where Scripps was most concerned about population growth. On their return, Scripps hired Thompson as director of the brand-new Scripps Foundation for Research in Population Problems, housed at Miami University in Scripps’s native Butler County, Ohio. Scripps envisioned his Foundation as a haven where talented scientists could pursue independent research into questions of population, free from the burden of teaching. He planned to hire a new young scientist every few years.¹⁴⁹ Scripps’s death in 1926 derailed this plan, but before his death Scripps hired the second member of his population research team, agricultural economist Pascal K. Whelpton. Whelpton had no prior experience with population research, but such experience was rare, and the other candidate for the job — Lowell Reed — was two years beyond Scripps’s arbitrary but strictly enforced age limit for recruits of 35.¹⁵⁰ After Scripps’s death, work at the Foundation continued with funding from the Laura Spellman Rockefeller Memorial, and Thompson and Whelpton turned their attention from population growth in East Asia to population growth and population composition — age structure, urban/rural balance, immigration, internal migration, and race — in the United States.¹⁵¹

¹⁴⁸Warren S. Thompson, *Population: A Study in Malthusianism* (New York: Columbia University Press, 1915); For more on Giddings and quantitative sociology, see Bannister, see n. 63.

¹⁴⁹Warren S. Thompson, “Description of Scripps Foundation Work,” 1923, “Warren S. Thompson,” box 27; Warren S. Thompson to Frederick Osborn, Jan. 13, 1965, American Eugenics Society Records, American Philosophical Society, Philadelphia, PA, “Scripps Foundation for Research in Population Problems,” box 19.

¹⁵⁰Raymond Pearl to Warren S. Thompson, 1923–1924, “Warren S. Thompson,” box 27; Warren S. Thompson to Raymond Pearl, 1923–1924, “Warren S. Thompson,” box 27; Thompson to Osborn, Jan. 13, 1965, see n. 149; Clyde V. Kiser, “Contributions of P.K. Whelpton to Demography,” *Biodemography and Social Biology* 20, no. 4 (1973): 438–447.

¹⁵¹Frank W. Notestein and Frederick Osborn, “Reminiscences: The Role of Foundations, the Population Association of America, Princeton University and the United Nations in Fostering American Interest in Population Problems,” *Milbank Memorial Fund Quarterly* 49, no. 4 (1971): 68.

Whelpton's 1928 projection reflected a completely different ontology of population and theory of population growth than did Pearl's, but his numbers and the shape of growth he projected were remarkably similar. Whelpton's method was much more open to possibility than was Pearl's. The cohort component projection method specifies that future vital rates are applied to the current age-sex structure; it does not specify what those future vital rates are or how they should be determined. Depending on the analyst's assumptions about future fertility, mortality, and migration rates, population could either increase or decrease over the period of projection, and at any rate. In contrast to Pearl's logistic law of population growth, which assumed regular growth along a logistic curve, the cohort component method — at least in principle — allowed for any trajectory of population growth or decline.

Because the cohort component method is so flexible, using it requires analysts to make some kind of assumptions about future vital rates. As of 1928, Pearl's logistic law was the only available theory of population growth, but as social scientists, Thompson and Whelpton rejected Pearl's biological determinism. Whelpton did not present his own coherent theory of population growth in his 1928 article — Thompson would do that in the following year — but he did make certain assumptions about the future course of vital rates. Whelpton predicted future fertility, mortality, and migration rates on the basis of recent trends in those rates. The trends he identified were in fact very recent because the United States, despite having carried out the world's first modern census in 1790, had only just begun collecting vital statistics. Neither birth nor death registration was universal, and Whelpton had access to only just over 20 years' worth of mortality data and an even shorter span of fertility data. Nonetheless, he charted a declining trend in both fertility and mortality rates, and predicted that these trends would continue, though at a decreasing rate. He assumed that white U.S. mortality rates were heading asymptotically toward the then-current mortality level of New Zealand, which at that time had the world's highest known expectation of life at birth.¹⁵² This choice suggests a belief that mortality was declining toward some biologically-

¹⁵²Expectation of life at birth is a life-table index (e_0^0) defined as the average number of years lived by all persons born in a given year. Preston, Heuveline, and Guillot, see n. 131.

determined minimum, beyond which it could not continue to decline. Future fertility rates were derived from the observed downward trend in age-specific birth rates, which Whelpton also assumed to be asymptotic — suggesting that he did not expect people to stop having children altogether — though he did not use data from other countries to establish the lower limit.¹⁵³

Although Whelpton's method was based on changes in vital rates and did not impose a pre-determined trajectory of population growth, the way Pearl's did, it did suggest a universal trajectory of mortality and fertility rates — declining steadily over time but at a slowing rate, forming inverse logistic curves — and produced a logistic trajectory of population growth that looked much like Pearl's projections. The universality of this pattern would be formalized the following year by Thompson in his articulation of demographic transition theory, described below. Just as Kuczynski's NRR and Lotka and Dublin's intrinsic rate of growth attributed births only to women, Whelpton's cohort component projection model also calculated future births from female age-specific fertility rates, as has been standard practice in population projection ever since.

While Pearl usually applied his logistic law of population growth to the populations of entire countries (the notable exception being his analysis of the indigenous population of Algeria), Whelpton decomposed the U.S. population according to the divisions that seemed salient at the time, calculating separate projections for native-born whites, foreign-born whites, and African Americans, and separating each group by urban/rural status.¹⁵⁴ Whelpton chose these divisions because rates of natural increase varied by nativity, race, and the urban/rural divide, but also because he could: these were the categories by which his baseline data source — the 1920 Census — had divided the population in this period of urbanization, segregation, and nativism. Separate tabulation according to any criteria would have produced different rates of natural increase.¹⁵⁵ Given the contemporary concern with

¹⁵³Whelpton, "Population of the United States, 1925 to 1975," see n. 144.

¹⁵⁴Ibid.

¹⁵⁵Stephen Epstein makes the same point about the categories used in biomedical research. Stephen Epstein, *Inclusion: The Politics of Difference in Medical Research* (Chicago: University of Chicago Press, 2007).

socioeconomic fertility differentials, Whelpton likely would have made separate projections by socioeconomic status if census tabulations by class had been available. In Whelpton's analysis, however, the prediction of future mortality and fertility rates for native-born whites was always the central element, with rates for other groups determined as differentials between those groups and native-born whites that, in some cases, he predicted would narrow over time.¹⁵⁶

Whelpton assumed that African American life expectancy would rise over time but remain lower than that of white Americans into the foreseeable future.¹⁵⁷ He accounted for international migration with a fixed rate of one million immigrants every five years, and for rural-to-urban migration of native-born whites, with the rate slowing asymptotically in the future. He considered rural-to-urban migration negligible for foreign-born whites, as they made their choice of urban or rural residence on arrival, and dealt with it in a rather crude fashion for African Americans, with all natural increase attributed to black urbanites.¹⁵⁸ Evaluating Whelpton's interwar projections in 1957, demographer George Mair commented that the separate projections of racial, regional, and national groups may have *appeared* to add precision to the estimates, but in reality did not because "the basic uncertainties as to mortality and fertility are apparently more serious than the problems of prediction resulting from differential behavior of race-nativity groups."¹⁵⁹ These separate projections did, however, highlight and naturalize fertility differentials between these groups.

Projecting racial and regional groups separately further reified perceived differences among them, but it also allowed Whelpton to predict future changes in the racial composition and geographic distribution of the U.S. population along with changes in size. His overall projection for the U.S. was the sum of these separate projections. The ability to decompose the population of the U.S. into racial or regional groups, or the population of the world into countries or continents, made the cohort component projection method much

¹⁵⁶Mair, see n. 2.

¹⁵⁷Whelpton, "Population of the United States, 1925 to 1975," see n. 144.

¹⁵⁸Mair, see n. 2; Whelpton, "Population of the United States, 1925 to 1975," see n. 144.

¹⁵⁹Mair, see n. 2, 129.

more capable of speaking to concerns about differential fertility — whether intranational or international — than Pearl’s logistic method. Pearl’s theory conceived of populations — whether of a particular country or of the world as a whole — as organic entities that grew as cohesive units with the same properties as individual organisms. There was no way to account for different segments of a population growing at different rates. Moreover, Pearl’s method suffered from a fundamental mathematical limitation: it was not additive. He could, in theory, fit logistic curves for each country of the world and add them together to derive total global population, but this method would not produce the same result he would get if he were to fit a logistic curve to the population of the world, and it would not necessarily produce a logistic curve, simply because the sum of two logistic curves is not itself necessarily a logistic curve.¹⁶⁰ The non-additivity of Pearl’s projections allowed for a formal mathematical critique of his method that eventually led even Pearl himself to abandon it.¹⁶¹ Whelpton’s method, because it was additive, could be applied globally to address his late sponsor’s anxieties about international fertility differentials.

The cohort component method drew on the same understanding of population as did the intrinsic rate of natural increase and the net reproduction rate: an aggregate of individuals, with the overall size depending on the social, political, and economic factors that influence individual mortality, fertility, and migration. The cohort component method did not include a theory of population change, leaving assumptions about future vital rates open to the

¹⁶⁰Kingsland, see n. 83.

¹⁶¹The non-additivity of logistic curves was first pointed out by Pearl’s colleague, friend, and rival Edwin Wilson, a mathematician at Harvard. Wilson was an early supporter and adopter of Pearl’s logistic law of population growth, until he discovered that the logistic did not behave as a natural law should, and could produce absurd results. As an example, Wilson cited a logistic projection Pearl had made of the future population of New York City, in which Pearl calculated an upper asymptote of 35 million. When Wilson fit a logistic curve to the total population of the states of New York, New Jersey, and Connecticut, however, he calculated an upper asymptote of 22 million, suggesting that the carrying capacity of the three states was less than that of one city within those three states. For Pearl’s projection, see the notes section of the *Journal of the American Statistical Association* 20, no 152 (December 1925): 569-573. Wilson’s response is in Edwin B. Wilson and William J. Luyten, “The Population of New York City and its Environs,” *Proceedings of the National Academy of Sciences of the United States of America* 11, no. 2 (1925): 137-143; Pearl responded to Wilson’s critique by claiming — contrary to his many published statements — that the logistic curve was not intended as either a natural law of population growth or as a forecasting tool, but was simply an *a posteriori* description of population growth. Raymond Pearl to Edwin B. Wilson, Jan. 8, 1925, “Edwin B. Wilson#2,” box 29.

analyst's judgment, though that judgment had to incorporate biological realities regarding mortality and fertility. In contrast to the intrinsic rate of natural increase and the net reproduction rate, the cohort component method allows for migration and for changes in vital rates: at five-year increments, the analyst updates the size and structure of the population based on assumed fertility, mortality, and migration rates, and selects the rates to be used over the next five-year period. The following section further explores the differences between the logistic law of population growth and the cohort component projection method, debates between Whelpton and Pearl about the validity of each method, and the different ontologies and politics of population embedded in each.

1.3 Comparing the Logistic Law and the Cohort Component Method: Two Ontologies of Population

Recent scholars have disagreed over which projection method — the logistic or the cohort component — was more “scientific.” Henk de Gans asks why the cohort component method, which was based on “speculation” about future vital rates, so quickly displaced the logistic law, which was based on a mathematical function.¹⁶² In contrast, Edmund Ramsden argues that, after the publication of Whelpton's article, the cohort component method was rapidly accepted and institutionalized as the standard for population projection because it was more analytical and empirical than the logistic method.¹⁶³

The same debate raged between the wars among Pearl, Reed, and Whelpton. In his 1928 article, Whelpton presented his projection method as an explicit alternative to Pearl and Reed's method. Whelpton derided Pearl and Reed as “curve artists” — the term “artist” suggesting a lack of scientificity in their work — and carefully distinguished his method from

¹⁶²Henk de Gans, “Law or Speculation? A Debate on the Method of Forecasting Population Size in the 1920s,” *Population (English Edition)* 57, no. 1 (2002): 83–108.

¹⁶³Ramsden, “Carving Up Population Science: Demography and the Controversy Over the ‘Biological Law’ of Population Growth,” see n. 83.

theirs, stating that “no claim is made that the Scripps Foundation estimates represent a law of population growth.”¹⁶⁴ Whelpton described the projections produced by the cohort component method as “simply the results of an empirical process,” and emphasized that “these estimates represent simply what will happen under certain conditions of immigration, birth-rates, and death-rates” — the arithmetical outcomes of a set of assumptions.¹⁶⁵ With this statement, Whelpton disavowed the predictive nature of his projections, emphasizing his computational labor to elide his exercise of expert judgment to predict the future vital rates that underpinned his computation. On the other side, Reed emphasized the role of judgment in the cohort component model to characterize it as subjective. In contrast to the subjectivity of the cohort component method, he compared the logistic law to the methods used in the physical sciences, arguing that

in using the logistic law we are, therefore, following the line of thought that is applied in the field of physics or chemistry when any empirical equation is found to fit an observed set of facts and then is used for purposes of extrapolation beyond the range of observation. When we consider the procedures used by Thompson and Whelpton, we see that they exercise their judgment to state directly what the future birth and death rates will be and their population forecasts, being the direct arithmetic consequences of these rates, have therefore the values to be ascribed to the judgment of these workers.¹⁶⁶

This statement highlights the predictive element of cohort component projection that Whelpton’s description of the method had elided. It also conveniently glosses over the fact that the extrapolation Pearl and Reed used was itself the product of a theory, though this could easily be neglected since the theory was built into the computation, such that using the logistic projection method did not require the exercise of judgment or expertise.¹⁶⁷

¹⁶⁴Whelpton, “Population of the United States, 1925 to 1975,” see n. 144, 267.

¹⁶⁵Ibid., 267, 270.

¹⁶⁶Lowell J. Reed, “Population Growth and Forecasts,” *Annals of the American Academy of Political and Social Science* 188 (1936): 165.

¹⁶⁷The dispute over the “scientificity” of the two methods reflects the shift in the focus of scientific practice from laws to models, described by Giere, and reflects fundamental differences between the natural and social sciences in the explanation of natural and social phenomena, described by Abbott. Ronald N. Giere, *Science Without Laws* (Chicago: University of Chicago Press, 1999); Andrew Abbott, *Methods of Discovery: Heuristics for the Social Sciences* (New York: Norton, 2004).

The logistic law and the cohort component model relied on different social ontologies and employed different definitions of scientific explanation. While the cohort component model conceptualized society as an aggregate of individuals, the logistic law treated it as an emergent phenomenon subject to natural laws and with properties irreducible to individual actions. For Whelpton, population growth was the product of the addition and subtraction of component individuals. The composition of the population at baseline was critical because the number of persons in each sex-age-race-region group at the beginning of the projection and their behavior over the period of projection determined the final population size. In the cohort component model, as in Dublin and Lotka's true rate of natural increase and Kuczynski's NRR, populations with more women in the childbearing ages would grow more quickly than those with fewer, even if the same age-specific fertility rates were applied, and populations more heavily weighted toward the elderly would grow more slowly (or decline more quickly) because a greater proportion of the population would be exposed to higher mortality risks. Whelpton also saw population as being segmented along the social lines of race, nationality, and urban/rural status, with members of different groups facing different risks of birth and death, such that the relative size of these subpopulations had bearing on overall population growth. In contrast, in Pearl's model, population composition was irrelevant because the laws of growth applied to the population as a whole and were impervious to individual actions, such that individual characteristics and behavior had no influence on the aggregate growth rate.

In addition to viewing populations in additive terms, as aggregates of individuals, the cohort component model viewed the components of population growth in additive terms, in contrast to the logistic model, which viewed them in interactive terms. In the cohort component model, birth, death, and migration were the independent variables that determined population growth, and the effect of any component was not related to the effect of any other component. In Pearl's model, however, population growth itself was the independent variable, and mortality, fertility, and migration changed in response to changes in population

density and changes in each of the other components. The effects of the components were interactive rather than additive in the sense that a change in one would change the others so as to maintain the logistic trajectory of overall population growth.

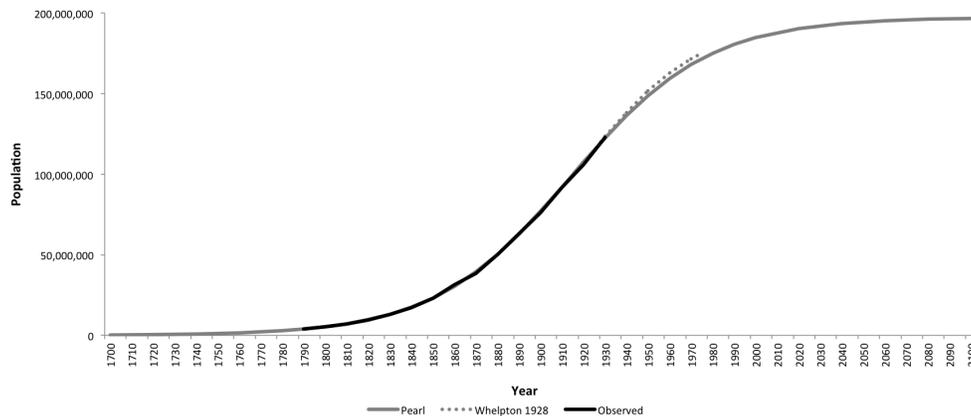
The logistic law and cohort component models embodied different modes of scientific explanation. Drawing on Charles Morris's aspects of symbolic systems, Andrew Abbott in *Methods of Discovery* presents three styles of social explanation: pragmatic, semantic, and syntactic.¹⁶⁸ The cohort component model offered a pragmatic explanation of population growth — one that facilitated intervention into the phenomenon it explained. Whereas the logistic law was fully determined by past population dynamics and offered only one vision of the future, the cohort component model was not at all determined by past population dynamics, only by the baseline population structure and by the prediction of future vital rates, which were completely open to the judgment of the analyst. Moreover, by specifying independent effects for each of the components of population growth, it suggested that adjustments to those components (for example a reduction in fertility through the spread of birth control, a reduction in mortality through public health initiatives, or a reduction in migration through restrictive legislation) could alter the future it described. By contrast, the explanation of population growth embodied in the logistic law was both semantic — in that explained population growth and its cessation in terms external to population, the availability of subsistence resources — and syntactic in that it described that growth in the elegant language of mathematics. It was explicitly not pragmatic, as the ability to intervene in population growth would have undermined the argument that growth occurs according to an unchanging mathematical formula. The cohort component model was neither syntactic nor semantic: future population was the result of a set of additions and subtractions to current population rather than the result of a mathematical formula, and the model attributed such growth only to elements of the system itself — birth, death, and migration — rather than biological, social, economic, or political forces. These differences are vital to

¹⁶⁸Abbott, see n. 167.

the history of demography and population control because they meant that, in contrast to Pearl’s description of population growth occurring according to an inalterable law of nature, in Whelpton’s model, population growth was the contingent product of policy and individual choices — mainly about fertility, which was “coming under human control faster than life extension.”¹⁶⁹

Despite the vast differences in their methods and theories, Whelpton’s projection of the U.S. population looked remarkably similar to Pearl’s, as shown in Figure 1.6.¹⁷⁰ Table 1.1 demonstrates that, at each date, Whelpton’s figures were just slightly higher than Pearl’s, which, as Whelpton explained, “from a popular standpoint seem too low.”¹⁷¹ Whelpton’s projection also traced an S-shaped curve, with growth slowing and population ultimately becoming stationary. He even remarked on “the similarity in trend and absolute size between these population estimates and those of Pearl and Reed (up to 1940), in spite of the entirely different methods by which they were obtained.”¹⁷² Whelpton only predicted population through 1975, so it is impossible to know how his projections would have compared to Pearl and Reed’s after that date.

Figure 1.6: Population Projections for the United States by Raymond Pearl and Pascal Whelpton, and Observed U.S. Population



¹⁶⁹Whelpton, “Population of the United States, 1925 to 1975,” see n. 144, 257.

¹⁷⁰Graph created by the author using data from: Pearl and Reed, see n. 79; Whelpton, “Population of the United States, 1925 to 1975,” see n. 144; Carter et al., see n. 82.

¹⁷¹Whelpton, “Population of the United States, 1925 to 1975,” see n. 144, 255; Pearl and Reed, see n. 79.

¹⁷²Whelpton, “Population of the United States, 1925 to 1975,” see n. 144, 267.

Table 1.1: U.S. Population, as Projected by Raymond Pearl and Pascal Whelpton, 1930-1970

| Year | Pearl | Whelpton |
|-------------|--------------|-----------------|
| 1930 | 122,397,000 | 123,600,000 |
| 1940 | 136,318,000 | 138,250,000 |
| 1950 | 148,678,000 | 151,620,000 |
| 1960 | 159,230,000 | 162,670,000 |
| 1970 | 167,945,000 | 171,460,000 |

It was not only the model that differed, but also the theory behind it. Whelpton’s approach was explicitly non-Malthusian and included no concept of a natural limit to population growth.¹⁷³ Therefore, nothing in his model necessitated that growth take a logistic shape. Had he assumed lower fertility and higher mortality in the future, the estimate would have curved downward and, had he assumed higher fertility and lower mortality in the future, it would have continued to climb. The projected population curve took this logistic shape because Whelpton designed it to do so. Although fertility and mortality had declined steadily over the period for which data were available, he assumed that rates would level off — with life expectancy never exceeding 70 years — and that they would do so gradually, producing the same gradual slowing of growth Pearl had predicted. As Jan Van Bavel has pointed out, however, there was at that time no theory of population growth that would have suggested that the fertility decline would ever end.¹⁷⁴ It is possible, therefore, that with little information about trends in or the biology of vital rates and no theory about population dynamics, Whelpton may have selected the future rates he did because they produced results that were similar to Pearl’s but slightly higher, as Pearl’s had been critiqued for being too low. It is also possible that the Malthusian idea of an upper limit against which

¹⁷³This distinction is often missed by present-day historians of population studies, for example, Karl Ittmann, “Demography as Policy Science in the British Empire, 1918-1969,” *Journal of Policy History* 15, no. 4 (2003): 417–448.

¹⁷⁴Jan Van Bavel, “Subreplacement Fertility in the West Before the Baby Boom: Past and Current Perspectives,” *Population Studies* 64, no. 1 (2010): 1–18.

population inevitably presses influenced Whelpton's projection assumptions even though he did not explicitly cite it.

Although Whelpton's projection produced numbers slightly higher than Pearl's, the "population problem" he predicted was not overpopulation, scarcity, or a reduced standard of living, but rather the slowing of growth in the United States and population aging, or the weighting of population toward the elderly. In contrast to Pearl, who argued that any slowdown or cessation of growth was evidence of a dangerous level of population pressure on resources, Whelpton argued that a slowing of population growth would present a challenge to businesses, whose dynamism — along with economic growth more generally — depended on continued population growth. Quite the opposite of Pearl and his fellow neo-Malthusians, Whelpton warned that U.S. farmers would need to halt their efforts toward ever-higher production levels in order to avoid oversupply and a consequent fall in prices. In 1934, he attended the Third International Conference of Agricultural Economists in Germany, where he demonstrated the slowing of population growth worldwide (indicated in projections made by others using his method).¹⁷⁵ Whereas Pearl had argued that slowing population growth was evidence that population was outstripping subsistence resources, Whelpton recommended that farmers limit their increases in agricultural production so that food supply would not exceed projected population figures.¹⁷⁶ The contrast between Pearl's interpretation of his projection and Whelpton's interpretation of his own very similar projection is striking, and demonstrates that even very similar population numbers could be marshaled as evidence

¹⁷⁵In contrast to the logistic method, which required minimal data — total population counts at three points (to solve for the three unknown constants in the logistic equation in the past) — the cohort component model required detailed data about the baseline population and its recent dynamics. It was also computationally intensive, as it did not represent population with a continuous equation, but rather with a step function in which each five-year period had to be calculated independently. Perhaps as a consequence of the extensive data and intensive computational requirements of the cohort component model, Whelpton himself never used it to project any population other than that of the United States, though it was rapidly adopted by population experts in Europe. For this adoption, see Henk de Gans, *Population Forecasting 1895-1945: Transition to Modernity* (Boston: Kluwer, 1999).

¹⁷⁶At the same time, however, he suggested that a slowing of population growth could increase the living standards and purchasing power of the poor, which would increase demand for agricultural products. Pascal K. Whelpton, "The Population Prospect," in *Proceedings*, Third International Conference of Agricultural Economists, Bad Eilsen, Germany (1934).

of very different “population problems” and in support of very different solutions to those problems.

Whelpton cautioned that the observed and projected decline in fertility would increase the elderly proportion of the population, a phenomenon known to demographers as “population aging.” By projecting each birth cohort separately, the cohort component model illustrated the age-structure of the future population as well as its size, indicating that fertility decline meant more people in each successive age cohort. Whelpton suggested that this change in age composition would provide a more supportive environment for high culture, but warned that it could also lead to political and economic conservatism, strain the capacity of proposed old age pension schemes, and require that people postpone retirement to make up for the impending shortfall of younger workers.¹⁷⁷ He continued to publish about the aging of the U.S. population and its causes and consequences throughout the interwar period and, as fertility continued to decline over the 1930s, his subsequent projections, discussed in Chapter Two, showed ever more extreme population aging.

Population aging is also a mathematical consequence of Pearl’s model, as demonstrated by Lotka.¹⁷⁸ Pearl finally addressed this aging in 1939 in an infamous speech to the American Statistical Association. In contrast to Whelpton, who used a social definition of age, dividing the population into the pre-working (< 15), working (15–64), and post-working (65+) ages, Pearl used a biological definition of age, dividing the population into the pre-reproductive (< 15), reproductive (15–49), and post-reproductive (50+) ages. The schema Pearl used in his presentation to illustrate this division is given in Figure 1.7.¹⁷⁹ Pearl referred to societies with more than 30% of people in the post-reproductive ages as “regressive,” and argued that people aged 50 and over “have worked out and finished whatever potential biological justification there ever was for their existence, [and] constitute a social problem of the first

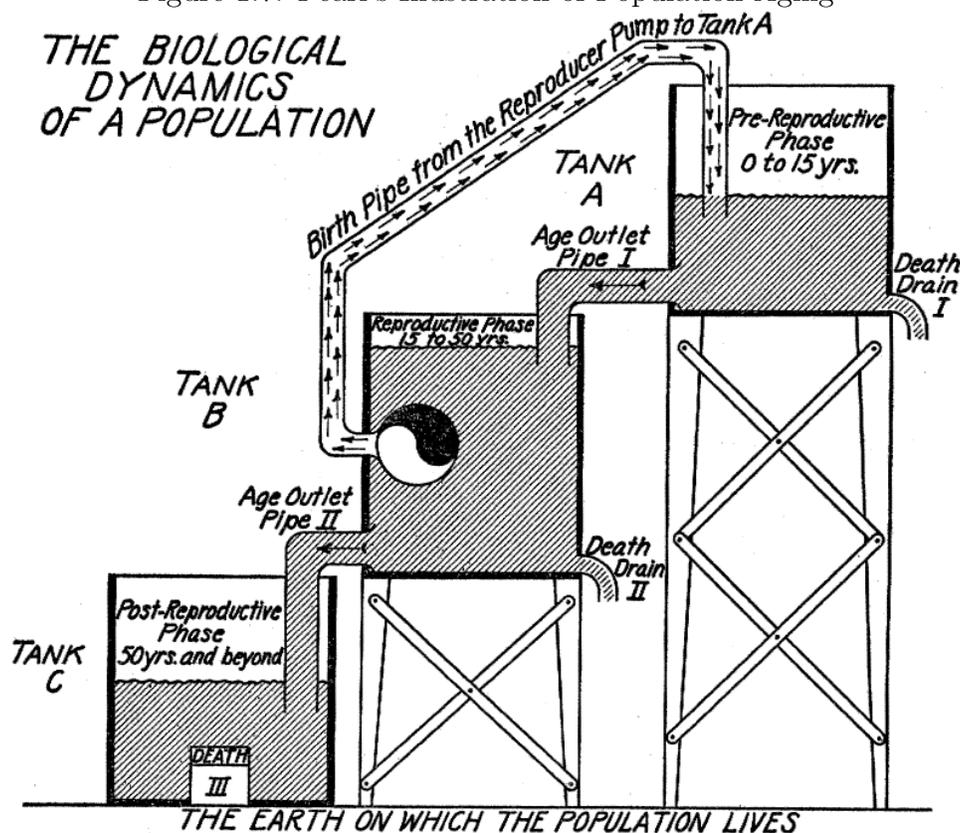
¹⁷⁷Whelpton, “Population of the United States, 1925 to 1975,” see n. 144.

¹⁷⁸Alfred J. Lotka, “The Structure of a Growing Population,” *Human Biology* 3, no. 4 (1931): 459–493.

¹⁷⁹Raymond Pearl, “The Aging of Populations,” *Journal of the American Statistical Association* 35, no. 209 (1940): 288.

magnitude,” despite the fact that many of them were still working productively.¹⁸⁰ Pearl’s talk earned him public scorn for his suggestion that people in the post-reproductive age group — particularly those who favored government support for the aged — had grown too foolish to be allowed to vote.¹⁸¹ In contrast to Whelpton’s model, where fertility decline produced a larger proportion of elderly in the population by reducing the proportion of children, Pearl seems to have considered fertility decline a *consequence* of a process of population aging he assumed to be inherent in the population organism — leading to a higher proportion of people in the post-reproductive ages — rather than its cause.

Figure 1.7: Pearl’s Illustration of Population Aging



In contrast to the logistic model, which offered prediction at the expense of control, the cohort component model held out the twin promises of prediction and control. Demographer Donald Bogue reflected on these scientific ideals in 1964, when he confidently stated that

¹⁸⁰Pearl, “The Aging of Populations,” see n. 179, 283, 292.

¹⁸¹“No Ballot for Aged Speech’ — Replies,” n.d., box 21.

“one of the slogans that we often recite to undergraduate students is that the goal of all science is prediction and control. Demography has been among the first of the social sciences to develop models for making demographic predictions and in a few years I expect us to define the accomplishments of demography using both terms of the classic definition.”¹⁸² Clearly, demographers had not yet achieved the level of control over population that seemed much more necessary in 1964 than it had in the 1930s, as will be described in Chapters Four and Five. Bogue’s comments, however, suggest that they could not have even hoped for such control without first developing a method of predicting future population that conceptualized it as the product of potentially-controllable factors: fertility, mortality, and migration operating independently of one another.

1.4 Demographic Transition Theory: A Social Theory of Population Change

While anyone can use the cohort component method to easily calculate the effect of any imposed vital rates on future population, the analyst or someone else must explicitly specify those rates. Despite Whelpton’s claims of the method’s empiricism, future vital rates cannot be known empirically; they are not included in even the most complete data sets because they have not yet occurred. The logistic law of population growth had been both a theory and a projection method: the theory that populations grew in logistic cycles implied that future population could be determined by fitting past population data to a logistic curve. The cohort component model, on the other hand, was atheoretical, simply a mathematical tool, and it therefore appeared more objective and — as Whelpton claimed — empirical than the logistic method. However, without any internal theory, using the cohort component method requires the subjective act of making predictions about the future course of fertility, mortality, and migration, and the accuracy of the projection depends on the quality of those

¹⁸²Donald Bogue, “The Demographic Breakthrough: From Prediction to Control,” *Population Index* 30, no. 4 (1964): 453.

predictions. Interwar users of the cohort component model could assume that then-current rates would continue indefinitely — the assumption made in Dublin and Lotka’s intrinsic rate of natural increase and Kuczynski’s net reproduction rate — or could assume that recent *trends* in vital rates would continue, as Whelpton did in his 1928 projections. Assuming that trends will continue requires knowing the shape of the trend — linear, exponential, etc. — but, since there is no empirical way to discover the shape of a future trend, making an assumption about that shape requires a general theory of population dynamics and of how (and maybe why) vital rates change over time.

In his 1928 projection, Whelpton assumed that vital rates followed downward logistic trajectories, with mortality and fertility continuing to decline but at decreasing rates. When fertility decline followed mortality decline, these trends produced the same upward logistic curve of population growth posited by Pearl. Whelpton did not explain the rationale behind his assumptions but, in the following year, his colleague Warren Thompson published one of the first articulations of the theory that has informed population projection ever since — demographic transition.¹⁸³ This section describes demographic transition theory, its relationship to modernization theory, which was emerging around the same time, and the geopolitical consequences it threatened.

1.4.1 Modernization and Demographic Transition

Demographic transition theory is usually attributed to mid-century demographers Frank Notestein and Kingsley Davis, both of whom made well-known statements of it in the 1940s, or to Adolphe Landry, who described something similar in his 1934 *La Revolution Demographique*.¹⁸⁴ However, it was Warren Thompson who first laid out the stages of demo-

¹⁸³Warren S. Thompson, “Population,” *American Journal of Sociology* 34, no. 6 (May 1929): 959–975.

¹⁸⁴Dudley Kirk, “Demographic Transition Theory,” *Population Studies* 50 (1996): 361–387; Although most commentators describe Landry’s demographic revolution as simply an early version of demographic transition, Jan Van Bavel has argued that it was fundamentally different in that it had no end point. Whereas demographic transition is a shift from a high-pressure equilibrium to a low-pressure equilibrium, demographic revolution involved an infinite decline in fertility to the point of extinction. Van Bavel, see n. 174.

graphic transition in a 1929 article in the *American Journal of Sociology*, though he did not name it. Demographic transition is both a historical description and a theory. As historical description, it refers to the nineteenth-century English experience of declining mortality, which initiated rapid population growth, followed by declining fertility, which had slowed — and was expected ultimately to end — population growth.¹⁸⁵ Demographic transition *theory* is the universalization of this experience: the prediction that all societies will follow the same demographic trajectory (reduction in mortality followed by reduction in fertility with population growth in between) as part of the process of modernization — either cause, consequence, or both.

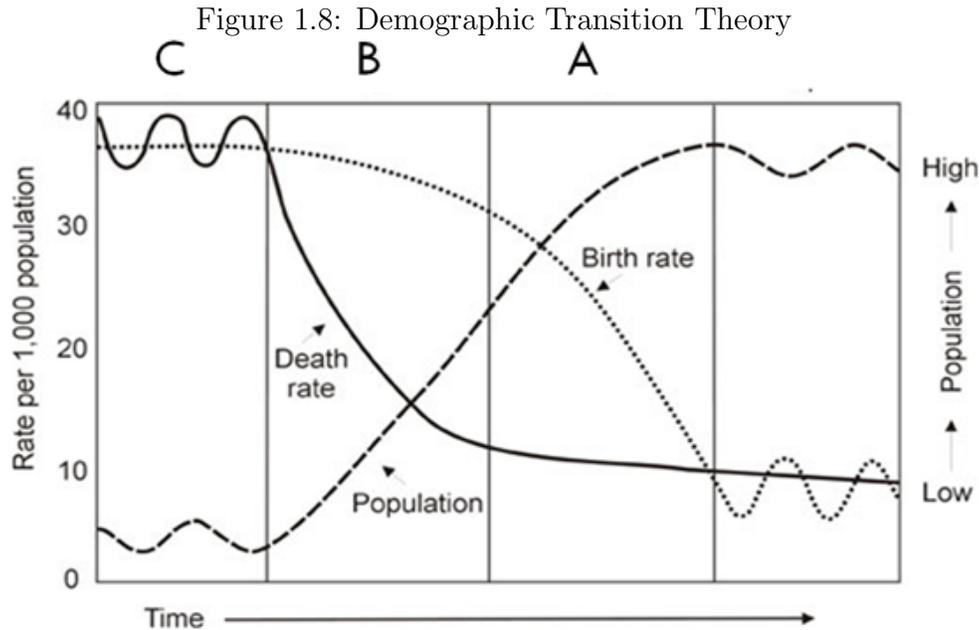


Figure 1.8 is a recent textbook illustration of demographic transition theory, with downward-sloping lines representing mortality and fertility and an upward-sloping line representing population growth.¹⁸⁶ The diagram is divided into four sequential phases, with the first three indicating the experience of three groups of countries described by Thompson in his 1929 article as representing sequential phases in a universal progression from high fertility

¹⁸⁵Demographic scholarship has indicated that, although demographic transition is often described as the general experience of Western Europe, only England experienced the textbook case.

¹⁸⁶Adapted from http://www.lewishistoricalsociety.com/wiki/tiki-read_article.php?articleId=50 (accessed 4/1/2015).

and mortality to low fertility and mortality:

Group A. Low mortality and fertility, with little overall population growth: Northern and Western Europe, and the English-speaking non-European world.

Group B. Declining mortality and still-high fertility, with rapid population growth: Southern and Eastern Europe.

Group C. High fertility and mortality, with little overall population growth: The rest of the world.¹⁸⁷

Group A had progressed the farthest in the supposedly-universal demographic transition, and Thompson described Group B as being about 50 years behind group A, but experiencing a much more rapid mortality decline. Thompson attributed the mortality decline of both groups to industrialization, and predicted that population could also grow in the Group C countries if they were to begin to industrialize, pointing to Japan as an example.¹⁸⁸

Although Thompson may have been the first to formally state this theory, it crystallized the geopolitical concerns of Edward Scripps, Lothrop Stoddard, Madison Grant, and other population observers. At Sanger's 1927 conference, which Thompson had attended, British economic historian Mabel Buer, who had recently published a monograph describing the population consequences of the Industrial Revolution in Great Britain,¹⁸⁹ cautioned her fellow population scientists that, although population growth in Asia and Africa appeared to be slow or nonexistent,

it is important to note that the slowness of their increase is due to the same cause as was the slow increase of pre-18th century Europe, that is, to a high death rate and in particular to a high infantile mortality, due to lack of elementary hygiene. There is every sign that in a few years this will be remedied, and the change has already begun in India. It seems probable that we shall then have a period in the East corresponding to the first half of the 19th century in Europe, a period of a lower death and infant mortality rate (which, however, is still high according to our notions) and of a birth rate little, if at all, diminished. The result will be a rapid increase in population which may well be fraught with world-shaking

¹⁸⁷This is a paraphrase, not a direct quotation. Thompson, "Population," see n. 183, 961-962.

¹⁸⁸Ibid.

¹⁸⁹Mabel Buer, *Health, Wealth, and Population in the Early Days of the Industrial Revolution* (London: Routledge, 1926).

consequences.¹⁹⁰

Demographic transition theory is clearly a variant of the modernization theory that was beginning to develop in the social sciences, and part of a much longer tradition of conjectural history and social evolutionary thought that Arland Thornton has critically described as “reading history sideways” and Anne McClintock has described as “anachronistic space” — viewing different parts of the world as representing distinct stages in a universal trajectory of human and social development.¹⁹¹ Demographic transition theory associates high mortality and fertility rates with so-called pre-modern or traditional societies and low mortality and fertility rates with so-called modern societies, positing that the transition to modernity in Western Europe and North America both caused and was facilitated by declining mortality and fertility rates. It assumes that the demographic history of these places represents a universal trajectory, such that the demographic condition of the rest of the world reflects Europe’s past and the demographic condition of Europe predicts the rest of the world’s future. As is also true of modernization theory, demographic transition theory elides the role played by the non-European world in Europe’s economic development and demographic transition, supplying raw materials for the industry that supported Europe’s population boom and providing an outlet for Europe’s excess population. The concept of demographic transition as a supposedly-universal experience attendant on the also supposedly-universal societal shift from tradition to modernity was an attractive concept for early twentieth-century social scientists, who sought to identify the laws that universally governed modern societies.¹⁹² The emerging science of demography would benefit considerably from the integration of popu-

¹⁹⁰Margaret Sanger, ed., *Proceedings of the World Population Conference, Held at the Salle Centrale, Geneva, August 29th to September 3rd, 1927* (London: E. Arnold, 1927), 57-58.

¹⁹¹Arland Thornton, *Reading History Sideways: The Fallacy and Enduring Impact of the Developmental Paradigm on Family Life* (Chicago: University of Chicago Press, 2005); Anne McClintock, *Imperial Leather: Race, Gender, and Sexuality in the Colonial Contest* (London: Routledge, 1995); Good accounts of modernization theory in the second half of the twentieth century include: Nils Gilman, *Mandarins of the Future: Modernization Theory in Cold War America* (Baltimore: Johns Hopkins University Press, 2003); Michael E. Latham, *Modernization as Ideology: American Social Science and “Nation Building” in the Kennedy Era* (Chapel Hill: University of North Carolina Press, 2000).

¹⁹²Immanuel Wallerstein, “What Are We Bounding, and Whom, When We Bound Social Research?” *Social Research* 62, no. 4 (1995): 839.

lation dynamics into modernization theory in the postwar period, as will be discussed in Chapter Four, as modernization theory held social, economic, and political change to be mutually causative, and demographic transition theory placed reductions in mortality and fertility at the center of that nexus.

Demographic transition theory recuperated Pearl's logistic trajectory of population growth and reinterpreted it in terms of the social, economic, and political process of modernization. The growth pattern described by demographic transition theory has a similar S shape to that of Pearl's logistic, as shown in Figure 1.8. According to its premises, prior to modernization, population is at a high pressure equilibrium, with high rates of mortality and fertility that balance one another to prevent overall growth; the first consequence of industrialization or economic development is more secure access to food and higher living standards, which reduce mortality, particularly among the young, causing population to increase ever more rapidly as mortality falls further; finally, the social and economic changes attendant on modernization produce smaller families, and this decline in fertility slows population growth until fertility rates match mortality rates and a low-fertility, low-mortality equilibrium is reached. According to demographic transition theory, population growth takes a logistic shape because mortality and fertility decline along reverse-logistic paths from steady high rates to steady low rates. The theory thus retained Pearl's logistic pattern of population growth, but explained it in terms of changing birth and death rates. It therefore had a flexibility that the logistic law lacked: Pearl's theory required a Malthusian limit to population growth and defined the slowing of growth as the nearing of that limit; demographic transition theory did not preclude Malthusian limits or the possibility of that limit exerting a dampening effect on population growth, but also explained the slowing of population growth independently of Malthusian limits. While Pearl's logistic law explained population change entirely in biological terms — growth resulted from subsistence availability; limits to that availability slowed growth — demographic transition theory explained population change in socioeconomic terms — growth resulted from improvements in food security and sanita-

tion; urbanization, education, and industrialization slowed growth by incentivizing smaller families.

Pearl's logistic law had conceptualized populations as organisms, growing according to the same natural laws that governed individual growth, and his logistic growth cycle resembled a kind of social life cycle. Italian vital statistician Corrado Gini drew on Pearl's theory to argue that populations, like individuals, were subject to aging and death. He interpreted the decline of fertility in Italy as a sign of social senescence, predicting that the Italian population itself would soon pass and be replaced by the "younger" and more vigorous populations of Eastern Europe.¹⁹³ Although demographic transition theory interprets population aging as a mathematical consequence of fertility decline, it nonetheless incorporates the idea that populations have a life cycle, in the sense that demographic transition, like the modernization process that was assumed to produce and accompany it, occurs only once in each society and marks the modernization or coming of age of that society. Populations that experienced the transition earlier could be said to be "older," not only in the sense of having an age structure more heavily weighted toward the elderly, but also in the sense of having led the progression through this inevitable process of growth and therefore having the expertise to help "younger" populations through it, just as colonial powers had characterized imperialism as a kind of tutelage in modernity. This idea would gain traction in the second half of the twentieth century, as will be described in Chapters Four and Five.

1.4.2 The Geopolitical Consequences of Demographic Transition Theory

By universalizing the Western European and North American experience of mortality and fertility reduction and consequent growth, demographic transition theory validated the geopolitical concern of Thompson's late patron, Edward Scripps, that Western European and North American global hegemony was threatened by nascent population growth in other

¹⁹³Carl Ipsen, *Dictating Demography: The Problem of Population in Fascist Italy* (Cambridge: Cambridge University Press, 1996).

parts of the world, which was poised to begin just as growth was leveling off in Western populations. Thompson concluded his 1929 article with a discussion of the geopolitical consequences of the pattern of population growth he had identified, pointing out that “peoples who have ceased to expand in numbers (France) or almost ceased to expand (Great Britain and Australia) are now holding great areas of unused lands, while the peoples who are just coming into their great period of expansion are confined to rather narrow territories that in some cases are also almost destitute of mineral resources.”¹⁹⁴ Thompson asked, “is it probable that the peoples in Groups B and C will sit quietly by and starve while the Group A peoples enjoy the lion’s share of the good things of the earth?” He answered that “the redistribution of the lands of the earth is the problem of problems that we must face in the world today as a consequence of the new population movements that are now taking place.” In the final sentence, he wondered, “can it be effected peaceably or must it be achieved by war?”¹⁹⁵

Thompson expanded further on this theme in a monograph published the same year, titled *Danger Spots in World Population*, where he argued that the greatest threat to world peace was differential population growth between Europe, Australia, and North America on the one side and Asia on the other. He explained this danger by pointing to the relationship between industrialization and population growth, noting that, when a society industrializes, “its needs for economic resources begin to expand with incredible rapidity; for not only is a flood of new wants being constantly released, but the rate of population growth rises by leaps and bounds.”¹⁹⁶ The improved standards of living associated with early industrialization both reduce mortality — increasing population size — and produce demands for new products. Thompson argued that, during this expansive stage, “the economic needs of a nation are chiefly for new lands for actual settlement.” However, at a later stage of industrialization, when manufacturing was well established and population growth had ceased, “the dominant

¹⁹⁴Thompson, “Population,” see n. 183, 975.

¹⁹⁵Ibid., 975.

¹⁹⁶Warren S. Thompson, *Danger Spots in World Population* (New York: Knopf, 1929), 6.

need is for access to the raw materials of industry and for markets in which to dispose of the goods made from these materials.”¹⁹⁷ The first countries to industrialize had effectively laid claim to much of Earth’s territory during their early expansive phase, and now sought to hold onto those territories as sources of raw materials and markets for finished goods, so countries that were just beginning to industrialize had no room for expansion. Meanwhile, the countries that controlled much of Earth’s territory and resources no longer had the population necessary to defend it, while the growing populations of newly industrializing countries were beginning to present a military threat.

Thompson was most concerned about Japan, which he described as “a nation highly self-conscious, well unified and organized, with leaders who have learned the game of politics in the West and who are in a position to make demands with the full force of the nation behind them.”¹⁹⁸ On the basis of demographic transition theory, Thompson predicted that redistribution of the Earth’s land was inevitable, and he recommended that it be done peacefully to prevent it occurring violently. An advocate of immigration restriction in the U.S., Thompson proposed that Japanese and other East Asians be allowed access to the tropical regions of Australia. Ideally, Australia would “turn this area over voluntarily to some people fitted to develop its agriculture and other resources in the hope of thus making an ally if trouble should ever arise regarding the retention of the temperate areas.” He recognized the unlikelihood of this outcome, given the extreme racism prevalent in Australia, and suggested as a second possibility “to admit the coloured labour necessary to exploit this region under the direction of Australians as a dominant landowning class.”¹⁹⁹ Thompson’s suggestion was imbued with the racist theories of the time. He argued that the Japanese, having “a predominant strain of Malay blood in them,” were well suited to developing tropical lands but not temperate ones, while whites were suited to temperate but not tropical lands.²⁰⁰ His plan therefore reserved the temperate regions of Australia for white settlement, though he did

¹⁹⁷Thompson, “Population,” see n. 183, 8.

¹⁹⁸Thompson, *Danger Spots in World Population*, see n. 196, 67-68.

¹⁹⁹Ibid., 91.

²⁰⁰Ibid., 43.

argue that Australia would have to relax the immigration policies that only permitted Anglo-Saxon settlement and begin recruiting from Southern and Eastern Europe, particularly Italy and Germany, which were also experiencing the pressures of industrialization and attendant population growth. Thompson similarly recommended that Great Britain open its East African colonies to South Asian settlement so as to foster industrialization in India.

Thompson did not perceive population growth in Asia as a Malthusian threat: although populations were growing there, population growth was slowing in North America and Australia, both of which had vast tracts of sparsely settled land, and population remained quite sparse in South America and Africa. At the global level, he did not predict overpopulation. However, his concern that transitional populations might have the military strength to expand their territories by force, while post-transitional populations lacked the numbers to defend their territories, indicates the continuing perception of population as a source of national strength. Moreover, he saw the demands for land among transitional populations as reflecting not subsistence needs, but rather the demands of industrialization. Thompson's concern about population growth in Asia was not a Malthusian concern about population outstripping food supply, but rather an economic concern about industrializing societies requiring more resources — both to feed their larger populations and to feed their nascent industries — and a geopolitical concern about the possibility of industrializing countries using violent means — supported by their large populations — to take the resources they required.

Conclusion

Sanger's 1927 conference on population science, with which this chapter began, was one of the foundational moments of twentieth-century demography. At that point, there was no such thing as population science. The men and women who attended the conference — a group that included Sanger, Pearl, East, Dublin, Kuczynski, and Thompson — were biologists,

sociologists, statisticians, economists, doctors, birth control activists, and eugenicists. By the end of the 1927 conference, many of its participants had agreed to form an international professional organization for population science, officially established in the following year as the International Union for the Scientific Investigation of Population Problems (IUSIPP), which will be discussed at greater length in Chapter Two. As this chapter has demonstrated, these actors held a variety of ideas about what populations were, how they changed, and what political problems future population change might pose. Each had their own political sympathies, and the methods and measures they wielded — many of which would become staples of the demographer’s toolbox later in the century — were developed within debates about such population-related concerns as poverty, immigration, birth control, eugenics, and empire. Population analysis was therefore always already imbued with population politics, though it is difficult to tease out whether the politics of particular population observers and scientists either preceded and informed or followed from and were informed by their analytic methods.

This chapter has demonstrated that participants in the conference had very different ideas about what constituted “the population problem.” For Pearl, who had helped Sanger organize the conference and who presented his logistic law of population growth in its first session, the problem was the impending overpopulation that was a foundational assumption of his logistic law (and which, he claimed, was predicted by his projections). While East advocated for eugenic birth control and immigration restriction programs as means of preventing overpopulation, Pearl advocated for them as a way to improve the quality of the saturation population he predicted. Dublin viewed Pearl, East, and other neo-Malthusians as the cause of “the population problem,” as their predictions of overpopulation incited nativist anxiety and agitation. These predictions had also contributed to the passage of immigration restrictions in the U.S., which Dublin cautioned would lead to a cessation of population growth and economic growth. For Kuczynski, “the population problem” was the rapid decline in fertility experienced by countries in Western Europe, while fertility in East-

ern European countries remained high, threatening to increase the power of Eastern Europe — and particularly the U.S.S.R. — relative to Western Europe. For Thompson, “the population problem” was the growth of population in newly-industrializing countries at a time when most of the world’s land was under the control of already-industrialized countries with populations nearing stationarity. He predicted that industrializing countries would begin to demand more land to provide resources for industry, and that their growing populations would give them the power to seize that land violently, since the slower-growing populations of already-industrialized countries would not have the power to defend the territories they had claimed. While Pearl and East’s version of “the population problem” reflects the Malthusian theory that population growth strains resources, the versions of “the population problem” referenced by Dublin, Kuczynski, and Thompson reflect older understandings of population growth as the source of national strength and economic dynamism.

These competing versions of “the population problem” mapped onto two distinct analytic approaches, one guided by biological and Malthusian theories and the other guided by social scientific and pre-Malthusian theories. While proponents of the former endowed populations with emergent properties and attributed all population dynamics to subsistence availability, proponents of the latter viewed populations as aggregates of individuals, and attributed population dynamics to individual mortality, migration, and fertility, which they understood as being controlled by social, economic, and political factors, operating within biological limits. These two different forms of analysis gave rise to two competing methods of population projection, the logistic law and the cohort component model. While these two methods returned numerically-similar projections, their proponents understood these projections in very different ways, with biologists Pearl and Reed interpreting the slowing of population growth and eventual population stationarity as an indication of overpopulation and resource scarcity, and economist Pascal Whelpton interpreting it as a threat to economic growth and a potential cause of agricultural overproduction.

This chapter has explored the differences between these two analytic approaches, the

assumptions behind each, and the consequences of each for understanding, predicting, and intervening in population change. The following chapter will examine the institutionalization of the new field of demography between the wars, focusing on the IUSIPP and on the development of disciplinary institutions (journal, professional association, research and training center) for population science in the United States. This chapter has demonstrated that population science developed in tandem with population-oriented political projects, and that its analytic tools were imbued with the politics that inspired them and drew support from them. Chapter Two examines how demographers and demography's supporters asserted the scientificity of the new field by drawing boundaries between population science and some aspects of population politics, and explores how the location of those boundaries shaped the form and content of the emerging field of demography.

Chapter 2

Disciplining Demography Between the Wars

In 1928, scientists from North America, South America, Europe, and Asia, representing a variety of fields in the natural and social sciences, established the International Union for the Scientific Investigation of Population Problems (IUSIPP). As argued in Chapter One, at that time there was no coherent field of population science and nobody yet called himself a population scientist. Those involved in the observation and analysis of population disagreed over whether population was a biological or social object, and whether its analysis should use the methods and theories of the natural or social sciences. They discussed a variety of conflicting issues under the rubric of “the population problem,” including potential overpopulation, potential population decline, and changing population composition at both national and global levels.

Over the next ten years, those involved in the IUSIPP and their supporters began to build the institutional framework necessary to establish demography as an academic discipline, particularly in the U.S. and the U.K. Literary scholar Robin Valenza defines a discipline as

a field of study that has a recognized community of researchers who have in common most of the following: an agreed-upon name, a loosely identified object of knowledge, shared research goals, a finite set of methods of inquiry, a generally accepted intellectual tradition, a group of institutions that persist and remain stable over time (such as university departments and academic journals), a system for perpetuating the discipline by training new practitioners, a group of working concepts and rules for adding new rules and concepts, and an established manner for communicating their findings.¹

As the people who were coming to be known as demographers established the desiderata

¹Robin Valenza, *Literature, Language, and the Rise of the Intellectual Disciplines in Britain, 1680-1820* (Cambridge: Cambridge University Press, 2009), 5-6.

described by Valenza for their new field in the late 1920s and early 1930s, they drew boundaries between the emerging science of demography and the politics of population, asserting the scientificity of their field by separating it from some of the political causes that drew on population science for their legitimacy.

Efforts to draw these boundaries between the science and politics of population are examples of what Thomas Gieryn has termed “boundary work,” which he defines as “ideological efforts *by scientists* to distinguish their work and its products from non-scientific intellectual activities.”² As discussed in Chapter One, there was no *a priori* distinction between the science and politics of population. Indeed, as later chapters will demonstrate, that boundary has been in continual negotiation over the course of the twentieth century. Establishing professional associations, journals, research centers, and training programs for demography, moreover, required that the field enlist patrons, wealthy individuals and organizations for whose causes demography provided intellectual support. The field also needed clients, or users of demographic analyses whose use would move the findings of demographic research toward the status of accepted fact.³ The accumulation of patrons and clients are additional criteria for academic disciplines, as defined by sociologist Edward Shils. He argues that disciplines require “the organized support of the activity from outside the particular institution and the reception or use of the results of the activity beyond the boundaries of the institution.”⁴ Demography’s need for funding and for uptake gave its patrons and clients substantial power to shape the development of the field, including where its practitioners would draw the boundary between demography and population politics.

This chapter illustrates some of the earliest boundary-marking efforts that created demography, facilitated its institutionalization as an academic field, and placed it in the realm

²Thomas F. Gieryn, “Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists,” *American Sociological Review* 48, no. 6 (1983): 781–795, 782, emphasis in the original.

³Latour describes the types of citations that build credibility for scientific findings as “positive modalities.” Latour, *Science in Action: How to Follow Scientists and Engineers Through Society*, see n. 15, 22–23.

⁴Edward Shils, “Tradition, Ecology, and Institution in the History of Sociology,” *Daedalus* 99, no. 4 (1970): 763.

of the social sciences between the wars. I begin with the establishment of the IUSIPP and the ways in which its members negotiated the emerging population politics associated with the rise of fascism in Europe. I then turn to the United States, where the scientists introduced in the previous chapter established the Population Association of America (PAA), which has served ever since as demography's largest professional association. I examine how demographers associated with the PAA promoted their expertise to the U.S. government in the 1930s, just as the New Deal administration began to take increased responsibility for social and economic planning. I argue that government support for this work helped to promote the cohort component method of population projection — described in Chapter One — over its competitor, the logistic projection method. I contend further that the use of population projection for social planning and the growing ascendancy of the cohort component method contributed to the designation of demography as a social science by the end of the interwar period.

Through discussion of the founding of the PAA, I explore the relationship between the PAA, the eugenics movement, demography's main interwar patron, the Milbank Memorial Fund, and its main interwar clients, the American Eugenics Society and the Eugenics Society of Great Britain. I contend that eugenics and demography developed a mutually supportive relationship during this period, with demography relying on the eugenics movement for funding, and the eugenics movement relying on demography for scientific legitimacy, particularly as it sought to distance itself from the increasingly genocidal Nazi population programs, and as its supporters attempted to establish a new “reform” or “free market” eugenics program that worked through the universal availability of birth control. Although this chapter focuses on the institutional history of demography in the U.S., I will also discuss the establishment of the Population Investigation Committee in the U.K. to demonstrate the close relationship between eugenics and demography on both sides of the Atlantic between the wars. I argue that these relationships structured the establishment of demography's first graduate training program, the Office of Population Research at Princeton University, and shaped the Office's

research agenda.

2.1 International Population Science and European Population Politics

The 1927 World Population Conference, discussed in Chapter One, was initially proposed by American birth control activist Margaret Sanger as one of a series that her American Birth Control League (ABCL) had sponsored to promote the medical and scientific legitimacy of birth control since its establishment in 1921. However, ABCL board member and Johns Hopkins University biologist Raymond Pearl, who had famously developed the logistic law of population growth and the logistic projection method earlier in the decade, suggested that the 1927 conference focus specifically on population problems rather than birth control, that it be limited to scientists and purged of propaganda, and that it serve as the basis for the formation of an international association of population experts.⁵ Perhaps recognizing that the study of human population exceeded the field of biology, Pearl hoped this conference would initiate an interdisciplinary organization for the scientific study of human population dynamics. Sanger agreed to these changes, believing that the development of a science of population would provide her with an additional platform from which to argue for the benefits and necessity of birth control. Sanger still played a prominent role in the organization and execution of the conference, and even edited its published proceedings, but assured attendees that the meeting would be strictly scientific, and that “any mention of birth control or Malthusianism would be forbidden.”⁶ By organizing the conference in this way, Sanger and Pearl drew the boundary between population science and population politics between themselves, excluding birth control (Sanger) from the new science of population. The conference laid the groundwork for the IUSIPP, which initially defined population science in opposition to the politics of birth control. Over the next decade, however, members of the

⁵Raymond Pearl to Clarence Cook Little, 1926, “IUSIPP #17 — C.C. Little,” box 15.

⁶Richard Symonds and Michael Carder, *The United Nations and the Population Question, 1945-1970* (New York: McGraw-Hill, 1974), 12.

IUSIPP found themselves continually defining demography against a changing landscape of population politics, particularly as new fascist governments in Germany and Italy began to engage population in their geopolitical strategies, calling on demography in general, and the IUSIPP in particular, to provide their population programs with scientific legitimacy.

As the founder of the IUSIPP, Pearl also became its first president. He modeled the organization on existing international unions in other scientific fields, as an association of national committees rather than individual scientists.⁷ Initially, the IUSIPP was comprised of committees representing Argentina, Australia, Belgium, Brazil, Canada, Czechoslovakia, Denmark, France, Germany, Great Britain, Greece, Italy, Japan, the Netherlands, Norway, Poland, Russia, Spain, Sweden, Switzerland, and the United States.⁸ As might be considered fitting for an organization devoted to the study of population, the IUSIPP assessed dues from and accorded voting power to each national committee on the basis its country's population. If a committee so desired, it could increase its voting power (but also its dues) by including the populations of its non-self-governing colonies. The IUSIPP invited self-governing colonies, such as Australia, to form their own national committees and pay dues independently.⁹ Other than Pearl, the IUSIPP's leadership was drawn entirely from Western Europe: Corrado Gini of Italy, Bernard Mallet of Great Britain, and Léon Bernard of France served as the organization's vice presidents.

Countries formed the organizing unit of the IUSiPP because, regardless of what "the population problem" actually *was*, the IUSIPP's founders considered it a problem for countries because countries managed, counted, and benefited from populations. As discussed in the Introduction, populations were defined by censuses, and only states had the power to carry out these universal, individual, instantaneous, and periodic enumerations. In 1931, economist A.B. Wolfe described demography in the *Encyclopedia of Social Science* as "the

⁷Raymond Pearl to Edwin B. Wilson, 1930, "IUSIPP #6," box 14.

⁸International Union for the Scientific Study of Population, *The IUSSP in History* (International Union for the Scientific Study of Population, 1985).

⁹"The International Union for the Scientific Investigation of Population Problems: Its Foundation, Statutes, Work, and Regulations," n.d., folder 13, box 3.

numerical analysis of the state and movement of human population inclusive of census enumeration and registration of vital processes and of whatever quantitative statistical analysis can be made of the state and movement of population on the basis of fundamental census and registration data.”¹⁰

Most of the studies presented at IUSIPP meetings and printed in its publications were specific to the investigator’s own country, but the IUSIPP’s founders viewed the organization as a forum in which representatives of different countries could discuss common problems and forge common solutions. They expressed their hope that “the experience of one country can be placed at the disposal of others and the researches undertaken in each of them pooled for the advantage of all.”¹¹ Meeting participants included representatives of government statistical offices as well as research scientists. Yet the founders of the organization recognized that population questions exceeded the state, as people could not be fully contained within states. The movement of people across borders was increasingly contested between the wars, as governments began to exert greater control over entry and exit. Therefore, the founders of the IUSIPP recognized that “in some cases, such as that of migration, co-operation between nations in research, and even in action, may be essential.”¹² The International Labour Organization (ILO) — established as part of the peace agreement ending World War I to represent the needs of the world’s workers — was engaged in the coordination of immigration as a solution to national and international political tensions. Delegates from the ILO participated in the IUSIPP, indicating the imbrication of science and policy in the area of international migration.¹³

Although the founders of the IUSIPP acknowledged the political nature of population problems and their solutions, they disavowed any political bias on their own part, committing the Union to “confine itself strictly to scientific investigations and to refuse to enter

¹⁰Quoted in Walter Willcox, *Studies in American Demography* (Ithaca: Cornell University Press, 1940), 510.

¹¹See n. 9.

¹²Ibid.

¹³For the ILO’s work on immigration, see D. Christie Tait, “International Aspects of Migration,” *Journal of the Royal Institute of International Affairs* 6, no. 1 (1927): 25–46.

upon religious, moral or political discussions or, as a Union, to support a policy regarding population of any sort whatever, particularly in the direction either of increased or diminished population.”¹⁴ The founders did, nonetheless, intend to influence population policy at the national level through their research. The organization’s declared aim was to “play a great part in the collective elucidation of problems which in many countries are already felt to be of supreme importance to the welfare of their populations,” and thereby “substitut[e] rational action scientifically grounded for the policies of the demagogue and the mob.”¹⁵ Its founders, viewing themselves as service intellectuals, intended the IUSIPP to promote research, publicize research results, “facilitate the establishment of common standards for the collection, tabulation, and analysis of data regarding human populations,” and “serve as a clearing house for the interchange of information about population” that might inform policy making.¹⁶

The establishment of the IUSIPP did not signal agreement about the valence or policy implications of population growth or the nature of “the population problem,” issues introduced in Chapter One. Pearl continued to express the neo-Malthusian concern that “the growing hordes of people on the face of the earth are constantly and increasingly adding to the economic and social difficulties of an already sufficiently harassed world.”¹⁷ He also acknowledged alternative population anxieties, noting that “the rapid fall of the birth-rate which is proceeding both in the United States and in Western Europe is welcomed by some as a solution... while by others it is looked upon as a danger to western civilization in an inevitable struggle with teeming yellow and black populations.”¹⁸ These two statements cover all of the versions of “the population problem” discussed in Chapter One: the neo-Malthusian concerns about overpopulation expressed by Pearl and Edward East, the anxieties about falling white fertility rates — particularly among the middle and upper classes and particu-

¹⁴See n. 9.

¹⁵Ibid.

¹⁶Ibid.

¹⁷Raymond Pearl, “President’s Report, Second General Assembly of the IUSIPP,” n.d., “IUSIPP #7,” box 14.

¹⁸See n. 9.

larly in North America and Western Europe — expressed by Alfred Lotka and Louis Dublin at the Metropolitan Life Insurance Company and by Robert Kuczynski at the Brookings Institution and the London School of Economics, and the concerns about growing nonwhite populations expressed by Warren S. Thompson of the Scripps Foundation for Research in Population Problems.

While the neo-Malthusian version of “the population problem” drew its support from U.S.-based scientists — mainly natural scientists — European scientists were concerned about the falling fertility rates in their own countries, and the loss of geopolitical power they feared fertility decline portended. The Great Depression, which began with the stock market crash of 1929, further stimulated fears about population decline, as policy makers and economists saw the falling birthrate as a major cause of the economic collapse.¹⁹ Fertility rates declined even further in North American and Western and Northern Europe during the Depression, further intensifying fears of depopulation.²⁰ These fears were expressed in a 1937 British radio series titled “The Population Problem — The Experts and the Public.” The series defined “the population problem” as the recent acceleration of the long-term decline in fertility, which the demographers who participated — including Kuczynski — attributed to couples’ selfishness, arguing that parents limited their fertility to maintain high living standards at the expense of weakening the nation both politically and economically.²¹

Between the world wars, governments throughout Western and Northern Europe enacted pronatalist measures. While measures in some countries, such as France and Belgium, sought to increase fertility across the board, measures in other countries, particularly Sweden and Germany, combined pronatalism with eugenics, aiming to increase the fertility of some segments of society while reducing that of others.²² Demographers working in government statistical offices helped formulate these policies and carried out the analyses that informed them and provided intellectual justification for them. Perhaps the most prominent of these

¹⁹Keynes, see n. 123.

²⁰Van Bavel, see n. 174.

²¹T.H. Marshall, *The Population Problem: The Experts and the Public* (London: Allen & Unwin, 1938).

²²For France, see Schneider, see n. 55; For Italy, see Ipsen, see n. 193; For Sweden, see Carlson, see n. 55.

government demographers was Corrado Gini, head of the Italian statistical office and vice-president of the IUSIPP, whose demographic scholarship increasingly began to reflect the fascist policies of Benito Mussolini at the end of the 1920s.²³

Despite the intentions of the IUSIPP's founders to keep the association free of politics, its organizational structure and the fact that many of its members worked in government statistical offices meant that the increasingly tense politics of population in Europe during the 1930s suffused the IUSIPP's activities. At the 1928 meeting that officially launched the association, its leaders decided that the Italian national committee, led by Gini, would host the organization's first Congress and General Assembly in Rome in 1931. The General Assembly was to be a business meeting where the next president would be elected and the Congress a scientific meeting with papers presented by the members of the IUSIPP national committees and other population scientists. As 1931 approached, however, the American, French, and British members of the Union became concerned that Gini's leadership role in the IUSIPP would lend scientific legitimacy to his increasingly fascism-inflected research.²⁴ More importantly, the IUSIPP's sources of financial support in the United States, which will be discussed at greater length in the following section, refused to support an association headed by Gini. Support from the U.S. was critical to the IUSIPP's existence because funds from other countries had not materialized.²⁵

Fearing that Gini's succession to the presidency of the IUSIPP would be inevitable at the 1931 General Assembly if it were held in Rome, and expressing concern about the quality of the scientific papers that might be accepted by the Italian national committee for inclusion in the Congress, Pearl and British vice-president Bernard Mallet decided to move the General Assembly to London. The Congress would go on in Rome as planned, but wholly under the auspices of the Italian national committee and without the imprimatur of

²³Ipsen, see n. 193.

²⁴Bernard Mallet to Raymond Pearl, Sept. 9, 1930, "Sir Bernard Mallet #10," box 18.

²⁵Raymond Pearl to Bernard Mallet, Aug. 11, 1930, "Sir Bernard Mallet #10," box 18; Raymond Pearl to Bernard Mallet, Aug. 21, 1930, "Sir Bernard Mallet #10," box 18.

the IUSIPP.²⁶ Only 50 people attended the London Assembly, with 12 from the U.S. and 24 from the U.K. In contrast, the Rome Congress drew 451 participants, though 190 were from Italy. Its 27 participants from the United States included Cornell University vital statistician Walter Willcox, sent by the U.S. government as its official representative, as well as Lotka, Dublin, Kuczynski, and Whelpton; eugenicist Charles Davenport; and sociologists Henry Pratt Fairchild of New York University, William Ogburn of the University of Chicago, and Pitirim Sorokin of Harvard University. Kuczynski presented on the calculation of the net reproduction rate, described in Chapter One, and Whelpton presented cohort component projections of the U.S. population.²⁷

Gini refused to attend or send delegates to the London Assembly, where Charles Close of the U.K. was elected president of the IUSIPP and where it was decided that the next Assembly and Congress would be held in Berlin in 1934. As 1934 approached, however, the leaders of the British, French, and U.S. national committees of the IUSIPP worried that, under the control of the German national committee, the 1934 Congress would offer scientific legitimacy to German population policy, which by then had combined pronatalism with eugenic sterilization and genocide. The 1934 meeting was postponed to 1935 in the hope of coming to a solution, but none was found. Instead, the IUSIPP again disassociated itself from the Congress, which was boycotted by the U.S. and U.K. committees and dominated by Nazi population propaganda.²⁸ British demographer David Glass, who attended the Berlin Congress as a delegate of the British Eugenics Society, reported in the *Eugenics Review* that the content of the presentations did not conform to the scientific standards set by the IUSIPP, and that the overriding theme was “race prejudice.”²⁹

²⁶For the controversy surrounding the 1931 Congress and Assembly, see folders “Corrado Gini #4” through “Corrado Gini #7,” box 8 and folders “Sir Bernard Mallet #10” through “Sir Bernard Mallet #13,” box 18, Raymond Pearl Papers, American Philosophical Society.

²⁷G.H.L.F. Pitt-Rivers to Raymond Pearl, Oct. 6, 1931, “IUSIPP #8,” box 14.

²⁸Although there was no official U.S. representation at the Congress, Frank Hankins represented the U.S. at the General Assembly. Frank Lorimer, “Circular letter to members of the Population Association of America,” June 20, 1935, “PAA #1,” box 22.

²⁹David V. Glass, “The Berlin Population Conference and Recent Population Movements in Germany,” *Eugenics Review* 27, no. 3 (1935): 208.

Glass's review indicates that the U.S. and U.K. committees of the IUSIPP drew the boundary between the science and politics of population at the emerging distinction between eugenics and scientific racism. As Elazar Barkan has documented, intellectuals in the U.S. and the U.K., while maintaining their faith in the idea of social improvement through the control of reproduction, began to discredit scientific theories of racial difference between the wars.³⁰ As will be discussed in detail later in this chapter, a generational shift in the eugenics movement in the U.S. and the U.K. brought to the fore new leaders — Frederick Osborn in the U.S. and Carlos Blacker in the U.K. — who sought to increase the scientific legitimacy of eugenics by purging it of its overtly racist content.³¹ In 1937, the IUSIPP finally held its first official Congress in Paris, sponsored by the French national committee and organized by its leader, Adolphe Landry, after thorough vetting by the U.S. and U.K. committees, but without participation by the Italian or German committees. Debates between the national committees of the IUSIPP over the location of the boundary between the science and politics of population, together with mounting geopolitical tensions, contributed to the dissolution of the IUSIPP after the 1937 meeting.

2.2 Funding for Demography and the Politics of Population in the United States

Pearl had secured initial funding for the IUSIPP from the Milbank Memorial Fund (MMF), a public-health oriented charitable organization based in New York. The MMF supplied the necessary funds on the condition that the IUSIPP would soon be able to support itself on dues paid by its constituent national committees. This section discusses the MMF's financial and institutional support for demography between the wars, and traces the establishment of the Population Association of America (PAA) as the U.S. national committee of the IUSIPP.

³⁰Elazar Barkan, *Retreat of Scientific Racism: Changing Concepts of Race in Britain and the United States Between the World Wars* (New York: Cambridge University Press, 1992).

³¹Alison Bashford has effectively described the ease with which eugenics and antiracism coexisted in the late interwar and early postwar periods. Bashford, see n. 10.

I argue that negotiations over the establishment of the U.S. committee of the IUSIPP were also negotiations over the boundary between the science and politics of population, and over whether population analysis should be the work of natural or social scientists. The story of the PAA's founding elucidates the relationship between demography and eugenics in the United States, and undergirds discussion of the establishment of the first university graduate training program for demography in the U.S.

2.2.1 Finding Patrons for Demography

After establishing the IUSIPP, Pearl turned to the Rockefeller Foundation for funds to pay the dues of the U.S. national committee. The Rockefeller Foundation's chairman, John D. Rockefeller Jr., was sympathetic to both demography and birth control legalization, but the Foundation's trustees would not support any non-scientific population-related endeavor. In order to ensure that the Foundation's funds would be used for scientific purposes, the trustees agreed to support the IUSIPP only through the National Research Council (NRC) and the Social Science Research Council (SSRC), with the understanding that NRC and SSRC members would jointly form the U.S. committee of the IUSIPP.³² This plan meant that the U.S. committee would comprise both natural and social scientists.

Pearl and East were both members of the NRC, and nominated themselves to the joint committee. Despite his earlier claim of human population growth for the field of biology, Pearl welcomed members of the SSRC to the committee "for the reason that traditionally many more aspects of the population problem fall into the social sciences."³³ This plan faltered, however, when Pearl's friend and rival Edwin Wilson, a mathematician at Harvard University and then-president of the SSRC, refused to participate. Wilson explained his recalcitrance by listing the multiple and conflicting concerns of SSRC members: that population could not cohere as a unified field of inquiry, that population science could not be

³²Raymond Pearl to Edward M. East, 1929, "E.M. East #8," box 7.

³³Raymond Pearl to Wesley C. Mitchell, Mar. 6, 1929, "SSRC #3," box 25.

disentangled from population politics, that Pearl's approach was too biologically deterministic, and that population was really a biological issue and should be left to the biologists.³⁴

This episode demonstrates that there is nothing natural or obvious about its present classification as a social science. The faltering of the plan for the U.S. committee indicated that, while social and natural sciences each claimed primacy for biological or social factors as determinants of population change, as discussed in Chapter One, each at times tried to hand population over to the other. Wilson's refusal to allow the SSRC to participate in the IUSIPP's U.S. committee suggests his agreement with the SSRC member who argued that population was a biological question. However, in response to Wilson's refusal, Pearl too tried to relinquish control over the emerging science of population, offering to let SSRC members form the entirety of the U.S. committee, and even to step down as IUSIPP's president, effectively turning population over to the social sciences, if that would increase Wilson's willingness to participate. Wilson responded that he had little interest in population matters and that the members of the SSRC who were interested in population, including Walter Willcox, had little respect for the work being pursued by those affiliated with the IUSIPP, including Pearl, East, Dublin, Lotka, Thompson, and Whelpton.³⁵

Pearl and Wilson were still in the midst of negotiations about forming the U.S. committee on the eve of the IUSIPP's 1931 General Assembly. Recognizing that he would have little legitimacy as president if his own country did not send a committee, Pearl returned to the Milbank Memorial Fund to request support to form the U.S. committee independently of both the NRC and the SSRC. The MMF, to which Willcox served as an advisor, agreed to do so if Dublin chaired the committee.³⁶

Originally called the Memorial Fund Association, the Milbank Memorial Fund was established in 1905 by Elizabeth Milbank Anderson, with family money from investments in

³⁴Edwin B. Wilson to Raymond Pearl, July 11, 1930, "IUSIPP #6," box 14; Edwin B. Wilson to Raymond Pearl, Aug. 18, 1930, "SSRC #5," box 25.

³⁵See correspondence between Wilson and Pearl, folder "IUSIPP #6," box 14, Raymond Pearl Papers, American Philosophical Society.

³⁶Raymond Pearl to Edwin B. Wilson, Nov. 4, 1930, "IUSIPP #6," box 14.

the Borden Company, to promote public health and social welfare in the U.S. The MMF began to involve itself in population-related issues at the insistence of board member Thomas Cochran, who argued that the MMF would be continually fighting an uphill battle against sickness and poverty if the people it served did not have adequate access to contraception. Cochran took the standard neo-Malthusian position described in Chapter One: with smaller families, the poor would not have to stretch their resources as far, and with a smaller proportion of the population in poverty, the MMF could do more for each of those impoverished people and philanthropists could invest more of their wealth in other causes.³⁷

Milbank Memorial Fund director John Kingsbury, an admirer of Margaret Sanger, supported Cochran's suggestion. However, given the still-controversial nature of contraception, and the fact that it remained illegal in several states, the MMF began its work in the population field with investments in research, with the idea that findings would provide intellectual support for the provision of contraceptives to poor Americans. In 1928 the Fund hired Edgar Sydenstricker, former statistician of the U.S. Public Health Service, as director of research. Between 1928 and 1931, Sydenstricker hired Frank Notestein and Clyde Kiser to carry out research on population, focusing on differential fertility, the then-current phrase to describe the higher fertility of some segments of the population — usually the poor or foreign-born — relative to others — usually the middle/upper classes or native-born.³⁸ Notestein was an economist who had completed his Ph.D. at Cornell University in 1927 under the direction of Walter Willcox, and Kiser was a sociologist who had completed his Ph.D. at Columbia University under the direction of Robert Chaddock. Willcox and Chaddock had both been students of Franklin Giddings, the first full professor of sociology at Columbia University

³⁷Cochran's preferred cause was Philips Andover Academy. He had graduated from Andover in 1890 and, after earning a sufficient fortune in banking, as a partner at J.P. Morgan, became a major benefactor of the school, with donations totaling \$10 million between 1907 and 1931.

³⁸Research performed by Notestein and Kiser at Milbank includes: Sydenstricker and Notestein, see n. 95; Frank W. Notestein, "Differential Age at Marriage According to Social Class," *American Journal of Sociology* 37, no. 1 (1931): 22–48; Frank W. Notestein, "The Decrease in Size of Families from 1890 to 1910," *Milbank Memorial Fund Quarterly* 9, no. 4 (1931): 181–188; Clyde V. Kiser, "Fertility of Social Classes in Various Types of Communities of the East North Central States in 1900," *Journal of the American Statistical Association* 27, no. 180 (1932): 371–382; Clyde V. Kiser, "Fertility of Harlem Negroes," *Milbank Memorial Fund Quarterly* 13, no. 3 (1935): 273–285.

and in the United States, and a pioneer of the use of quantitative data and analysis in sociology.³⁹ The MMF also made grants to Raymond Pearl to study the prevalence and efficacy of contraceptive use at the population level.

Much of Notestein, Kiser, and Pearl's research for the MMF was published in the *Milbank Memorial Fund Quarterly*, one of the major outlets for demographic research between the wars, or presented at Milbank's annual population symposia.⁴⁰ Pearl presented the results of his research on the efficacy of contraceptive use at the 1934 Milbank symposium on population. Contrary to his expectation, described in Chapter One, that use of birth control by couples would have little to no effect on aggregate population growth, his research for the MMF indicated that, in the aggregate, women who used birth control experienced lower fertility rates during periods of use than they did during periods of non-use, suggesting the influence of human agency on population dynamics.⁴¹ Pearl announced that "this evidence destroys the basis of most of my life's work," and subsequently renounced his logistic law of population growth.⁴² Although he had long advocated the legalization of birth control as a eugenic measure, he began to promote it as a means of poor relief, arguing that "poverty and unemployment are being encouraged by the national policy of prohibiting the free dissemination of scientific birth control information."⁴³ The research that led to this announcement will be discussed at greater length later in the chapter.

The Milbank Memorial Fund's sponsorship of demographic research between the wars complicates a prevalent theme in histories of the modern social sciences: the increasing separation of social science from social reform. As historians of the social sciences have argued,

³⁹Many demographers in the twentieth century have been intellectual descendants of Giddings, as will be discussed at greater length in Chapter Five. Histories of the social sciences describe him as one of the founders of sociology, but neglect his foundational role in the history of demography.

⁴⁰Between 1928 and 1942, 20% of the journal's 299 articles were on topics that today would be classified as demography, including studies of fertility, contraception, mortality, and general population trends and policies.

⁴¹Raymond Pearl, "Contraception and Fertility in 2,000 Women," *Human Biology* 4, no. 3 (1932): 363–407.

⁴²Frank Lorimer, "The Development of Demography," in *The Study of Population: An Inventory and Appraisal*, ed. Philip M. Hauser and Otis Dudley Duncan (Chicago: University of Chicago Press, 1959), 160.

⁴³"Birth Control Ban Opposed (news clipping)," Mar. 14, 1934, folder 185, box 22.

social inquiry began as part of an effort to understand the social effects of such processes as industrialization and urbanization so as to ameliorate the conditions they produced. According to this narrative, as the social sciences were institutionalized in U.S. universities, their practitioners disavowed efforts toward social improvement, portraying their own work as scientific, objective, and masculine in contrast to the work of social improvement, which was also professionalizing at the time but as a specifically feminine activity outside of university social science departments.⁴⁴ However, even as the activities of social science and social reform were separated in terms of practitioners and institutional location, much of the funding for the social sciences continued to come from philanthropic sources, either directly or through the Social Science Research Council (SSRC). The SSRC is an independent organization established in 1923 to channel foundation money — initially that of the Rockefeller Foundation, the Laura Spelman Rockefeller Memorial, and the Spelman Fund — into social science research that would inform the charitable work of those funders.⁴⁵ In the early twentieth century, new general-purpose foundations, such as the Rockefeller and Russel Sage Foundations and the Carnegie Corporation, viewed their own work of social improvement as scientific, and sponsored scientific investigations of the social problems they broached in order to both inform and justify their interventions.⁴⁶ In order for social science to serve those purposes, the scientists themselves had to be objective and disinterested, and the interwar patrons of social science, particularly the Laura Spelman Rockefeller Memorial, promoted scientific and quantitative methods of social inquiry to bolster the apparent objectivity of the research they funded. At the same time, the funding structure in the social sciences guided research toward investigation of topics relevant to their patrons, who were highly invested in very specific portrayals of social conditions and their prospects for improvement. As Donald Fisher has put it, “the trustees and managers of the large foundations accept the

⁴⁴See, for example: Furner, see n. 81; Smith, see n. 74; Bannister, see n. 63; For the professionalization of social reform and its relationship to the social sciences, see: Fitzpatrick, see n. 69; Kunzel, see n. 68.

⁴⁵Fisher, see n. 72.

⁴⁶O'Connor, *Social Science for What? Philanthropy and the Social Question in a World Turned Rightside Up*, see n. 72.

social order and actively work toward solving social problems in order to maintain the status quo.”⁴⁷ The implication is that they support research that does the same. The demographic research sponsored by the MMF — focusing on differential fertility and the population-level effects of contraceptive use — justified the decision of the MMF’s trustees to include the provision of birth control in their public health programs as a neo-Malthusian measure to address poverty by reducing the number of poor people. Even as demographers attempted to shield their field from the politics of birth control, their financial dependence on the MMF allowed the organization considerable leverage to set the agenda of their field.

2.2.2 The Population Association of America: Between Eugenics and Birth Control

In addition to providing the funds for the U.S. national committee of the IUSIPP, the Milbank Memorial Fund also sponsored the establishment of a professional association for the emerging science of demography in the U.S. This section traces the origins of the Population Association of America (PAA), examining how the founders negotiated the boundary between science and politics so as to serve the needs of both birth control and eugenics.

The idea for the new organization originated with Margaret Sanger and New York University sociologist Henry Pratt Fairchild, a eugenicist and advocate of immigration restriction. Also present at the founding meeting were Dublin and Lotka, Pearl’s colleague Lowell J. Reed, Pascal Whelpton of the Scripps Foundation for Research in Population Problems, and Harry Laughlin of the Eugenics Record Office at Cold Spring Harbor, NY. In the article, “The Ideological Origins of the Population Association of America,” demographer Dennis Hodgson describes the organization as a coalition of eugenicists, immigration restrictionists, birth control activists, and population scientists, though he acknowledges that these categories blurred and overlapped, and that opponents of each political program were also involved.⁴⁸

⁴⁷Fisher, see n. 72, 11; also see Silva and Slaughter, see n. 96.

⁴⁸Hodgson, “The Ideological Origins of the Population Association of America,” see n. 58.

Given the broad array of concerns held by the participants, those who attended the meeting engaged in considerable negotiation over the scope of the activities the new association would undertake. The debates revolved around two questions: first, whether the organization should focus on the quantitative (size) or qualitative (eugenic) aspects of population; second, whether it should engage in research or advocacy. Although the users of the phrase “population quality” rarely specified what exactly they meant by this term, Pearl summarized it as a value “variously appraised through either racial composition, or by what the psychologists test under the designation ‘intelligence,’ or by sundry economic criteria, or finally by some overt or concealed combination of these characteristics.”⁴⁹ These debates essentially centered on the proper relationship between the new association, eugenics, and birth control politics.

Fairchild argued for the inclusion of both quantity and quality on that axis and both research and advocacy on the other. He declared that “population presents two aspects — qualitative and quantitative,” which he summarized with the question “what kind of people comprise a society and how many people are there in the society?” He bemoaned the fact that “the word population has been shifting away from its proper meaning as a term that should cover the whole field, to a restrictive quantitative meaning,” and stated his intention to “step in and check this degradation of a very significant word.” Fairchild also argued for the inclusion of both research and advocacy, with research informing advocacy for the manipulation of population. He declared it a propitious time for the founding of the new association because “with the development of economic science, political science, and geographical science, we are in a position to take up the phenomenon of population as one of the great factors in human welfare to be rationally manipulated, just as we manipulate the other factors in human relations.”⁵⁰

Opposition to including population quality — eugenics — within the scope of the new

⁴⁹Raymond Pearl, “The Populations of the New World — Trends and Characteristics,” in *Proceedings of the Eighth American Scientific Congress* (Washington, D.C.: U.S. Department of State, 1940), 132.

⁵⁰Henry Pratt Fairchild, “Report on Preliminary Conference on a Population Association for the United States,” Dec. 15, 1930, folder 12, box 3.

association came only from Harry Laughlin, who was apparently concerned about competition with his Eugenics Research Association. He argued that, since his organization was already engaged in research and advocacy with regard to population quality, and since the American Birth Control League was already engaged in advocacy with regard to population quantity, the new group should limit its activities to research on population quantity. Dublin also argued that the organization should limit itself to research — and especially that it remain free of the politics of birth control — recommending that it serve as “a clearing house for ideas and research” and “not be tied up with any propagandist movement.”⁵¹ Sanger too supported the separation of science and advocacy, and favored the clearinghouse model for the new association, believing that those working in advocacy needed “a representative group to whom we could come to seek instruction and advice in the population question,” and whose advice would be considered scientifically valid by those outside the birth control movement.⁵² In other words, the new association could have a stronger political influence if it did not have explicitly political aims.

The founders ultimately decided that the group would publish a journal to report the results of population research, but would not “express the results of its scientific researches in the form of endorsement or support of practical social programs or policies.”⁵³ As a result of this decision, they rejected the proposed name “National Association for the Scientific Study and Control of Population” on the grounds that population “control” was beyond the agreed-upon scope of the organization. They also worried that the word would arouse opposition, particularly among Catholics and Jews — Catholics because their religion forbade contraception and Jews because they feared they would be the target of control.⁵⁴ Instead, the group called itself the “Population Association of America” or PAA.

The PAA’s final boundary-marking moment occurred when the members of the organization chose officers at its first official meeting on May 7, 1931. Fairchild and Sanger,

⁵¹Fairchild, see n. 50.

⁵²Ibid.

⁵³Ibid.

⁵⁴Ibid.

with whom the idea for the organization had originated, had been nominated for president and vice president, respectively. As the group's founders had included both scientists and non-scientists, membership in the PAA was open to "all persons interested in population problems," regardless of their credentials or lack thereof.⁵⁵ One man present at the meeting, however, objected to Sanger's nomination, arguing that "the fortunes of the field would be advanced if the new Association were to guard its scientific nature and keep free from attachment to the birth control movement."⁵⁶ To "guard its scientific nature," this man — Frederick Henry Osborn — proposed that only scientists serve in leadership positions. Osborn, whose background will be discussed in the following section, was a supporter of Sanger and of the legalization of birth control more generally, and convinced her to refuse her nomination for vice president. Fairchild was still elected president of the PAA, but University of Chicago sociologist William Ogburn was elected first vice president and Robert Kuczynski second vice president. Ultimately, those present at the meeting agreed that the members of the U.S. committee of the IUSIPP should form a College of Fellows within the PAA as a select scientific group of advisers, from whom officers would be chosen.

The boundary work performed by the members of PAA at its founding in 1931 excised the politics of birth control from the new science of population. Over the next decade, the PAA would do some of the work of defining the new field of demography by identifying U.S. scholars engaged in population-related research, codifying a set of terms for vital processes, and launching a journal, *Population Index*, which served as a quarterly bibliography of demographic scholarship published in journals belonging to a variety of disciplines. As PAA members identified scholars as demographers, codified the field's jargon, and selected books and articles to include in the *Population Index* bibliography, they built and defined the field of demography.⁵⁷ But although these members excluded birth control as a political rather

⁵⁵Back matter, *Population Index*, volume 1, number 3, 1935.

⁵⁶Notestein and Osborn, see n. 151, 70.

⁵⁷For the census of population scientists, see "Minutes of a Joint Meeting of the American Committee of the IUSIPP and the PAA," 1932, "Alfred Lotka #5," box 17; For efforts to codify jargon, see "Organization for Research in Population," *Human Biology* 6, no. 1 (1934): 238; For *Population Index*, see Frank Lorimer to Raymond Pearl, Sept. 6, 1934, "PAA #1," box 22.

than a scientific topic, they included eugenics in the ambit of their new field. The following section will examine how Frederick Osborn enlisted population science in support of his new “reform” eugenics program that sought to keep eugenics relevant to modern society by purging it of its overtly racist elements.

2.2.3 Frederick Osborn and Princeton’s Office of Population Research: Science in the Service of Eugenics

Born in 1889 to a wealthy and well-connected family, Frederick Osborn was the son of William Church Osborn, who had, along with Henry Pratt Fairchild, been a founding member of the American Eugenics Society (AES) in 1926. Frederick, however, belonged to a new generation of eugenicists who sought to keep eugenics aligned with mainstream science as scientists distanced themselves from the scientific racial thought that was coming to be associated with the Nazi party in Germany.⁵⁸ By the mid-1930s, Osborn had attained control of the AES, which became a major advocate of what Daniel Kevles has termed “reform” eugenics. This new brand of eugenics, advocated by Osborn in the U.S. and by Carlos Blacker in the U.K., differed from mainstream eugenics in two ways. First, it advocated for eugenic selection *within* rather than *between* racial and socioeconomic groups. Second, it advocated a process of eugenic *self*-selection that worked through the supposedly uncoerced childbearing decisions of individual couples, rather than through selection made by some kind of governmental or scientific authority. In this context, “eugenic selection” refers to the designation of “superior” couples, who would contribute more children to the next generation, and “inferior” couples, who would contribute fewer children — or no children at all — to the next generation. This section will discuss both of these differences between reform and mainstream eugenics in detail, and their relationship to the emerging science of population.

⁵⁸Barkan, see n. 30.

Osborn's Free Market Eugenics

After making a fortune in the railroad and financial industries, Osborn retired from business in 1928 and installed himself as a research associate at the American Museum of Natural History, which was then under the direction of his uncle, Henry Fairfield Osborn. Frederick Osborn's only degree was a B.A. in English, which he earned at Princeton University in 1910. In order to advance his education while at the American Museum, Osborn pursued a course of reading recommended to him by anthropologist and eugenicist Clark Wissler, becoming an armchair expert in the scientific fields from which eugenics drew its theories.⁵⁹ Osborn also spent time as a research associate at the Eugenics Record Office (ERO) at Cold Spring Harbor, New York, under the direction of Charles Davenport and Harry Laughlin. Prior to the 1939 closure of the ERO, eugenics had the status of a science in the U.S. — as in the U.K. at the Francis Galton Eugenics Laboratory — and was nearly inseparable from genetics. As discussed in Chapter One, scientists at the ERO collected thousands of individual family trees in order to determine Mendelian hereditary patterns for “a wide variety of physical, mental, and moral traits in humans.”⁶⁰ Their work was strongly informed by the racism that pervaded the worldview of the white professional middle class in the U.S. For example, ERO eugenicists linked favorable traits, such as inventiveness, to the “Nordic races” and unfavorable traits, such as criminality, to other racial and national origins.⁶¹ The work of the ERO played a major role in Congressional hearings on immigration restriction in the early 1920s and in the passage of eugenic sterilization laws in 32 states prior to World War II.⁶² However, by the 1930s, theories that attributed individual social and mental characteristics to race and national origin were becoming passé, distasteful, and scientifically discredited,

⁵⁹“Frank W. Notestein, Interview with Anders Lunde for the PAA Oral History Project,” Apr. 27, 1973, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, 11.

⁶⁰Garland Allen, “The Eugenics Record Office at Cold Spring Harbor, 1910-1940: An Essay in Institutional History,” *Osiris* 2 (1986): 226.

⁶¹*Ibid.*, 246.

⁶²Allen, “The Eugenics Record Office at Cold Spring Harbor, 1910-1940: An Essay in Institutional History,” see n. 60, 248-249; Stern, see n. 60.

as biological bases for racial difference continued to elude scientific identification.⁶³ In an oral history interview later in his life, Osborn claimed that he had always viewed the work of the ERO as racist and “emotional rather than scientific.” He took credit for bringing the unscientific nature of the ERO’s work to the attention of its major sponsor, the Carnegie Institution of Washington, resulting in the ERO’s loss of funding and its ultimate closure.⁶⁴

By the time the ERO closed, the emerging science of genetics had begun to demonstrate that certain diseases were indeed inherited according to a Mendelian genetic pattern. However, efforts to identify genes that controlled social and character traits, and efforts to define “race” in biological terms, continued to fail. In 1927, Raymond Pearl published an article in *The American Mercury* attacking the assumed scientific basis of eugenic programs that sought to encourage the reproduction of successful individuals and limit the reproduction of unsuccessful individuals.⁶⁵ The article described a study he had undertaken of the fates of the fathers and sons of famous poets and philosophers to refute the idea that great men are either born of great men or sire great men. By demonstrating that famous poets and philosophers are no more likely to have accomplished fathers or sons than anyone else, he suggested the futility of encouraging large families among “superior” couples and small families among “inferior” couples. This statement reflected growing scientific consensus about Mendelian genetics, but was a sharp reversal of Pearl’s earlier belief that, that “for the welfare of the state or nation those stocks which are on the whole endowed with the best traits

⁶³Barkan, see n. 30; Allen, “The Eugenics Record Office at Cold Spring Harbor, 1910-1940: An Essay in Institutional History,” see n. 60, 250.

⁶⁴Garland Allen describes the type of work performed under Davenport and Laughlin at Cold Spring Harbor and the Carnegie investigation that led to the withdrawal of funds in Allen, “The Eugenics Record Office at Cold Spring Harbor, 1910-1940: An Essay in Institutional History,” see n. 60; Osborn took credit for that investigation in Isabel Grossner, “Oral History Interview with Frederick Osborn for the Columbia University Oral History Office,” 1967, Frederick Osborn Papers, American Philosophical Society, Philadelphia, PA, “Osborn - Biography #1,” box 3.

⁶⁵This was purely a scientific critique, as Pearl continued to advocate for eugenics as a political program. Pearl certainly shared the racism, classism, and anti-Semitism of his time, and these personal politics did not soften over the course of his life. In 1925 he described Gregory Pincus, who would later play a key role in the development of the birth control pill, as a “lazy Jew,” and in the same year suggested to a colleague that the National Academy of Sciences should take no further nominations from the mathematics section “until such time as they have somebody to offer who is neither a Jew nor an ass.” Raymond Pearl to Edward M. East, May 7, 1925, “E.M. East #5,” box 7; Raymond Pearl to Edwin B. Wilson, Mar. 7, 1925, “Edwin B. Wilson #2,” box 29.

should contribute more, many more, individuals to the next generation than should those stocks whose characteristics are on the whole bad.”⁶⁶ While some scholars have argued that this article signals Pearl’s abandonment of the political project of eugenics,⁶⁷ Pearl himself claimed otherwise. He was not withdrawing his support from eugenics, he explained in a letter to a colleague, but rather was trying “to make a more or less subtle distinction between eugenics with a good genetics foundation and eugenics with a bad genetics foundation.”⁶⁸

Osborn and the AES responded to Pearl’s critique and to the growing critique of Nazi eugenic policies in Germany by separating eugenics from genetics. On the one hand, the organization sponsored research in genetics to link physical, social, and character traits to genes whenever possible. Following World War II, Osborn promoted the inclusion of human genetics in medical school curricula, and genetic counseling in medical practice to encourage couples with genes that were known to predispose their children to specific diseases to consider those risks before starting their families. On the other hand, he continued to promote a eugenic program that sought to increase births to “superior” couples and limit births to “inferior” couples, but without claiming a basis for that program in the new science of genetics. He never argued that individual socioeconomic success was not genetically encoded, but he acknowledged that the science of genetics had not yet identified the relevant genes and alleles, and probably would not do so for some time.

Because there was no scientific evidence linking social and character traits to specific genetic markers, Osborn conceded that the American public was unlikely to consent to a program in which governmental or scientific authorities selected who would and would not reproduce. Moreover, such a program became increasingly distasteful as government decisions over life and death became associated with the genocidal Nazi regime in the 1930s, and with the authoritarianism of the postwar Soviet Union. For these reasons, Osborn

⁶⁶Pearl, 1908. Quoted in Robertson, see n. 12, 17.

⁶⁷Allen, “Old Wine in New Bottles: From Eugenics to Population Control in the Work of Raymond Pearl,” see n. 61; Ramsden, “Carving Up Population Science: Demography and the Controversy Over the ‘Biological Law’ of Population Growth,” see n. 83.

⁶⁸Raymond Pearl to Edwin B. Wilson, Dec. 17, 1927, “Edwin B. Wilson #2,” box 29.

advocated what I will call a “free market” eugenics program, according to which subtle mechanisms of social control would encourage “superior” couples to have larger families and “inferior” couples to have smaller families, without the parents in question even suspecting outside influences on their childbearing decisions. Osborn argued that such a program was critical to maintaining the strength of the U.S. population because the mortality decline that had resulted from industrialization and the concomitant rise in food security and sanitation had disrupted the process of natural selection. Osborn contended that, whereas previously the “inferior elements” of the population had died before reaching childbearing age, now nearly all children who were born lived long enough to reproduce. According to Osborn, the differential use of contraception by the professional classes only compounded the situation. As a replacement for natural selection, he called for a new type of conscious selection that would operate through birth rather than death, with the limitation of births among “the marginal economic groups” and the encouragement of large families among those of “fine blood strains.”⁶⁹

As this language indicates, Osborn conflated socioeconomic success with genetic capacity, contending that the former reflected the latter. However, he also contended that genetically superior individuals loved children and desired large families, while the selfishness of genetically inferior individuals translated into a dislike for children and a desire to have as few as possible. He argued that, in recognizing genetically superior individuals,

certain general tendencies seem evident. It is reasonable to suppose that these qualities would include a strong physique, good health, love of children, unselfishness, ability to get along with other people, compatibility of husband and wife, willingness to assume responsibility, and willingness to make sacrifices for the sake of the family. These are all socially valuable qualities. There is some evidence that these good qualities tend to go together and to be associated with intelligence more than with stupidity. Thus, it appears that under conditions of perfectly free choice, couples would tend to have children somewhat in proportion to the degree to which they possess the highly desirable qualities mentioned

⁶⁹Frederick Osborn, “The Development of Eugenic Policies,” 1935, “Frederick Osborn - Papers #5,” box 17; Frederick Osborn, “A Eugenics Program for the United States,” 1935, “Frederick Osborn - Papers #3,” box 17.

above as conducive to large families.⁷⁰

However, Osborn recognized that the costs of childrearing and the limited availability of birth control made it difficult for couples to have the number of children they desired.⁷¹ Osborn believed that these constraints produced a dysgenic distribution of births: those who, Osborn felt, *should* be having more children were also those most likely to use birth control because they were the ones with the foresight to limit themselves to the number of children they could support at a high standard of living. As a result, those who lacked this sense of responsibility had the most children, who presumably inherited this lack of responsibility through some yet-unknown genetic mechanism.

Osborn proposed numerous measures that would allow parents to have exactly the number of children they wanted, which — he argued — would translate into a more eugenic distribution of births between the “superior” and “inferior” segments of the population. These included some measures that genuinely would have helped everyone — free access to birth control and abortion — and some that would have reproduced and magnified existing socioeconomic hierarchies, such as child tax credits proportional to income and free university education for children of university graduates. Osborn justified these proposals by arguing that American society as a whole should bear more of the childrearing costs for those whose reproduction was considered socially beneficial.

At the same time, however, Osborn aimed to distance eugenics from class discrimination and racism by arguing that eugenic selection should occur *within* racial groups and socioeconomic strata, contending that “if we are to breed a constantly improving stock, it must be done by raising in every group available for reproduction a greater proportion of children among those couples who are above the national average of hereditary capacity, and in every group a lesser proportion of children among those members of the group who are below the national average in hereditary capacity.”⁷² For that reason, he maintained that “any effec-

⁷⁰“The Development of Eugenic Policies: A Memorandum by the American Eugenics Society,” *Eugenics Review* 29, no. 2 (1937): 120.

⁷¹*Ibid.*, 120.

⁷²Frederick Osborn, “Major Aspects of Eugenic Selection,” 1936, “Frederic Osborn - Papers #7,” box 17.

tive program of eugenics should therefore provide for selection within each of the regional, racial and occupational groups and within each of the broad socio-economic groups,” rather than between those groups, as had been the underlying mechanism of the ERO’s program.⁷³ Osborn argued that the variance in innate ability within these groups was greater than the differences in average ability between them, and that eugenic selection should therefore be based on individual ability rather than race or class. Osborn made this argument in the statistical language of the normal distribution, suggesting that “if curves for hereditary capacities of different groups were superimposed, we have every reason to believe that there would be a large amount of overlapping even between the most diverse groups.”⁷⁴ In order to encourage the development of “inborn ability” among children from lower socioeconomic strata, Osborn promoted the provision of free school lunches.

Osborn’s program did not rely exclusively on the supposedly-natural affinity for or aversion to large families that — he believed — stemmed from genetic superiority or inferiority. He also recommended that figures with social authority — particularly teachers, clergy, and medical professionals — be empowered to encourage “promising” couples to have large families and begin them early, and to encourage couples with less potential to practice birth control. Recognizing that genetic “quality” could not be measured directly, Osborn suggested that, within a given “group,” those charged with identifying “promising couples” could do so on the basis of the attractiveness of their homes. Osborn maintained that *within socio-economic strata* — people who had access to the same level of resources — the quality of a home “reflects not only the outward characteristics of the parents, but we are justified in believing that on the whole it is also an indication of their genetic qualities. The science of genetics will have to make many forward steps before a better measure of genetic quality can be made available.”⁷⁵

Because his program depended on the illusion of personal choice, Osborn saw the legal-

⁷³Osborn, “The Development of Eugenic Policies,” see n. 69.

⁷⁴Ibid.

⁷⁵Frederick Osborn, “Moral Responsibilities of Parenthood,” 1936, “Frederick Osborn - Papers #6,” box 17.

ization and diffusion of contraception as a prerequisite for eugenics. He became a strong supporter of organizations such as the American Birth Control League, even though these groups did not have an explicitly eugenic mission, and even though Osborn was not interested in birth control as a mechanism of empowerment for women or the poor. Nonetheless, he promoted birth control through these organizations rather than specifically as a eugenic tool since he was unsure “whether the interjection of the eugenic idea would hasten or retard public acceptance of the idea of pressure for birth control among the least adequate parents in our society.” He believed that universal family planning was “the first step towards a rational program of eugenics,” and felt that the “situation is so urgent that I am willing to let the program of eugenic education for birth control be secondary to the other reasons of birth control.”⁷⁶ As discussed in Chapter One, during the 1920s, Margaret Sanger aligned her movement for the legalization of birth control with eugenics because, at that time, eugenics had more scientific and popular authority. Osborn’s statements suggest that, by the 1930s, the situation had reversed, with the credibility of birth control growing and that of eugenics waning.

Princeton’s Office of Population Research

To further bolster the credibility of eugenics, Osborn aimed to associate it with the emerging science of demography. The earlier association of eugenics with genetics had become a liability for eugenics, as genetic science had been unable to validate the claims of either mainstream or reform eugenic programs. Demography could not speak to the science of genetic “superiority” either, but its practitioners did have insight into the relative fertility of different social groups, and — more importantly for Osborn — into the correlates of fertility within social groups. In a 1933 reflection on the state of eugenics, he attributed recent advances not to the work of the Eugenics Record Office or the Eugenics Research Association, but rather to the Population Association of America, which “has been able in

⁷⁶Frederick Osborn to P. S. Barrows, n.d., “Frederick Osborn - Letters on Eugenics,” box 17.

its two annual meetings to present a scientific background for discussion on the qualitative aspects of population — in other words, eugenics — which has not been approached in my experience by any of the Eugenics societies.”⁷⁷ He later described demographers as population engineers, contending that “soon people will probably decide that they want more or fewer people in the country in the next generation, or more of a particular kind and fewer of another kind...so they will turn to the demographer and ask him just how to get certain people to have more children and others to have fewer children.”⁷⁸ As will be discussed later in this chapter, Osborn would soon ask demographers exactly that question.

For Osborn, eugenics gained legitimacy from its basis in demography, but the legitimacy of demography depended on its scientific authority, a view that (at least partially) explains Osborn’s insistence that Sanger not be elected an officer of the association, despite his support for her movement to legalize and disseminate birth control. Throughout his life, Osborn remained a strong advocate of and fundraiser for demography or, as Notestein called him in 1969, “demography’s statesman.”⁷⁹ During the 1930s, Osborn obtained a grant from the Milbank Memorial Fund, of which he was a trustee, to establish a research center and graduate training program for demography within Princeton University’s School of Public and International Affairs (SPIA). The Princeton Office of Population Research (OPR) opened in 1936, with Notestein as director. Given that Osborn was a Princeton alumnus and would later become a trustee, and given that both his father and Albert Milbank were Princeton trustees and founders, funders, and advisors of SPIA,⁸⁰ the establishment of OPR at Princeton might seem overdetermined. However, Princeton was actually Osborn’s second choice: he had initially and unsuccessfully attempted to locate the population office at Harvard.⁸¹

⁷⁷Frederick Osborn, “Memorandum on Eugenics in the United States,” 1933, “Frederick Osborn - Papers #2,” box 17.

⁷⁸Frederick Osborn, “The Inevitable Enlargement of the Field of Demography - PAA Dinner Meeting, Providence, RI,” Apr. 25, 1959, “Frederick Osborn - Papers #19,” box 18.

⁷⁹Frank W. Notestein, “Frederick Osborn, Demography’s Statesman on His Eightieth Spring,” Apr. 10, 1969, Frank W. Notestein Papers, Seeley G. Mudd Manuscript Library, Princeton University, Princeton, NJ, folder 5, box 8.

⁸⁰Harold Dodds, “Albert G. Milbank and His Relationship to Princeton,” 1952, folder 22, box 26.

⁸¹When Osborn did approach Princeton about the possibility of establishing an Office of Population Research and hiring Notestein to direct it, he felt it important to comment on Notestein’s background,

In his 1936 report to Princeton president Harold Dodds, SPIA director Poole claimed that, even before Osborn had approached him, “the need for the closest possible study of the movements of population and their bearing upon social and political problems has long been felt.”⁸² Princeton would not, however, fund the new office. Dodds agreed to house OPR and hire Notestein as its director as long as Notestein’s salary and other administrative expenses could be obtained externally for at least the first five years. Initially, Notestein’s teaching load was to include “(1) a few lectures each year to the Juniors in the Economics Department, and (2) a one-term graduate course in Population Problems which would be open not only to graduate students but also to high-stand seniors in approved cases.”⁸³ An undergraduate course was added in 1939. Through 1970, these were the only demography courses offered at Princeton, though by the mid-1940s most OPR research staff taught at least part time.⁸⁴

The grant Osborn obtained from the Milbank Memorial Fund not only paid Notestein’s salary and the administrative expenses of OPR, but also purchased office furniture and calculating machines and paid the salaries of two research assistants, Irene Taeuber and Dudley Kirk. Irene Taeuber had entered the population field with her 1928 M.A. thesis at Northwestern University, “The Inheritance of Pigmentation in the American Negro,” which was later published by Raymond Pearl in his journal *Human Biology*. In a 1973 interview, Taeuber described herself as Pearl’s “discovery and protégé.”⁸⁵ She went on to complete a Ph.D.

informing SPIA director Dewitt Clinton Poole that Notestein’s “people come from Alma, Michigan, having moved there very early from the East where they had settled before the Revolution... It is quite a German community and the Notesteins are mostly farmers and teachers.” Dewitt Clinton Poole to Harold Dodds, Dec. 11, 1935, Wilson School of Public and International Affairs Records, Seeley G. Mudd Manuscript Library, Princeton University, Princeton, NJ, folder 12, box 9, given Notestein’s name, this statement was likely Osborn’s way of reassuring the Princeton administration that Notestein was not Jewish and not part of the recent wave of immigration from Eastern and Southern Europe.

⁸²Harold Dodds, “President’s Report, 1935-1936,” n.d., folder 2, box 4.

⁸³Dewitt Clinton Poole to Frederick Osborn, Dec. 24, 1935, Ansley J. Coale Papers, Seeley G. Mudd Manuscript Library, Princeton University, Princeton, NJ, folder 4, box 13.

⁸⁴“Princeton Presidents’ Reports 1936-1940,” n.d., folder 12, box 4; “Interview with Anders Lunde for the PAA Oral History Project,” 1979, folder 5, box 1; Harold Dodds to Joe Willits, Sept. 28, 1944, Rockefeller Foundation Records, Rockefeller Archive Center, Sleepy Hollow, NY, box A82, series 200s, record group 1.1.

⁸⁵“Irene B. Taeuber, Interview with Anders Lunde for the PAA Oral History Project,” Apr. 28, 1973, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, 75.

in sociology in 1931 at the University of Minnesota, where she studied with Francis Stuart Chapin, who had been a student of Franklin Giddings. Taeuber completed her education in the same year as her husband Conrad, also a sociologist engaged in population research. Irene Taeuber remained at OPR for the rest of her career and became the foremost authority in the United States on population dynamics in East Asia. In 1971, Notestein would describe her as “the star in OPR’s crown who must be on everyone’s list of the world’s first ten demographers.”⁸⁶ Dudley Kirk was a graduate student in sociology at Harvard University, studying with vital statistician Edward P. Hutchinson. His dissertation, completed in 1946, focused on interwar European migration. In 1947, Kirk became the first demographer to work for the U.S. Department of State.

The MMF also provided a fellowship, including tuition and a stipend, to one OPR graduate student each year.⁸⁷ The first Milbank Fellow was John Durand, who would become director of the U.N. Population Division in the 1950s. The Milbank Fellowship attracted to demography promising young scholars who did not necessarily have a strong interest in population. One of these scholars was Ansley Coale, who will figure prominently in later chapters, as he oversaw many of the most important developments in postwar demography and trained an entire generation of demographers. In 1988, PAA historian Jean Van Der Tak referred to Coale as the “father, grandfather, progenitor of the U.S. demographic scene,” and commented to Coale that it “sounds like (most of) the younger people in U.S. demography have been your students.” Coale replied that, on a visit to the University of Pennsylvania, where several of his former students were on the faculty, the graduate students declared him their “grand-mentor.”⁸⁸ Between 1960 and 1980, as an OPR faculty member, Coale trained five students who went on to become presidents of PAA.⁸⁹ Coale had entered graduate school

⁸⁶“OPR Anniversary Party,” 1971, folder 2, box 29.

⁸⁷See n. 84; Dewitt Clinton Poole to William Church Osborn, Apr. 4, 1936, folder 13, box 9; MMF to Dewitt Clinton Poole, Mar. 23, 1936, folder 21, box 15; “Statement of Account,” Oct. 24, 1939, folder 21, box 15.

⁸⁸“Interview with Jean van der Tak for the PAA Oral History Project,” 1988, folder 5, box 1.

⁸⁹These students were Paul Demeny, Samuel H. Preston, Albert I. Hermalin, Jane A. Menken, and Douglas S. Massey. See <http://www.emilyklancher.com/digdemog/paa/paatree.html>

at Princeton in economics in 1939 and was offered the Milbank Fellowship. As he told an interviewer in 1979, “I had no money so the only way I could go to graduate school was with a full ride. I was willing to have an interest in population in order to have a fellowship that would pay my way.”⁹⁰ In the postwar period, funding for graduate studies would be an important mechanism for recruiting promising students in sociology and economics into the field of demography, as will be discussed at greater length in Chapter Five. Other prominent demographers who were also Milbank fellows at OPR include George Stolnitz, Norman Ryder, Melvin Zelnik, Paul Demeny, and Al Hermalin.⁹¹ The Milbank Memorial Fund continued to provide this fellowship until 1968.

Upon its founding, OPR immediately became the main locus of demographic activity in the United States. The PAA frequently held its annual meetings there, and Irene Taeuber took over the editorship of *Population Index*. OPR’s financial relationship with the MMF continued into the 1970s and, as a result, Princeton demographers collaborated closely with Clyde Kiser, Milbank’s only demographer after Notestein moved to OPR, on projects related to differential fertility and contraception, which will be described in the final section of this chapter. As OPR’s founder, and as the liaison between OPR and its major funder, the MMF, Osborn wielded substantial influence over the OPR’s research program.

The Population Investigation Committee and the Eugenics Society of Great Britain

This section briefly discusses the institutionalization of demography in the U.K., which also occurred in the 1930s, to demonstrate that, on both sides of the Atlantic, this new science emerged with the strong support of the eugenics movement. In 1936, Carlos Blacker, whom Daniel Kevles has identified as Osborn’s British counterpart in the leadership of reform

⁹⁰Similarly, John Knodel developed an interest in population only after receiving the Milbank Fellowship, having entered graduate school in the Department of Sociology at Princeton without a clear research interest. Interview with John Knodel, 4-24-2012., see n. 84.

⁹¹“Milbank Memorial Fund Fellows at the Office of Population Research for the Period 1936-1968,” n.d., folder 6, box 7.

eugenics,⁹² established the Population Investigation Committee (PIC), together with zoologist/anthropologist A.M. Carr-Saunders, who had published a global history of population in 1922, and David Glass, a 1932 graduate of the London School of Economics (LSE). The stated aim of the PIC was “to promote and undertake research into quantitative and qualitative aspects of population questions.”⁹³ At that time, the most pressing questions were what had caused the recent decline in fertility rates, particularly among the professional middle classes, and how might it be reversed. Like OPR, the majority of the PIC’s funding was external, and for the first 10 to 15 years it came directly from the Eugenics Society of Great Britain.⁹⁴ Carr-Sanders was the PIC’s first chairman, followed by Glass, who would be the face of British demography until his death in 1978. Blacker was Secretary General of the Eugenics Society from 1930 to 1952 and Honorary Secretary of the PIC for nearly 40 years. Carr-Saunders and Blacker had both attended the 1927 World Population Conference and served on the U.K. national committee of the IUSIPP.⁹⁵

Eugenics in Great Britain stood to the left, politically, of American eugenics, with strong ties to Fabian socialism. It also had an institutional presence in British universities that it did not have in U.S. universities, first in the form of the Galton Laboratory for National Eugenics at University College London — described in Chapter One — and then in the form of the LSE Program in Social Biology, established in 1930 under the directorship of William Beveridge — architect of the postwar British welfare state — and with funding from the Rockefeller Foundation.⁹⁶ Beveridge defined social biology as “the application of biology to human society, to cover such topics as variation and heredity in man, selective immunity, relative importance of environmental factors in social structure and changes, questions of race

⁹²Kevles, see n. 60.

⁹³John C. Caldwell, “Demography and Social Science,” *Population Studies* 50, no. 3 (1996): 314.

⁹⁴E. Grebenik, “Demographic Research in Britain 1936-1986,” in *Population Research in Britain*, ed. Michael Murphy and John Hobcraft (London: Population Investigation Committee, 1991); G.H.L.F. Pitt-Rivers, “Report of the IUSIPP General Secretary to the General Assembly, Paris July 1937,” 1937, “IUSIPP #12,” box 15.

⁹⁵Grebenik, see n. 94.

⁹⁶For the Galton Lab, see Kevles, see n. 60; for the LSE Program in Social Biology, see Grebenik, see n. 94.

and class in relation to hereditary endowment, economic and biological tests of fitness.”⁹⁷ Zoologist-statistician Lancelot Hogben chaired the department and Robert Kuczynski served on the faculty. The PIC replaced the Program in Social Biology in 1937, when Beveridge and Hogben left LSE and were replaced by Carr-Saunders and Glass. From 1945 to 1978, Glass served as both Reader in Demography at LSE and Research Secretary of the PIC.

This section has argued that, even as population scientists self-consciously attempted to draw boundaries between demography and the politics of population, demography developed strong institutional relationships with a new free-market and purportedly non-racist form of eugenics. This new version of eugenics that emerged in the 1930s in the U.S. and the U.K. was an alternative to the older mainstream form of eugenics, which the emerging science of genetics had begun to discredit and was increasingly associated with the genocidal population policies of the Nazi state in Germany. While this section focused on demography’s interwar patrons, the next section turns to its clients, examining attempts by demographers to make their research relevant to the U.S. government during the Great Depression, and efforts by the U.S. government to make use of demographic research. The final part explores the use of demography by private clients, specifically those associated with the American Eugenics Society.

2.3 Finding Clients for Demography

While the previous section described the ways in which population scientists secured patrons for their activities, particularly the Milbank Memorial Fund in the U.S. and the Eugenics Society of Great Britain and the Rockefeller Foundation in the U.K., this section examines how demographers secured an audience for their work in the U.S. government during the Great Depression. I argue that the ways in which demography’s practitioners worked with and made their research relevant to government, together with OPR’s establishment in Princeton’s School of Public and International Affairs, solidified the field’s conceptual location in

⁹⁷Quoted in Grebenik, see n. 94, 6.

the social sciences rather than the natural sciences and established its orientation toward public policy. I will also demonstrate how demography's policy orientation helped the cohort component projection method become the standard method of population projection. As I will argue, the cohort component projection method was particularly useful for government because it facilitated the engineering of population size. Osborn, however, hoped to put demographers to work engineering the composition of the U.S. population as well as its size. To achieve this aim, he proposed and secured funding for OPR's first fertility survey, which would serve as a prototype for the postwar fertility surveys discussed in Chapter Five.

2.3.1 Selling Demography to the U.S. Government

As demography's professional association, one of the PAA's major activities is holding annual meetings, which serve as fora for the discussion of organizational business and sharing of research results. In 1935, however, at the suggestion of Henry Pratt Fairchild, a strong supporter of President Roosevelt and his New Deal administration, the PAA planned its annual meeting — to be held in Washington, D.C. — as a showcase for the presentation of demography to the U.S. government as a resource for policy making. This was not, however, the first contact between government and demographers in the U.S. In 1930, William Ogburn, director of research for President Hoover's Recent Social Trends project, a foray into social science as the basis for social engineering, had enlisted Warren Thompson and Pascal Whelpton to project the future population of the U.S. and write a monograph about the causes and consequences of past and future population dynamics. This section examines that project and then turns to the 1935 PAA meeting and the ways in which Roosevelt's New Deal government drew on the newly-available expertise of demography.

Recent Social Trends: The Cohort Component Model and Population Engineering

An engineer who saw in social science the potential to solve the growing social problems associated with the speculative capitalism of the 1920s, President Hoover launched the Recent Social Trends project in December of 1929. This project was a follow-up to the just-completed Recent Economic Changes project, which had surveyed economic activities in the U.S. during the 1920s, a period that would later be recognized as one characterized by unsustainable growth that culminated in the 1929 stock market crash and the ensuing Great Depression. Following the publication of the final report of the Recent Economic Changes project, Hoover appointed a committee, chaired by economist Wesley C. Mitchell, to commission scholarship in various areas of the social sciences, which would together paint a composite portrait of U.S. society, illustrating its problems and pointing to policy solutions. The project was funded by the Rockefeller Foundation, and University of Chicago sociologist William Ogburn served as research director.⁹⁸ Ogburn, a former student of Franklin Giddings who would become one of the first vice-presidents of the Population Association of America, included the study of population in the Recent Social Trends project. He engaged Thompson and Whelpton to write a chapter for the volume *Recent Social Trends*, published in 1934, and a monograph for the Recent Social Trends series, published in 1933. By including population in the project, Ogburn claimed its study for the social sciences; by selecting Thompson and Whelpton to carry out the research, he helped to standardize their cohort component projection method and their understanding of population as a social aggregate of individuals, described in Chapter One.

There are many reasons why Ogburn may have chosen Thompson and Whelpton over Pearl and Reed to project the future U.S. population and write the population components of the Recent Social Trends works.⁹⁹ First, the project was explicitly a social scientific one

⁹⁸Karl W. Bigelow, "Recent Social Trends," *The Quarterly Journal of Economics* 18, no. 1 (1933): 153.

⁹⁹An additional reason may have been that Thompson and Ogburn had both been students of Franklin Giddings at Columbia University and may have known each other in graduate school.

and, until his Milbank-funded research on the efficacy of birth control in the early 1930s, described above, Pearl continued to give priority to biological rather than social determinants of population dynamics. Whereas Pearl and Reed's research focused on identifying similarities in growth patterns between human and non-human populations, Thompson and Whelpton carried out substantial research on the *social* aspects of U.S. population dynamics, including racial composition, urbanization, fertility decline, and population aging. In contrast to Pearl and Reed's logistic projections, which provided only future total population size, Thompson and Whelpton's cohort-component projections also offered future age-sex structure and racial and urban/rural composition. Detailed information on age-sex structure would have been particularly useful to the government in planning for military mobilization, educational provision, and old age pensions, and would also have been valuable to industry: as Whelpton had argued in his initial presentation of the cohort component method in 1928, the population aging he predicted meant that continued industrial vitality would require that businesses design more products for elderly consumers and continue to employ workers past the age at which they would typically retire.

More importantly, however, the Recent Social Trends project served the needs of social engineering, and cohort component projections provided a conceptual and pragmatic basis for population intervention that logistic projections did not. Conceptually, the cohort component model both reflected and fostered a sense of openness about future population that sharply contrasted with the determinism of Pearl's logistic law. According to the logistic law, the trajectory of population growth was fully determined by the carrying capacity of the population's territory. Because the logistic law left no room for alternative patterns or speeds of population growth, the logistic projection method produced only one future scenario, which — Pearl argued — could not be altered by policy or even by disaster, such as war or epidemic. In contrast, the cohort component method modeled the independent effect of each component of population growth — fertility, mortality, and migration. Although each component was bounded by biological possibility — for example, by the fact

that people can't live forever and by the fact that women usually can't bear more than one child in any given year — they were otherwise open to possibility and manipulation. The cohort component model therefore allowed for the mathematical assessment of the effects of various types of policy interventions into fertility, mortality, and migration rates on overall population size and structure.

Reflecting the openness of the cohort component projection method to a range of future courses of population growth, Thompson and Whelpton's projections of U.S. population for the Recent Social Trends project included five possible future fertility trajectories, three possible mortality trajectories, and six possible immigration rates, with different scenarios combining these possibilities in different ways. All variants, however, included falling mortality and fertility and positive net international migration (more immigrants than emigrants).¹⁰⁰ These scenarios emphasized the dependence of overall population size and structure on the components of growth, and the accompanying text emphasized the dependence of the components of growth — particularly fertility and migration — on government policy. According to the cohort component model, fertility, mortality, and migration were the product of social, economic, and political circumstances — operating within biological limits — rather than predetermined forces of nature. In contrast to Pearl, Thompson and Whelpton acknowledged the unknowability of events that have not yet happened. In so doing, they offered up the possibility that future population, *because* it could not be known in advance with certainty, could be controlled, and because it could be controlled, could not be known in advance with certainty.

In contrast to the logistic projection method, which claimed to accurately *predict* future population, the cohort component method allowed users to *simulate* the effects of various fertility, mortality, and migration rates on future population size and structure. Typically, demographers using the cohort component projection method accompany their projections with a disclaimer, noting that the projections do not constitute predictions. As Whelpton

¹⁰⁰Warren S. Thompson and Pascal K. Whelpton, *Population Trends in the United States* (New York: McGraw, 1933).

stated in his 1928 article, cohort component projections “represent simply what will happen under certain conditions of immigration, birth-rates, and death rates,” and are therefore simply the arithmetical outcomes of a set of assumptions.¹⁰¹ Although Whelpton’s 1928 article included only one future course of population growth, cohort component projections produced since then, by Whelpton and by others, have typically included multiple variants, emphasizing both the non-predictive nature of the projections and the dependence of future population size on future vital rates.

Nonetheless, consumers of population projections — including governments, inter- and non-governmental agencies, businesses, and scientists — often demand a definitive statement about future population for use in other scientific models or as a basis for planning. To serve this purpose, Thompson and Whelpton offered a “medium” variant, which they designated as the most likely scenario, absent any major social, economic, or political upheavals (such as world war). As the use of cohort component projections spread, the production of a set of scenarios — including a medium or most likely variant — became standard practice. As a result, cohort component population projections are one of a class of objects that Star and Griesemer call “boundary objects”: “scientific objects which both inhabit several intersecting social worlds... *and* satisfy the informational requirements of each of them.”¹⁰² Boundary objects are those that may be recognized as the same thing by two different groups of users, but have different identities among those groups. Boundary objects serve as interfaces between different groups of actors, allowing them to work together despite — or, as Star and Griesemer might argue, *because of* — the fact that the common object has a different meaning for members of each group. Population projections are recognized as projections by both their producers and their users. However, their producers tend to view them as simulations — how a particular course of fertility, mortality, and migration would influence population size and structure — while their users tend to view them as the best available prediction of future population.

¹⁰¹Whelpton, “Population of the United States, 1925 to 1975,” see n. 144, 267.

¹⁰²Star and Griesemer, see n. 63, 393, emphasis in the original.

As boundary objects, population projections speak differently to different audiences. Their producers recognize that they are always statements about the effects of past, present, and assumed future dynamics on population. For consumers, however, population projections are simply statements about the future; consumers are often less interested in population for its own sake than in the population that will serve as the denominator for some other indicator or as an input to some other model. This distinction between producers and consumers is an observation about the division of labor; it is not meant to distinguish demographers from other scientists or from non-scientists. Indeed, demographers — particularly those working in government — can be both producers and consumers of population projections. Irene Taeuber recognized the boundary quality of cohort component projections as early as 1949, when she argued that projections served the needs of both academic demographers — who could use them to “survey the range of possibilities that lie ahead and contemplate philosophically the gyrations of the late ’forties” — and “the demographer in government work,” who “faces incessant demands from operating agencies for estimates of the population today, tomorrow, and next year.” Demographers working in government, she continued, had to cope with “the burden of giving categorical answers to queries as to which one of the Thompson-Whelpton estimates is ‘best’ ” because “the manufacturer, the business man, and the government official making per capita estimates require a specific population divisor.”¹⁰³

Logistic projections, because they specified an absolutely certain population at any future date, could serve as an excellent tool in planning *for* population. I define planning for population as using estimates of future population size (and structure, if available) as the basis for planning other activities, such as educational provision, old age pensions, factory locations, and the production and distribution of consumer goods. The medium variant in a set of cohort component projections also serves this purpose. But cohort component projections, because of the range of possibilities they permit for future population size and

¹⁰³Irene B. Taeuber, “Literature on Future Populations,” *Population Index* (1949): 193.

structure, can also be used for the planning *of* population. I define planning of population as using population projections to design interventions intended to influence future population size and/or structure. Two aspects of the cohort component model make it particularly useful as a tool for the planning of population. First, the model isolates the effects of each component of change (and, as discussed in Chapter One, is based on the theoretical assumption that these components operate independently of one another), illustrating how each one affects overall population growth and allowing for calculations of the effects of an adjustment in any of them on the aggregate outcome. Second, the model can be run in reverse, allowing the user to specify a future “level regarded as desirable, and then determine what would have to happen to fertility, mortality, and migration, if the assumed goal were to be achieved.”¹⁰⁴ That is, it can demonstrate the interventions necessary to produce an ideal population size and/or structure.

While the medium variant in a set of cohort component projections may employ the future rates their creator believes most likely to occur in the absence of policy intervention or drastic social, political, or economic change, cohort component projections that are explicitly intended as the basis for the planning of population are more likely to employ future rates that are avowedly hypothetical: either rates that must be achieved in order to produce the desired population size or composition or rates that must be avoided so as to avert an undesirable future population size or composition. Perhaps the earliest example of this use of the cohort component model is Dublin’s presentation at the 1931 meeting of the IUSIPP in London. Concerned about declining fertility and consequent population aging in the United States, which he described as “a possible threat to national survival” with “disturbing implications in the international distribution of the various races,”¹⁰⁵ Dublin used the cohort component projection method not to calculate the future population size and structure he expected would actually materialize, but rather to illustrate his concern, working up two scenarios

¹⁰⁴Taeuber, “Literature on Future Populations,” see n. 103, 4.

¹⁰⁵Louis I. Dublin, “The Outlook for the American Birth-Rate,” in *Problems of Population: Being the Report of the Proceedings of the Second General Assembly of the International Union for the Scientific Investigation of Population Problems*, ed. G.H.L.F. Pitt-Rivers (London: Kennikat Press, 1932), 115.

based on different hypothetical assumptions about the future course of fertility in order to demonstrate the effect that individual childbearing decisions had on population size and structure. In both scenarios, Dublin had the mortality rate fall to what he thought was its biological minimum by 1970, bottoming out at the same life expectancy of 70 years predicted by Whelpton in his 1928 article. In the first scenario, he similarly specified fertility rates reaching their minimum in 1970, an outcome he personally thought too optimistic; in the second scenario, fertility continued to decline through the year 2100. The second scenario resulted ultimately in a smaller and older population, which Dublin cited to warn of the potential dangers of falling fertility. He argued that

similar changes will undoubtedly occur in most other countries; but if certain of them, for example, Russia, and especially China and India, continue to increase their populations, or even maintain their present numbers, the question forces itself upon us what the international relations in the future will be like. In the last analysis, numbers must count, and in the future more than ever, when different political and economic ideals will strive for supremacy. The changes that are coming through the differential decline in the birth-rate will make a totally different kind of a world for our grand-children and our great-grand-children to live in. Those groups that will maintain higher rates will dominate the scene. There are signs that the era of ruling and of subject peoples is rapidly coming to an end.¹⁰⁶

Dublin's projections demonstrate that the population stationarity (non-growth) and aging he feared were not the necessary outcome of natural laws — as Pearl had argued — but rather were under human control through the control of fertility, and potentially under governmental control through the implementation of policies to increase fertility. Dublin's projections illustrate both the political anxieties underlying demographic research between the wars, and the utility of cohort component projections to argue for policies to influence future population change.

In their chapter for *Recent Social Trends* (1934) and in their monograph for the series, *Population Trends in the United States* (1933), Thompson and Whelpton presented all of their projections in neutral terms, and did not explicitly designate any as a scenario to

¹⁰⁶Dublin, "The Outlook for the American Birth-Rate," see n. 105, 123-124.

be aimed for or avoided. Nonetheless, the accompanying text both described and encouraged the possibility of government intervention to shape the future population of the United States. They legitimized explicit government planning of population by arguing that government policy had always influenced population growth, stating that “though perhaps it is not generally realized, it is nevertheless a fact that the United States has had a definite and effective policy regarding the increase of population practically from the commencement of white settlement.”¹⁰⁷ The goal of that policy, they contended, was to increase and whiten the population of the U.S. through the encouragement of immigration from Northern and Western Europe, limitation of immigration from other regions, and prevention of the spread of contraceptive knowledge through such laws as the Comstock Act, which made it illegal to send contraceptive information or materials through the mail. Thompson and Whelpton offered policy solutions to the problems posed by the slowing growth and population aging they projected, and suggested specific policies to alter the size and composition of the future population they forecast. As an example of the former — policies to plan *for* population — they pointed out that rural areas would age more dramatically than would urban areas (as a result of the rural-to-urban migration of the young accompanied by declining fertility), and suggested that government should equalize the cost of old-age dependency across communities. As an example of the latter — planning *of* population — they suggested that

if it is believed that the present population is not too large, or that still further increase is needed, then the financial burden of raising the next generation, which is very unevenly distributed at the present time, should be redistributed so that those who raise the children will not be compelled to forego their reasonable share of the material enjoyments of life. If children, in reasonable numbers, are a national asset, the cost of rearing them should not be loaded so heavily on the rural population as is now being done.¹⁰⁸

Thompson and Whelpton’s projections demonstrated that declining fertility would slow population growth and promote population aging, which — they and others argued — threatened

¹⁰⁷Thompson and Whelpton, see n. 100, 126.

¹⁰⁸*Ibid.*, 171.

national security and economic vitality, and then proposed policies to prevent further fertility decline.

The 1935 PAA Meeting and the Census Class of 1940: Bringing Demography into Government

The demographers of the PAA continued to promote their work as a basis for policy making at the 1935 PAA meeting. Fairchild secured a grant for the meeting from the Rockefeller Foundation and invited representatives of several government agencies, expecting that the meeting would be “a chance. . . to impress the public with the importance of scientific research in population for national planning.”¹⁰⁹ In response to the Great Depression, an economic catastrophe resulting from unregulated capitalism, President Roosevelt (FDR), elected in 1932, had launched the New Deal to address the crisis through government spending and socioeconomic planning. The decision to hold this special “showcase” meeting in Washington, D.C. in 1935 likely reflects demographers’ recognition that the recent turn toward planning could open a space for their expertise in government activities, turning government into a long-term client. The program for the meeting included a conversation between demographers and Census officials and sessions on public health and vital statistics, population studies in relation to social planning, population distribution and internal migration, and the place of population studies in the university curriculum. A session on differential fertility featuring a paper by Frederick Osborn was co-sponsored by the American Eugenics Society. Eleanor Roosevelt attended this session — reportedly with knitting in hand — to which she had been escorted by Osborn, a friend of the Roosevelt family, despite his opposition to FDR’s policies.¹¹⁰ Afterward, the Roosevelts invited the PAA’s leaders to tea at the white house.¹¹¹

¹⁰⁹“Minutes of the PAA Annual Meeting, 1934,” 1934, “PAA #1,” box 22.

¹¹⁰See n. 59, 8.

¹¹¹“Clyde Kiser, C. Horace Hamilton, and Joseph J. Spengler, Interview with Harry Rosenberg for the PAA Oral History Project,” Apr. 26, 1973, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, 64.

The topics selected for the meeting point to the mutual dependence of government and demographers: demographers relied on governments to collect census and vital data, and governments relied on demographers for analysis, explanation, and prediction. The Census Bureau collected much more data than it could afford to analyze in-house. Through a partnership between the Census Bureau and the Milbank Memorial Fund, Notestein and Kiser were able to obtain and analyze previously-untabulated data for the censuses of 1900, 1910, and 1930. In particular, the Census Bureau had not tabulated size of family by socioeconomic status, a major topic of interest for demographers, eugenicists, and the Milbank Memorial Fund.¹¹² Access to these untabulated census data allowed for the proliferation of studies of differential fertility by demographers associated with Milbank in the 1930s. These studies attempted to establish not only the dimensions of fertility differentials (income, education, occupation, etc.), but also their stability or instability over time. Of the 62 demographically-oriented articles published in the *Milbank Memorial Fund Quarterly* in the 1930s, fully half were on fertility, with more than half of those specifically on differential fertility.¹¹³ Demand for research on differential fertility increased during the Great Depression, as policy makers and the public voiced the Malthusian concern that public relief may have been expanding the size of poor families rather than raising their standards of living. A much-cited study by Notestein, however, demonstrated that, while families receiving public benefits tended to be larger than other families, they had been large before beginning to receive benefits, not as a result.¹¹⁴ But while demographers were able to work with these data, they still had to rely on the questions chosen by the Census Bureau, which were not necessarily the questions of interest to demographers.

Beginning in 1935 and continuing throughout the century, demographers would advise

¹¹²Frank W. Notestein to Frederick Osborn, n.d., folder 21, box 15; Clyde V. Kiser, "The Fund's Work in Population," n.d., folder 86, box 29; "Report of the Division of Population Problems," 1932, folder 74, box 29.

¹¹³Many of these studies are cited in Charles F. Westoff, "The Changing Focus of Differential Fertility Research: The Social Mobility Hypothesis," *Milbank Memorial Fund Quarterly* 31, no. 1 (1953): 24–38.

¹¹⁴Frank W. Notestein, "The Fertility of Populations Supported By Public Relief," *Milbank Memorial Fund Quarterly* 14, no. 1 (1936): 37–49.

the government about their data needs and the types of questions and measures that should be included in the Census.¹¹⁵ In preparation for the 1940 U.S. Census, which was the first to include sampling (the “long form”) and pretesting, the Census Bureau hired a group of young and recently-trained demographers, led by Assistant Chief Statistician Philip Hauser, and including Henry Shryock Jr., George Stolnitz, and John Durand. This group came to be known as the “class of 1940.”¹¹⁶ Irene Taeuber has described the 1940 U.S. Census as “the first professional census,” in the sense that it was the first to be designed by professional demographers.¹¹⁷

The Great Depression demonstrated to economists and policy makers that markets alone could not effectively allocate resources or ensure ongoing prosperity in industrial societies. The New Deal administration instituted new forms of social and economic planning, some intended specifically to overcome the current crisis and others intended to provide workers with a permanent social safety apparatus. The 1935 PAA meeting occurred one month after the passage of the Emergency Relief Appropriation Act of 1935, and may have promoted the employment of demographers in the new government agencies and programs created under the act. The National Resources Committee, created the following month, included a Committee on Population Problems, which included Warren Thompson, William Ogburn, and Frank Lorimer, and was charged with projecting future U.S. population and analyzing its economic implications. The Federal Emergency Relief Administration (FERA) hired Irene Taeuber’s husband Conrad; Dorothy Thomas, one of the first female demographers along with Irene Taeuber, served as a consultant to the President’s Committee on Economic

¹¹⁵See, for example Kingsley Davis, “Testimony, Subcommittee on Census and Statistics of the Committee on Post Office and Civil Service, House of Representatives, U.S. Congress,” n.d., Kingsley Davis Papers, Hoover Institution, Stanford University, Palo Alto, CA, folder 16, box 4.

¹¹⁶“Philip M. Hauser, Interview with Jean Van Der Tak for the PAA Oral History Project,” Nov. 12, 1988, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, 34; “Henry Shryock Jr., Interview with Jean Van Der Tak for the PAA Oral History Project,” Apr. 8, 1988, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, 84.

¹¹⁷See n. 85.

Security.¹¹⁸ In 1935, FERA was replaced by the Works Progress Administration, which started the Current Population Survey as an instrument for the continuous monitoring of the U.S. population on a sample basis.¹¹⁹ In the early 1940s, the U.S. Department of Agriculture hired demographer Margaret Jarman Hagood, and the Census Bureau hired demographer Hope Tisdale Eldridge.

After 1935, the U.S. Census Bureau officially adopted the cohort component method to predict the country's population into the future for a broad array of consumers in government, academia, philanthropy, and business. However, these were not the only official projections made by the U.S. government. The passage of the Social Security Act in 1935 necessitated the projection of the elderly and working populations through 1975. Rather than using Census Bureau projections, the demographers of the Federal Security Administration produced their own projections for this purpose, using the logistic method to determine total future population at all dates between 1935 and 1975 (assuming that the population would grow along a logistic curve to a high of 150 million in 1975), and the cohort component method to determine the age distribution of those future populations.¹²⁰ This approach demonstrates that demographers viewed the logistic and cohort component projection methods as both alternatives and complements to one another, and that a range of actors and agencies were producing as well as consuming population projections. The cohort component method was also adopted as the official method of population projection in several other countries, notably Great Britain, where the first activity of the Royal Commission on Population, established in 1944 to address the issue of declining fertility, was to project the British population using the cohort component model under a range of fertility, mortality, and migration scenarios.¹²¹

¹¹⁸See n. 59, 8; "Conrad Taeuber, Interview with Anders Lunde for the PAA Oral History Project," Dec. 5, 1973, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, 19; see n. 116, 33, 38.

¹¹⁹See n. 116, 84.

¹²⁰Mair, see n. 2.

¹²¹Mair, see n. 2; Frank W. Notestein, "The Report of the Royal Commission on Population: A Review," *Population Studies* 3, no. 3 (1949): 232-240; Taeuber, "Literature on Future Populations," see n. 103.

Although there are several reasons why cohort component projections may have been more attractive to policymakers than were logistic projections in the early 1930s, it was not at all clear that cohort component projections were superior to logistic projections. Indeed, the relative quality of the two methods remained in doubt into the 1950s, as will be discussed in greater detail in Chapter Three.¹²² The cohort component method produced more detailed information, but also required more detailed input data, and the accuracy of the output depended on the accuracy of the inputs and the level of correspondence between predicted and actual future vital rates. Moreover, it was difficult between the wars to assess the performance of either projection method, simply because not enough time had yet passed to compare the projections to census figures. When data from the 1930 U.S. Census were released, they revealed that Pearl's projection of 122,397,000 was closer to the census count (122,775,000) than was Whelpton's projection of 123,600,000.

The ascendancy of the cohort component projection method in government, as well as the fact that the demographers hired or otherwise engaged by the U.S. and U.K. governments had been trained in the social sciences (including statistics) rather than the natural sciences, helped to establish demography's identity as a social science. The active courting of government clients by demographers also oriented this new social science toward policy. The 1936 establishment of OPR in Princeton University's School of Public and International Affairs further contributed to the crystallization of demography's identity as a policy-oriented social science. Established in 1930 in response to the rise of the U.S. to a position of world leadership, SPIA was an interdisciplinary division of Princeton University. It initially focused on undergraduate education, aiming to produce graduates who "will know the underlying features of History, Politics, Economics, Economic Geography and National Cultures, and will have a good working knowledge of at least one foreign language, and experience in public

¹²²Though more recent observers such as Henk de Gans describe the cohort component method as obviously superior, in his 1957 dissertation, OPR graduate student George Mair presented both methods as valid, and indicated that each could be superior to the other depending on the circumstances and data quality. de Gans, *Population Forecasting 1895-1945: Transition to Modernity*, see n. 175; Mair, see n. 2.

speaking, as well as “an understanding of the racial characteristics of foreign peoples.”¹²³ Its founders also planned to design a graduate program for further training of those who had completed the undergraduate program.¹²⁴

Dennis Hodgson has argued that demography shifted from being a social science — with the aim of understanding social processes — to being a policy science — with the aim of shaping social processes — after World War II.¹²⁵ However, attention to the founding of the IUSIPP, the PAA, and OPR calls into question both elements of Hodgson’s claim — that demography originated as a social science (rather than a natural science) and that it was ever not a policy science — by revealing the ways in which social and natural scientists vied for (and at times tried to relinquish to one another) the authority to speak about population and by demonstrating that population scientists courted policy makers as clients of their work from the very beginning. The following section explores demography’s major non-governmental project between the wars, demonstrating that, although it was not commissioned by government, it too aimed to influence the formation of policies that would shape the social process of family formation.

2.3.2 Identifying the Correlates of Fertility

In 1938, the Committee on Population Problems of the National Resources Committee published *The Problems of a Changing Population*, featuring a new set of cohort component projections for the United States by Thompson and Whelpton. These new projections were lower still than those included in *Recent Social Trends*, which had already been lower than those Whelpton had published in 1928. Irene Taeuber described these projections as a “population toboggan slide.”¹²⁶ Figure 2.1 graphs the 1938 projections (dotted gray line), along with Whelpton’s 1928 projections (solid gray line), Thompson and Whelpton’s 1933 *Recent*

¹²³“School of Public and International Affairs, 1930 Report,” 1930, folder 49, box 4.

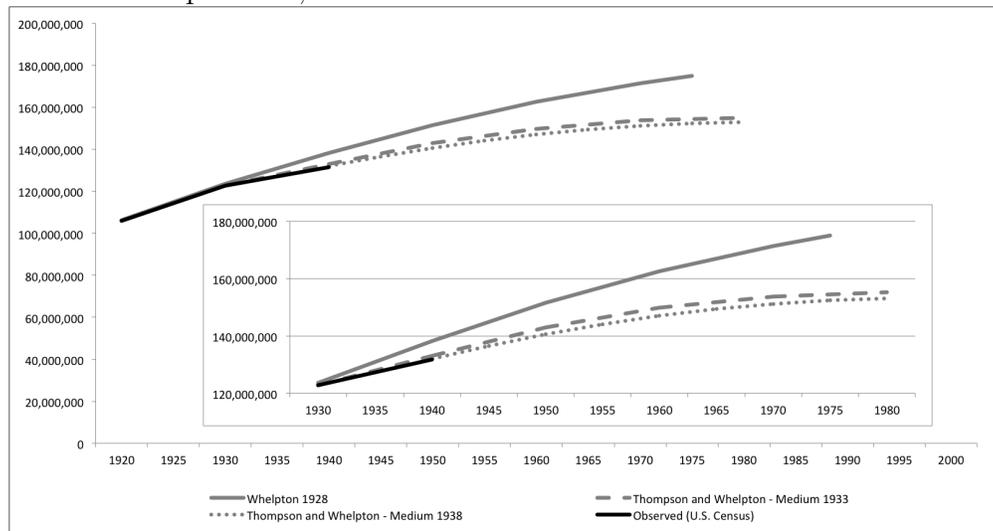
¹²⁴Ibid.

¹²⁵Hodgson, “Demography as Social Science and Policy Science,” see n. 20.

¹²⁶See n. 85, 77.

Social Trends projections (dashed gray line), and the population for 1920-1940, as recorded by the U.S. Census Bureau (solid black line). The work of the National Resource Committee demonstrates that, by the end of the interwar period, the U.S. government had come to view the size, structure, and distribution of the domestic population as a variable in national administration, and as something that could potentially be manipulated or engineered through strategic policy interventions.

Figure 2.1: Thompson and Whelpton’s U.S. Population Projections, 1928, 1933, and 1938, and Observed U.S. Population, 1920-1940



Projections of slowing population growth displaced neo-Malthusian fears of population outstripping the world’s natural and agricultural resources, described in Chapter One, and generated concern that declining fertility would undermine national strength and economic recovery. By the end of the 1930s, anxieties about population decline in the U.S. had become very similar to those in Europe, discussed earlier in this chapter. Osborn and the American Eugenics Society added a second layer to this anxiety: since fertility decline was concentrated among the professional middle classes — those Osborn considered genetically “superior” — further fertility decline would not only reduce the size and increase the median age of the population, but would also reduce its inherent genetic fitness, leaving the U.S. vulnerable to internal strife and external attack. The first part of this section de-

scribes how demographers came to understand differential use of birth control as the cause of differential fertility. The second part examines a study proposed by Osborn, funded by the Carnegie Corporation and the Milbank Memorial Fund, and carried out by the Scripps Foundation for Research in Population Problems and Princeton's Office of Research in 1941 to identify the social and psychological factors promoting differential use of birth control. Officially titled Study of Social and Psychological Factors Affecting Fertility and unofficially referred to as the Indianapolis Study, this project used the survey methods of the new field of public opinion research to assess the social and psychological correlates of fertility so that philanthropists and policy makers could manipulate them in order to engineer a supposedly-eugenic distribution of births and thereby improve the quality and increase the quantity of the U.S. population. My analysis of this study illustrates the ongoing influence of Frederick Osborn and the Milbank Memorial Fund in the field of demography between the wars, and describes the new tool of fertility surveys, which would become a common feature of postwar demography.

Birth Control and Differential Fertility

Although it now seems obvious that differential use of birth control was the underlying cause of socioeconomic, racial, and regional fertility variation, it was not at all obvious to scientists between the wars. In 1931, the MMF generated a press release stating that “in the country as in the city, the higher the economic and social status of the parents, the fewer are the children born,” and explaining that “whether this limitation of babies is accomplished entirely by birth control or is partly the result of diminished fecundity, it is impossible to say.”¹²⁷ Demographers in the early 1930s advanced numerous theories, including “some loss of natural capacity to bear children” among middle-class and wealthy women; a “cyclical rise and fall of racial reproductive vigor”; a metabolic tradeoff between economic success and reproduction; and more sexual activity among the poor because they had fewer non-sexual

¹²⁷“Press Release,” May 13, 1931, folder 175, box 22.

activities with which to dissipate “nervous energy.”¹²⁸

As discussed above, the Milbank Memorial Fund sponsored research by Pearl, Notestein, and Kiser aimed at answering this question. The major obstacle to research on the causes of differential fertility was that, while census and vital registration data demonstrated a decline in fertility among the higher socioeconomic groups, very little data about contraceptive usage or its efficacy was available, in large part because contraception was still highly controversial in the U.S. and illegal in many states. Contraceptive use has never been a question in the U.S. Census, so demographers have always had to look elsewhere for the data necessary to analyze its prevalence. The first survey of contraceptive practice, known as the Mosher Survey, was carried out by physician and Stanford professor Clelia Mosher between 1892 and 1920, but the results were not published until the 1970s.¹²⁹ Between the wars, demographers took two approaches to studying contraceptive efficacy. Notestein, together with physician Regine Stix, collected clinical data from Margaret Sanger’s Birth Control Clinical Research Bureau in New York, in response to a request by Sanger for external review of the efficacy of the methods used at her clinics.¹³⁰ Pearl, who could not come to an agreement with Sanger about the terms of use of these data, carried out a survey of patients in a hospital maternity ward, as discussed above.¹³¹ In contrast to contraceptive research funded by other organizations, such as John D. Rockefeller Jr.’s Bureau of Social Hygiene or Clarence Gamble’s National Committee on Maternal Health, which focused on clinical and laboratory studies aimed at developing effective methods of birth control, the research funded by the MMF focused on who used contraception and how, and the effects of contraceptive use at the level of aggregate population.

¹²⁸Dublin, “The Outlook for the American Birth-Rate,” see n. 105, 117; Frank Hankins, “Has the Reproductive Power of Western Peoples Declined?” In *Problems of Population: Being the Report of the Proceedings of the Second General Assembly of the International Union for the Scientific Investigation of Population Problems*, ed. G.H.L.F. Pitt-Rivers (London: Kennikat Press, 1932), 183.

¹²⁹Carl N. Degler, “What Ought to Be and What Was: Women’s Sexuality in the Nineteenth Century,” *American Historical Review* 79, no. 5 (1974): 1467–1490.

¹³⁰Regine K. Stix and Frank W. Notestein, *Controlled Fertility: An Evaluation of Clinic Service* (Baltimore: Williams & Wilkins, 1940), xiii.

¹³¹For the negotiations between Pearl and Sanger over the use of her data for research purposes, see folder “Margaret Sanger #8,” box 24, Raymond Pearl Papers, American Philosophical Society.

Pearl found that the most popular methods of birth control, in order, were condoms, douching, withdrawal, vaginal suppositories, “other”, rhythm, and pessaries (similar to cervical caps).¹³² Notestein found that about 95% of the women who came to Sanger’s clinics had used contraception prior to their first visit (including withdrawal, douching, condoms, vaginal suppositories, rhythm, pessaries, diaphragms, and sponges) with a 75% success rate.¹³³ As Linda Gordon has pointed out, contraceptive materials were readily available in the United States, even when illegal. However, letters received by the U.S. Children’s Bureau between 1915 and 1932 indicate that many couples, particularly poorer ones, were not aware of their contraceptive options.¹³⁴ The Milbank studies demonstrated that couples who understood the principle of withdrawal or knew how to read between the lines of cleverly-worded advertisements for contraceptive devices and abortifacients could control their fertility with a relatively high degree of success in the absence of organized family planning services: indeed at a time when the dissemination of contraceptive knowledge was illegal. This finding would play an important role in postwar debates about the necessity and efficacy of fertility control programs in the global south in the postwar period, described in Chapters Four and Five.

Notestein’s discovery that contraceptive knowledge was widespread among women who had not visited a birth control clinic finally convinced scientists that contraceptive practices had indeed accounted for recent declines in fertility. Conclusively linking changes in fertility to contraception helped move the analysis of human population closer to the social sciences, and made their study through analogy to experimental populations seem less appropriate, even though human control of fertility could only operate within biological limits. In 1957, Lorimer would protest the characterization of demography as a branch of biology at a Cold Spring Harbor symposium titled “Population Studies: Animal Ecology and Demography,”

¹³²Pearl, “Contraception and Fertility in 2,000 Women,” see n. 41, 397.

¹³³“Press Release,” Jan. 22, 1934, folder 177, box 22; Regine K. Stix and Frank W. Notestein, “Effectiveness of Birth Control: A Study of Contraceptive Practice in a Selected Group of New York Women,” *Milbank Memorial Fund Quarterly* 12, no. 1 (1934): 57–68.

¹³⁴Linda Gordon, *The Moral Property of Women: A History of Birth Control Politics in America* (Chicago: University of Illinois Press, 2002); Molly Ladd-Taylor, ed., *Raising a Baby the Government Way: Mothers’ Letters to the Children’s Bureau, 1915-1932* (New Brunswick: Rutgers University Press, 1986).

arguing that “human demography is, it seems to me, both a biological and a social science. We must always take the biological aspects of vital events into account; but demographic processes in man are largely determined by social conditions, and we must rely largely on the methods of the social sciences in investigating these relations.”¹³⁵

Once demographers had identified contraception as the proximal cause of differential fertility, it made sense to search for more distal causes. Pearl proposed one cause, explaining the higher fertility rates of poor and nonwhite women as a result of the fact that the effectiveness of the methods available at the time were directly related to the diligence and skill with which they were used. This explanation employed race and class as proxies for diligence and skill, creating a kind of circularity whereby the higher fertility of poor and African American women became evidence of their inferior capabilities. For example, Pearl found that white women were twice as likely to use birth control as African American women. He explained this finding with the “fact” that “the American negro, probably generally and certainly under urban conditions, exercises less prudence and foresight than white people do in all sexual matters.” He backed up this statement by pointing to “the relative prevalence of venereal diseases, which are generally much more common among the negroes than among the whites.”¹³⁶ Pearl went on to explain that

the use of contraceptive methods demands some degree of intelligent foresight. this is an attribute, or a combination of attributes, more prevalent among whites than among negroes. The experience of contraceptive clinics in cities has shown that any method of contraception known at present is not particularly effective with the general population of negroes. They need something which is more automatic and requires less intelligent cooperation and foresight on the part of the individual.¹³⁷

This statement eerily foreshadows arguments made by postwar population control experts about birth control in the global south needing to be “foolproof” to overcome lack of motiva-

¹³⁵Frank Lorimer, “Human Populations: Historical Study, Introductory Remarks of the Chairman,” in *Population Studies: Animal Ecology and Demography*, Cold Spring Harbor Symposia on Quantitative Biology (1957).

¹³⁶Pearl, “Contraception and Fertility in 2,000 Women,” see n. 41, 395.

¹³⁷*Ibid.*, 395.

tion on the part of its users, which will be discussed at greater length in Chapters Four and Five. Indeed, in the latter part of the century, birth control methods designed for women in the global south, such as Depo Provera, would be initially tested on poor and nonwhite women in the U.S.¹³⁸

While Pearl focused on the effectiveness with which couples used birth control, Osborn promoted the search for the social and psychological factors that would make couples more or less likely to use contraception or to do so with a greater or lesser degree of success, which, he argued, would provide valuable knowledge for policies to shape the future size and composition of the U.S. population. As stated above, population projections were beginning to suggest that population growth was slowing and would soon level off. Osborn feared that increasing public anxiety about fertility decline would produce calls for pronatalist policies, and he was concerned that these should be enacted to increase births only among those he viewed as desirable. He had heavily criticized the pronatalist programs of such countries as France and Belgium, which “have been developed for the purpose of increasing the birth rate, in most cases without regard to the type of people among whom births would increase.”¹³⁹ Osborn argued that then-current fertility differentials already favored “the least well equipped,”¹⁴⁰ and asserted that “our social morality as it affects the rate of reproduction of different groups of our people, is undoubtedly a wrong morality. The ultimate success of American civilization requires that it be changed.”¹⁴¹ The following section examines how he employed the new science of demography in the service of that goal.

The Indianapolis Study: Demography in the Service of Eugenics

In 1938, Osborn met with the executive director of the Carnegie Corporation of New York to secure funding for a study of the social and psychological correlates of fertility among white

¹³⁸See Pete McCloskey Papers, Hoover Institution Archive, Stanford University.

¹³⁹See n. 70, 122.

¹⁴⁰Frederick Osborn, “Characteristics and Differential Fertility of American Population Groups,” 1933, “Frederick Osborn - Papers #1,” box 17.

¹⁴¹Frederick Osborn, “Social Morality in a Diminishing Population,” 1935, “Frederick Osborn - Papers #3,” box 17.

contraceptive-users in Indianapolis. Since studies by Pearl and Notestein had demonstrated that differential contraceptive use was the proximal cause of differential fertility, in order to reverse that differential, Osborn argued that “it is therefore in the social and economic field that we must seek the factors which will be most widely effective as measures of eugenic improvement, and which are most important as fields of eugenic research.”¹⁴² The Carnegie Corporation agreed to grant the funds, channeling them through the MMF, which would oversee and coordinate the study. This section describes the design and findings of the Indianapolis Study and its implications for demographic research and its policy applications.

The Indianapolis Study marked the beginning of a long-term collaboration between the emerging fields of demography and survey research. With census and vital registration data, demographers could only analyze outcomes. With a survey, they could begin to uncover the attitudes underlying and motivating the behaviors that produced those outcomes. By the end of the 1930s, Americans had become familiar with surveys as an instrument through which “the public” could be known, both to scientists and to itself. Many Americans eagerly participated in surveys and consumed published survey results.¹⁴³ Survey research was also becoming an independent field of knowledge: Princeton University’s Office of Public Opinion Research (OPOR) was established in 1940 alongside OPR in the School of Public and International Affairs, which by then had been renamed the Wilson School, after former U.S. President and former Princeton University President Woodrow Wilson. The Indianapolis Study set the model for postwar fertility surveys worldwide and was therefore the first of what would become a series of national and international surveys of fertility and family planning, which will be discussed in greater detail in Chapter Five.

The Indianapolis Study was designed and executed in a partnership between the MMF, OPR, and the Scripps Foundation for Research in Population Problems, with Kiser at MMF and Whelpton at Scripps taking the lead. This collaboration between Frederick Osborn at

¹⁴²See n. 70, 119.

¹⁴³Sarah E. Igo, *The Averaged American: Surveys, Citizens, and the Making of a Mass Public* (Cambridge: Harvard University Press, 2007).

the American Eugenics Society, Kiser at the Milbank Memorial Fund, Notestein at OPR, and Thompson and Whelpton at the Scripps Foundation indicates the close connections between demographers, their patrons, and their funders. The field was still a very small one, practiced mainly by men who inhabited the same social world as one another and as their funders, and correspondence between them indicates close personal friendships in addition to close working relationships. The small size of the field and the camaraderie and shared values of its practitioners and their patrons and clients allowed patrons and clients considerable influence over the content of the field, particularly in terms of the research questions it broached and the methods with which it approached those questions.

The survey questionnaire was based on a set of 23 hypotheses developed by Warren Thompson that linked social and psychological characteristics to fertility on the basis of Osborn's eugenic theories. As discussed above, Osborn recognized and acknowledged that genetic superiority and inferiority were undefined and unmeasurable, but he maintained that superiority correlated with affinity for children and the qualities that made for good parenting. The Indianapolis Study was designed explicitly to test the relationship between fertility and attitudes toward children, selfishness, quality of marital relationships, and the willingness of parents to assume responsibility and make personal sacrifices. Research instruments included a detailed pregnancy and contraceptive history, a socioeconomic history since marriage, a psychological questionnaire designed by psychologists at OPR, and a form for other demographic and descriptive data.¹⁴⁴

The study focused on Indianapolis because its designers thought denizens of that city to be representative of the nation as a whole, drawing on the same model of representativeness employed by Robert and Helen Lynd in their "Middletown" studies, which had been carried out in Muncie, Indiana in the 1920s and 1930s.¹⁴⁵ Fieldwork included an initial household

¹⁴⁴The instrument also included "an 'Interviewer's Rating Scale' in which the interviewer recorded her personal rating of the husband and wife on a series of attributes." Clyde V. Kiser, "The Indianapolis Fertility Study — An Example of Planned Observational Research," *The Public Opinion Quarterly* 17, no. 4 (1953): 500.

¹⁴⁵Robert S. Lynd and Helen Merrell Lynd, *Middletown: A Study in American Culture* (New York: Harcourt, Brace, 1929); Robert S. Lynd and Helen Merrell Lynd, *Middletown in Transition: A Study in Cultural*

survey of almost all couples in the city, but intensive interviews were limited to couples in which both husband and wife were native-born, white, Protestant, educated at least through the eighth grade, and not previously married. They had to have been married to one another between 1927 and 1929, with the husband under the age of 40 and the wife under age 30 at the time of marriage, and resident in a large city during most of the period of their marriage. Further, they had to have no reason to believe that they were not “relatively fecund.”¹⁴⁶ These selection criteria indicate that the study was not meant to represent *all* Americans, but rather those whose reproduction was considered beneficial to society. Kiser also attributed the choice of such a homogeneous sample to budgetary constraints and the resulting desire “to avoid the necessity of subdivision or separate analysis of the psychological data by such factors as residence, color, nativity, religion, age, and duration of marriage.”¹⁴⁷ Additional sources of fertility variation would have multiplied the costs of analysis and required a much larger sample to achieve the requisite statistical power. Within this group, large families were oversampled in order to produce sufficient data about large and small planned families as well as large unplanned families.¹⁴⁸

Because the Indianapolis Study aimed to identify the correlates of family size among families with access to contraception, it required a sample in which subjects varied in terms of actual contraceptive use, but in which all subjects had knowledge of and access to birth control. Its designers assumed that native-born white Protestants were at the vanguard of contraceptive use, though results of the initial screening revealed that Jewish families were smaller in size by about 25%.¹⁴⁹ Overall, contraceptive use was relatively high: Kiser determined that “couples in the Indianapolis study had only about 27 per cent of the births

Conflicts (New York: Harcourt, Brace, 1937); also see Igo, see n. 143.

¹⁴⁶Clyde V. Kiser and Pascal K. Whelpton, “Resume of the Indianapolis Study of Social and Psychological Factors Affecting Fertility,” *Population Studies* 7, no. 2 (1953): 96.

¹⁴⁷Kiser, “The Indianapolis Fertility Study — An Example of Planned Observational Research,” see n. 144, 499.

¹⁴⁸Kiser and Whelpton, see n. 146, 96.

¹⁴⁹Kiser, “The Indianapolis Fertility Study — An Example of Planned Observational Research,” see n. 144, 499, 505; About two-thirds of Stix and Notestein’s contraceptive users had been Jewish. Stix and Notestein, “Effectiveness of Birth Control: A Study of Contraceptive Practice in a Selected Group of New York Women,” see n. 133.

that could have occurred” in the absence of contraceptives.¹⁵⁰

The first round of interviews was conducted by 43 college students; the second by “eleven carefully selected and carefully trained women interviewers.”¹⁵¹ As this was one of the first surveys to ask detailed questions of couples about family-formation practices in their homes (as opposed to a medical setting), the study’s directors understood the selection and training of interviewers as critical to response validity, though exactly how interviewer characteristics and behavior influence survey response is still an open question in survey research. More attention would be paid to this issue in postwar fertility surveys — particularly international surveys — as will be discussed in Chapter Five. Indianapolis Study respondents were asked how many children they had wanted at the time of marriage and whether each pregnancy had been desired at the time it occurred. However, the study was cross-sectional rather than longitudinal, meaning that independent and dependent (input and outcome) variables were measured at the same time, so only correlation and not causation could not be identified. Answers about the intentions behind each birth may therefore have been subject to recall bias and post-hoc rationalization.¹⁵²

The Indianapolis Study failed to find support for Osborn’s hypotheses about the correlation between the personal characteristics of couples and an affinity for large families. As discussed above, Osborn had hypothesized that, if couples had perfect control over their family size, those who liked children — a reflection of genetic superiority, Osborn believed — would have larger families, while those who saw children as a barrier to their freedom or a source of excessive demands on their time or other resources — a reflection of genetic inferiority, Osborn believed — would have smaller families. The study found, however, that “the stronger the interest in and liking for children, the *greater* the proportion of couples practising contraception effectively,” and that parents of smaller families were less concerned

¹⁵⁰Kiser, “The Indianapolis Fertility Study — An Example of Planned Observational Research,” see n. 144, 505.

¹⁵¹Kiser, “Contributions of P.K. Whelpton to Demography,” see n. 150, 443.

¹⁵²Richard A. Williams, “Indianapolis Revisited: A New Look at Social and Psychological Factors Affecting Fertility” (Ph.D. diss., University of Wisconsin - Madison, 1986).

about the personal demands of childrearing.¹⁵³ Although Kiser and Whelpton critiqued the psychological metrics used in the study, they also recognized that a major problem with the study was its cross-sectional design, which meant that attitudes toward childrearing could not be measured prior to family formation.¹⁵⁴ As they put it, “the questions asked are tapping attitudes which are more a function of the respondent’s current responsibility for child care than a function of factors which helped to determine the couple’s family planning in the past.”¹⁵⁵ They therefore interpreted the correlation between contraceptive use and affinity for children as an indication that “liking for children is a *result* of planning behaviour as well as a motivating cause for it.”¹⁵⁶ The finding that better parents were also those who used contraception — regardless of whether they used contraception because they were better parents or were better parents because they used contraception — was not good news for Osborn’s program of voluntary eugenic selection.

Other results of the study, however, were more encouraging for Osborn. He had suggested that happier marriages (again, reflective of supposed genetic superiority) should produce more children, a proposition the Indianapolis Study tested with a series of measures of “marital adjustment.” Within the sample as a whole, the study found that marital adjustment was inversely related to family size (unhappier couples having more children), while among planned families the relationship was direct (happier couples having more children). Kiser and Whelpton concluded from this evidence that “marital adjustment is directly related to successful family planning both with respect to preventing unwanted pregnancies and . . . with respect to success in having as many children as wanted.”¹⁵⁷ Given that many of the methods of birth control available at the time — including rhythm, withdrawal, condoms, and pessaries — required the cooperation or at least the consent of both sexual partners, this finding makes sense. As Kiser and Whelpton reported, “the data suggest that fertility

¹⁵³Kiser and Whelpton, see n. 146, 102.

¹⁵⁴Kiser, “The Indianapolis Fertility Study — An Example of Planned Observational Research,” see n. 144, 509.

¹⁵⁵Kiser and Whelpton, see n. 146, 104-105.

¹⁵⁶*Ibid.*, 102-102.

¹⁵⁷*Ibid.*, 106.

planning was most successful among couples in which both the wife and husband state that responsibility for contraception was a fifty-fifty proposition, and was least successful among couples in which each spouse said that the other should take the responsibility regarding contraception. When each wished the burden on the other, apparently neither spouse took much responsibility.”¹⁵⁸ In the postwar period, feminist efforts to give women more control over childbearing, together with the search for a “foolproof” contraceptive for the global south, would lead to the development of systemic contraceptive technologies that worked directly on women’s bodies, eliminating the need for male cooperation or consent and turning contraception into a female concern rather than one of couples, as will be discussed at greater length in Chapter Five.

For the study’s directors, its most exciting result was that the correlation between socioeconomic status and family size mirrored that between “marital adjustment” and family size. Population scholars had long been aware that, in the general population, family size was inversely related to socioeconomic status: wealthier families had fewer children, producing the differential fertility patterns that eugenicists decried. The same pattern prevailed in the sample surveyed for the Indianapolis Study. However, among the subset of couples whose families were completely planned — that is, each birth intended at the time it occurred and unintended births averted through contraceptive use — the pattern was reversed: family size was *directly* related to socioeconomic status, meaning that wealthier families were larger.¹⁵⁹ Kiser viewed this finding as evidence of the desire of those with more economic security for more children, since couples at all socioeconomic levels seemed to be equally successful in their family planning efforts. This finding provided support for Osborn’s contention that the diffusion of birth control throughout society could reverse the prevailing socioeconomic fer-

¹⁵⁸Kiser and Whelpton, see n. 146, 107.

¹⁵⁹This finding was consistent with the results of similar research in interwar Sweden that provided intellectual support for Sweden’s combined eugenic/contraceptive/pronatal program described above. Karl Arvid Edin, “The Fertility of the Social Classes in Stockholm in the Years 1919 to 1929,” in *Problems of Population: Being the Report of the Proceedings of the Second General Assembly of the International Union for the Scientific Investigation of Population Problems*, ed. G.H.L.F. Pitt-Rivers (London: Kennikat Press, 1932).

tility differential.¹⁶⁰ It also laid the foundation for postwar economic theories of childbearing that compared fertility decisions to purchasing decisions.¹⁶¹

The Indianapolis Study resulted in the publication of 33 articles in the *Milbank Memorial Fund Quarterly* between 1943 and 1958. In general, it identified socioeconomic status as the strongest predictor of family size, and failed to find consistent correlations between fertility and psychological factors.¹⁶² Kiser and Whelpton qualified these findings, arguing that “there is good reason to believe that it is not socio-economic status *per se* but rather the underlying attitudes and psychological characteristics of these classes that account for the fertility behavior.”¹⁶³ However, they found it very difficult to disentangle socioeconomic status from attitudes, and reported that, even though “characteristic patterns of fertility differentials are found consistently in classifications by socio-economic status, most classifications by psychological characteristics *within socio-economic groups* fail to show such patterns.”¹⁶⁴ For example, the study’s designers had expected to find a higher degree of family planning among couples exhibiting “rationality of behaviour,” defined as “the extent to which behaviour is a result of calculated choice between alternatives rather than the unquestioning acceptance on faith of the traditional behavioural standards of the group to which the individual belongs,” and measured in terms of “tendency to plan in general,” “religious interest,” and “adherence to traditions.”¹⁶⁵ However, these characteristics were all found to correlate strongly with socioeconomic status, mustering little support for the hypothesis.¹⁶⁶ Similar problems plagued attempts to correlate family size with such factors as parents’ fam-

¹⁶⁰Kiser, “The Indianapolis Fertility Study — An Example of Planned Observational Research,” see n. 144, 506.

¹⁶¹Gary S. Becker, “An Economic Analysis of Fertility,” in *Demographic and Economic Change in Developed Countries*, ed. National Bureau of Economic Research (New York: Columbia University Press, 1960); Judith Blake, “Are Babies Consumer Durables?: A Critique of the Economic Theory of Reproductive Motivation,” *Population Studies* 22, no. 1 (1968): 5–25.

¹⁶²In a 1986 dissertation at the University of Wisconsin, Richard A. Williams argued that the failure to identify psychological correlates of fertility was a result of the analytic methods available at the time. Using methods of multivariate analysis developed later in the twentieth century, Williams contends that psychological factors can be identified. Williams, see n. 152.

¹⁶³Kiser and Whelpton, see n. 146, 108.

¹⁶⁴*Ibid.*, 108, emphasis in original.

¹⁶⁵*Ibid.*, 105–106.

¹⁶⁶*Ibid.*, 507–508.

ily backgrounds, marital history, health, and happiness, as these variables exhibited strong collinearity with socioeconomic status.¹⁶⁷

The dominance of socioeconomic status as a driver of fertility would become increasingly salient after World War II, when the growing popularity of birth control would combine with postwar prosperity to help create the baby boom, as discussed in Chapter Three, and when anxiety about too-small families among the professional classes in the global north would be replaced by anxiety about too-large families in the global south, as discussed in Chapter Four. Another question from the Indianapolis Study that would resurface after the war is the effect of child sex preference on family planning behavior, as son preference was well known in some parts of Asia. The designers of the Indianapolis Study recognized that child sex preferences could either increase or decrease overall fertility, explaining that “it might encourage some couples to ‘keep trying’ until they have a child of the sex preferred” or “it might be a deterrent to further fertility among couples having children of the sex preferred.”¹⁶⁸ The study did identify lower fertility among those whose preferences had been fulfilled (for example, among parents of sons who said they would prefer a son if they could only have one child), though Kiser and Whelpton acknowledged that “an important weakness of the data is that the statements regarding sex preference in children are *ex post facto*,” and that a parent would be unlikely to state a preference at variance with the actual sex mix of their children.”¹⁶⁹ Along with the effects of sex preference, the issue of the validity of statements parents made about their attitudes toward children they already have would come to the fore in postwar fertility surveys, discussed in Chapter Five.

The Indianapolis Study was an important precursor of those surveys, and had been expressly designed to advance the field of survey research as well as that of fertility research. Kiser and Whelpton drew from it information about fertility and contraceptive practices and lessons for the improvement of surveys as a tool for fertility research. They determined

¹⁶⁷Kiser and Whelpton, see n. 146, 100-101.

¹⁶⁸Ibid., 102.

¹⁶⁹Ibid., 103.

that the restriction of the sample to one with very homogeneous characteristics had limited the variation needed to adequately test hypotheses, and that the sample was too small to yield definitive results.¹⁷⁰ Moreover, they felt that the Indianapolis Study had attempted to test too many hypotheses (23) and had gathered insufficient data for each, despite the fact that the interview schedules contained over 1,000 questions.¹⁷¹ Future studies, they argued, should engage in more rigorous pre-testing to allow them to focus on fewer hypotheses and collect more data on each. Finally, they called for better analytic methods, as “the difficulties inherent in the interaction of the variables considered constantly confronted the analysts.”¹⁷² Kiser also questioned the adequacy of survey methods and statistical measures to the task, arguing that “the subjects studied are human beings and that decisions regarding fertility planning and fertility are made by individuals with multiple and complex motivations.”¹⁷³ Despite this doubt, demographers would come to rely more heavily on survey methods and statistical measures over the next decades — as discussed in Chapters Three and Five — though by the end of the century, anthropologically-oriented demographers would begin to incorporate ethnographic methods into fertility research.¹⁷⁴

The Indianapolis Study demonstrates that the political concerns of population scientists, their patrons, and their clients shaped the contents of demographic research between the wars, despite the stated desire of its practitioners to purge demography of population politics. In 1946, Taeuber acknowledged that “the population research of the last twenty-five years has been unique among the social sciences in the extent to which it has been a function of government, research, foundations, and institutes,” each with its claims on the work of demographers.¹⁷⁵ The traits Taeuber attributed to demography between the wars would

¹⁷⁰Kiser, “The Indianapolis Fertility Study — An Example of Planned Observational Research,” see n. 144, 508.

¹⁷¹Ibid., 501.

¹⁷²Kiser and Whelpton, see n. 146, 108.

¹⁷³Kiser, “The Indianapolis Fertility Study — An Example of Planned Observational Research,” see n. 144, 509.

¹⁷⁴See, for example, Susan Greenhalgh, ed., *Situating Fertility: Anthropology and Demographic Inquiry* (New York: Cambridge University Press, 1995).

¹⁷⁵“Population Studies in the United States,” *Population Index* 12, no. 4 (1946): 255.

continue to characterize it after World War II, though its scope would expand beyond North America and Europe to encompass the whole world, as will be discussed in Chapter Three.

Conclusion

This chapter has demonstrated how, between 1928 and 1941, demography became recognizable as a distinct intellectual field in the United States — albeit an interdisciplinary one — associated with the social sciences, with a brief comparative discussion of similar developments in Great Britain and the broader context of the International Union for Scientific Investigation of Population Problems and the mounting political tensions in Europe that helped to ignite World War II. Between the wars, demography acquired many of the disciplinary desiderata described by Valenza, including professional associations, journals, a lexicon, university research centers, and graduate training programs. However, in order to establish these institutions, the emergent discipline of demography needed the external support of the Milbank Memorial Fund and clients for its research in government, science, industry, and philanthropy. In this chapter, I have argued that, as a result of this dependence, all three sets of actors — demographers, patrons, and clients — continually negotiated the boundary between population science and population politics. In the process, birth control and scientific racism were excluded while the new free-market eugenics was included. I have also demonstrated that the long-term decline in fertility in North America and Western Europe, discussed in Chapter One, continued apace in the 1930s, silencing the neo-Malthusian predictions of overpopulation that had provided scientific justification for birth control legalization and immigration restriction in the 1920s, and intensifying fears of population decline and the national weakness and economic decline that were expected to follow.

As the history of the IUSIPP indicates, even as its members tried to distinguish demography from population politics, the science of population was inextricably bound up with the politics of population that were becoming important geopolitical strategies between the

wars, particularly in Europe. As discussed in Chapter One, intellectuals and national leaders had long viewed population as a source of national strength and economic dynamism and, in the 1930s, European states employed new policies aimed at manipulating population in order to increase their power on the geopolitical stage. These policies included universal pronatalist measures in France and Belgium, selective pronatalist measures combined with eugenic sterilization in Sweden and Germany,¹⁷⁶ large-scale migration schemes in Germany and Italy, and genocide in Germany and in other countries occupied by Germany or under its political influence. As policy makers throughout Europe sought scientific validation for these measures, demographers in the U.S., the U.K., and France resisted the co-optation of their science by fascist population politics, even as they actively worked to make it relevant to the free-market eugenics championed by Frederick Osborn in the U.S. and Carlos Blacker in the U.K. This new version of eugenics sought to excise overt or scientific racism from its methods and theories, and to eliminate the explicit role of governmental or scientific authority, using subtle social pressure to encourage eugenic behavior among the general public.

Demographers themselves are generally the protagonists of the story of demography's disciplinary development, with Pearl organizing the IUSIPP, Dublin creating the U.S. committee, Fairchild spearheading the PAA, Carr-Saunders chairing the PIC, and Kiser and Whelpton directing the first fertility survey. However, all of these activities required the backing of organizations and individuals who saw the emerging field of demography as instrumental to achieving their political goals, which were largely shared by these early demographers. In the United States, the Milbank Memorial Fund was demography's major patron and the American Eugenics Society demography's major non-governmental client; the Eugenics Society of Great Britain carried out both functions in the U.K. Governments also became clients of demography during this period, with the receptivity of officials and policy makers to demography likely enhanced by the exigencies of the Great Depression and fear of the political and economic consequences of slowing population growth. In the 1930s, gov-

¹⁷⁶Eugenic sterilization was also practiced in 32 U.S. states, particularly California, whose eugenic laws provided inspiration to the programs of Germany and Sweden. Stern, see n. 60.

ernments began to hire demographers to design censuses and analyze their data, and other statistical offices adopted the new analytic methods developed in demography. Although demographers and government statisticians did not jettison the logistic projection method entirely, the cohort component method served more of the planning needs of government agencies. After his studies of birth control in the 1930s, Pearl himself abandoned the logistic law on which the logistic projection method was based.

The next chapter will explore the expansion of the scope of U.S. demography during and after World War II. As Taeuber has noted, between the wars, “American demography remained pre-eminently the demography of the United States.”¹⁷⁷ Although some U.S. demographers — including Taeuber herself — studied populations outside the U.S., most focused on changes in the size and composition of the domestic population, and demographers in other countries similarly focused on the populations of their states and empires. During World War II, the ambit of demography would expand dramatically, as the interests of the nascent discipline’s patrons and clients directed demographers’ attention to the size and composition of the population of the world, generating the concept of global population.

¹⁷⁷See n. 175, 264.

Chapter 3

The Mid-Century Crisis of Global Demography

The previous chapters have demonstrated that, between the world wars, demography coalesced as an interdisciplinary science of human population that promised to provide information about population and population change, and thereby facilitate social engineering and economic planning in the United States and Western Europe. By the beginning of World War II, the U.S. government had begun to employ demographers in the Census Bureau and in the government agencies established by the New Deal administration, and population projection — estimating future population size and structure — had become a routine activity of demographers working in government. During the war, the U.S. government's interest in demography expanded beyond the borders of the United States, as its leaders began to view population knowledge as critical to wartime strategy, including the coordination of military and industrial manpower, rationing food and other supplies, and estimating the military strength of the Axis powers. World War II demonstrated to the leaders of the Allied powers that population could be a potent geopolitical strategy and weapon. The Axis powers had invoked population growth to justify their aggression, and had mobilized fertility, mortality, and migration as geopolitical weapons. When the U.S. emerged from the war as a global hegemon, its leaders sought to ensure world peace by remaking the world according to the American model, employing social scientific knowledge along with dollar diplomacy (discussed at greater length in Chapter Four) to encourage the development of liberal capitalist democracies worldwide, following the interwar lead of U.S. philanthropic foundations.¹

¹Michael Adas, "Modernization Theory and the American Revival of the Scientific and Technological Standards of Social Achievement and Human Worth," in *Staging Growth: Modernization, Development, and the Global Cold War*, ed. David C. Engerman et al. (Boston: University of Massachusetts Press, 2003), 26.

As the Cold War began, this project took on even greater urgency. As discussed in the Introduction, the Cold War divided the world into three: the First (industrial capitalist) World, the Second (industrial[izing] communist) World, and the Third (nonindustrial and nonaligned) World. From the 1950s to the 1980s, the U.S. and the U.S.S.R. vied for global hegemony, in large part by promoting the modernization of Third-World countries according to competing capitalist and communist models. In the 1950s, U.S.-based political scientists and economists, including Seymour Martin Lipset, Walt Whitman Rostow, and Rostow's colleagues at MIT's Center for International Studies, developed modernization theory to describe the capitalist path to modernization and its application in the global south. Modernization theory contrasted capitalist and communist modernities, associating the latter with authoritarian governments and lack of individual freedom, and associating the former with democratic political systems and active civil societies.² It posited that the social, political, and economic realms formed a coherent whole, such that transition to modernity in any one realm would trigger transition in the other two.³ Modernization theorists recognized, however, that communism offered an alternative path to modernity, one that they feared would be attractive to decolonizing societies in Asia and Africa, and to U.S. satellite countries in Latin America.⁴ Acknowledging the social, political, and economic dislocations associated with modernization, they theorized that the transition to modernity was a period in which societies were particularly vulnerable to communist revolutions, a view that gained credence after China's revolution in 1949.

For modernization theorists, rapid economic development was the key to deterring communist revolutions in the decolonizing societies of the global south. As Timothy Mitchell has demonstrated, the emergence of macroeconomics between the wars had produced "the economy" as a statistical object that was coterminous with states (and therefore with popu-

²Amadae, see n. 76.

³Latham, *Modernization as Ideology: American Social Science and "Nation Building" in the Kennedy Era*, see n. 191.

⁴Michael E. Latham, "Introduction: Modernization, International History, and the Cold War World," in *Staging Growth: Modernization, Development, and the Global Cold War*, ed. David C. Engerman et al. (Boston: University of Massachusetts Press, 2003), 9-10.

lations) and that could be measured by the gross national product (GNP), a macroeconomic indicator created by Simon Kuznets in 1934 to capture the value of all goods and services produced by labor and property supplied by the citizens of a country.⁵ Although GNP was only one of several available economic indicators, many postwar economists and policy makers viewed it as an index not only of the overall size of a national economy, but also of the well-being of a country's citizens and the modernity of its society. Rostow's *The Stages of Economic Growth: A Non-Communist Manifesto*, published in 1960, described the engineering of economic development — the creation of the conditions of self-sustaining economic growth — as a way to promote non-communist modernization in Asia, Africa, and Latin America. GNP (per capita) therefore became an index of modernization, and the concept of development came to encompass social, political, and economic transformations that would promote the growth of GNP. Modernization theorists used quantitative indicators of modernization — including per-capita measures of GNP, motor vehicles, physicians, newspapers, energy consumption, city-dwelling, agricultural employment, and education — to evaluate the “stage” individual countries had reached, and to plan and promote the development of countries that appeared to be lagging.⁶ All of these indicators required population measures, and planning development required planning for population growth.

Demographic transition theory, the discipline's unifying theory, described in Chapter One, fit neatly within the framework of modernization theory. Demographic transition theory linked the demographic past of North America and Western Europe to the demographic future of the rest of the world, positing that the modernization of North America and Western Europe had encouraged mortality decline followed by fertility decline, with rapid population growth in the interim. These changes culminated in population stationarity (neither growth nor decline) at low rates of both fertility and mortality. This schema divided the world into three categories, which mapped onto modernization theory's stages of growth:

⁵Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002); Mitchell, *Carbon Democracy: Political Power in the Age of Oil*, see n. 90.

⁶Seymour Martin Lipset, “Some Social Requisites of Democracy: Economic Development and Political Legitimacy,” *American Political Science Review* 53, no. 1 (1959): 76-77.

pre-transitional societies with high rates of fertility and mortality; transitional societies with declining mortality and still-high fertility; and post-transitional societies with low fertility and mortality. Within this framework, rates of fertility and mortality could serve as indices of development, and other development indices required population data as their denominators, guaranteeing demographic analysis a place at the center of modernization theory and efforts by the U.S. government and U.S.-based organizations to analyze and promote economic development and democratization according to the American model. Population estimates and projections were also critical for the Soviet Union and other societies that aimed to modernize according to its model, which relied on careful government planning of industrialization and economic growth.

To meet these needs, governments and inter- and non-governmental agencies seeking population information increasingly turned to demographers, who by then had become recognizable as experts on population dynamics. Whereas demographers had mainly focused their studies on the U.S. and Western Europe before the war, by the end of the war, the scope of their analysis encompassed the entire world, making it possible to speak of something called a global population. Yet demographers in the U.S. and Western Europe faced two major challenges in meeting the new demands for population estimates and projections. First, the types of population data required to estimate current population and project future population were simply not available for much of the world. Second, new demographic trends worldwide were beginning to challenge the fundamental premises of demographic transition theory. After World War II, fertility soared in North America, Western Europe, and Australia, producing the well-known “baby boom” and challenging the tenet of demographic transition theory that fertility could only decline. At the same time, international public health interventions dramatically reduced fertility in Asia, Africa, and Latin America outside of the context of modernization. The effect was unprecedented population growth that could not be predicted on the basis of demographic transition theory.

This chapter details the increased demand for demographic analysis during and after

World War II, and the growth this new demand engendered for demography, particularly for the employment of demographers in government and inter- and non-governmental agencies. It then explores demographers' perception of the paucity of global population data. I refer to this problem as "data friction," a concept I borrow from Paul Edwards, which he defines as "the great difficulty, cost, and slow speed of gathering large numbers of records in one place in a form suitable for massive calculation."⁷ As demographers turned their attention to Asia, Africa, and Latin America, they encountered substantial data friction in the form of data that were unavailable, lacked detail, and were incommensurable. I go on to detail three approaches demographers took to overcoming data friction, demonstrating the ways in which these approaches drew on demographic transition theory to facilitate the production of demographic data in places where they were not readily forthcoming. I conclude, however, with a discussion of the ways in which new demographic trends were beginning to challenge demographic transition theory, exploring the potentially destabilizing effect of these anomalies on demographic transition theory and the analytic tools and methods that depended on it. Together, data friction and the accumulation of theoretical anomalies amounted to a crisis of demographic legitimacy, challenging the possibility of scientific knowledge of current and future population size and structure at the global level.

3.1 Demography in War and Peace

While governments in North America and Western Europe had begun to utilize demographic analysis and population projection as tools of social and economic planning between the world wars, during World War II they attempted to turn demographic knowledge into a tool of military strategy. The Allied powers began to use estimates and projections of their own populations to coordinate military manpower, social services, and labor for defense and other critical industries. They also used estimates and projections of the populations of

⁷Paul N. Edwards, *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming* (Cambridge: MIT Press, 2010), 80.

other countries for military maneuvering and foreign policy planning. Analysis of an enemy's population structure could indicate its military strength, and analysis of an enemy's geographical population distribution could indicate strategic locations for bombing or for maneuvers to cut civilians off from supplies. The U.S. government also engaged demographers in its project of interning Japanese Americans, using demographic information to identify Japanese Americans and to locate internment camps.⁸

Frank Notestein, director of Princeton University's Office of Population Research (OPR), commented as early as 1942 that the increased reliance of the U.S. government on demographers made it difficult for his staff to complete its regular work because the war had "stimulated the interest of various governmental agencies in population and greatly increased the demands on our staff for reference and other technical assistance."⁹ In 1943, President Roosevelt invited the leadership of the Population Association of America (PAA) — demography's professional association — to a dinner at the White House in honor of PAA co-founder and NYU sociologist Henry Pratt Fairchild, indicating the development of the relationship between government and demography that had begun between the wars.¹⁰

During the war, OPR gained two new clients: the U.S. Department of State and the League of Nations. In 1941, OPR entered into a contract with the Office of the Geographer of the State Department, according to which Notestein and his team would produce demographic maps of various parts of the world and would provide "population data, and analyses and interpretations of population data, for the world, including among others trends of population growth, including natural increase and its components and some estimate of population change in the near future."¹¹ Demographic data — even the number of men of potential military age — were not readily available for many countries of the world, requiring analysis of the type I will discuss later in the chapter. The State Department's interest in long-term population projections suggests plans for potential postwar occupation or other

⁸Dorothy Thomas was involved in this effort. Oral history interview with Gretchen Condran, 6/8/2012.

⁹Frank W. Notestein, "Progress Report to the Carnegie Corporation," Mar. 16, 1942, folder 21, box 15.

¹⁰See n. 111.

¹¹Frank W. Notestein, "Memorandum of Agreement," 1942, folder 21, box 15.

ongoing involvement in other parts of the world. The rising wartime demand for demographic analyses indicates the rapidity with which governments had come to accept the claims of the new professional group of demographers — represented by the PAA — that they had the ability to estimate current population and project future population, and that these abilities would prove useful for purposes of domestic governance and foreign policy.

As the State Department formulated its wartime strategy, the League of Nations began to plan for postwar reconstruction. Its Economic, Financial and Transit Department, having relocated from Geneva to Princeton for the duration of the war, enlisted the help of OPR to produce population projections that would serve as the basis for postwar reconstruction and development programs. This project received additional funding from the Carnegie Corporation, and Notestein's contract with the State Department allowed OPR demographers to use data collected with State Department funds for their League of Nations work.

OPR's wartime contracts funded its expansion, and that of demography in general. During the war, Notestein hired psychologist and former clergyman Frank Lorimer, economist Wilbert Moore, and sociologists Kingsley Davis and Louise Kiser (wife of Milbank Memorial Fund demographer Clyde Kiser). Along with research associates Irene Taeuber and Dudley Kirk and graduate student Ansley Coale, this team produced four publications on the history and future of the population of Europe — *The Future Population of Europe and the Soviet Union, 1940-1970* by Frank Notestein et al. (1944), *Economic Demography of Eastern and Southern Europe* by Wilbert Moore (1945), *The Population of the Soviet Union: History and Prospects* by Frank Lorimer (1946), and *Europe's Population in the Inter-War Years* by Dudley Kirk (1946).¹² In the early postwar years, OPR demographers would also publish analyses and projections for the populations of Latin America, the Near East, India, and Japan.¹³

¹²Frank W. Notestein et al., *The Future Population of Europe and the Soviet Union: Population Projections 1940-1970* (Geneva: League of Nations, 1944); Wilbert E. Moore, *Economic Demography of Eastern and Southern Europe* (Geneva: League of Nations, 1945); Frank Lorimer, *The Population of the Soviet Union: History and Prospects* (Geneva: League of Nations, 1946); Dudley Kirk, *Europe's Population in the Interwar Years* (Geneva: League of Nations, 1946).

¹³See , n.d., folder 21, box 15.

In 1946, the PAA began meeting again after a wartime hiatus spurred by the U.S. government directive to avoid non-critical travel. Its 1946 meeting surveyed the postwar world population situation, and its 1947 meeting focused on projection methodology, indicating the importance of world population and its projection both within and beyond the field of demography. The U.K. counterpart to PAA, the Population Investigation Committee (PIC), found a home at the London School of Economics in 1938. The International Union for the Scientific Investigation of Population Problems (IUSIPP) had disbanded when the war broke out, but its leadership re-formed the organization in 1947 as the International Union for the Scientific Study of Population (IUSSP). In contrast to the IUSIPP, which had been an organization of national committees, the IUSSP was an organization of individual demographers, though membership required nomination and sponsorship by five current members.¹⁴ Members were to be “chosen on the basis of their scientific achievements and in such a way as to maintain a balanced representation among different countries and different fields of specialties.”¹⁵ Any country with five or more members was expected to form a national committee, consisting of those members, “to promote the interests of the Union in that country.”¹⁶ The PAA served as the U.S. committee and the PIC as the U.K. committee.

The president of the new IUSSP was French demographer Adolphe Landry, who had also been the last president of the IUSIPP before the war. Alfred Lotka and PIC director David Glass were two of seven vice presidents, with the others coming from Peru, Italy, China, Switzerland, and Poland.¹⁷ Frank Lorimer, who had moved to American University after the war, was the Union’s administrative director. IUSSP’s administrative offices were established in Washington D.C., with expenses for the first two years covered by a non-renewable grant from the Rockefeller Foundation, applied for by the PAA on behalf of the IUSSP and matched by a grant from the PAA itself.¹⁸ Over the next three decades, the IUSSP worked to expand

¹⁴Frank Lorimer to American National Committee of the IUSSP, Jan. 10, 1949, folder 6, box 2.

¹⁵Frank Lorimer, “Statement to Members,” Dec. 15, 1948, folder 6, box 2.

¹⁶Ibid.

¹⁷Ibid.

¹⁸Frank Lorimer to G. Mauco, Oct. 21, 1948, folder 6, box 2; Frank Lorimer to IUSSP Executive Committee, May 9, 1949, folder 6, box 2.

its membership, particularly to demographers in newly-independent countries, but as late as 1979, Miloš Macura of the U.N. complained after an IUSSP meeting that “I was rather dissatisfied [sic] to see that most of the organizers, authors and invited discussants were from economically developed countries.”¹⁹

3.1.1 Demography and Postwar Social and Economic Planning

Demography flourished after World War II at least in part because the early postwar period was a golden age of social and economic planning worldwide, and planners increasingly considered population projections crucial inputs to the planning process.²⁰ Planning of one kind or another was a common activity among governments at all levels, regardless of political ideology, in the immediate postwar period. While India, newly independent in 1947, followed the Soviet model of comprehensive 5-year plans, other states engaged in more limited planning activities. For example, the government of the U.K. rolled out new social welfare programs and the U.S. government subsidized the development of transportation infrastructure in the forms of interstate highways and airports. Keynesianism had reached its apex in the field of economics, and economists generally agreed that “mature” capitalist economies required a measure of governmental oversight, regulation, and stimulation.²¹ Demographers continued to advertise the utility of their expertise to these efforts, with Irene Taeuber stating in 1944 that “no modern nation can plan for its future without some assumptions as to the size and age composition of the population for which it is planning.”²² Taeuber and others insisted that all social, economic, and military planning is inherently planning *for* population

¹⁹Miloš Macura to Bruno Remiche, Jan. 15, 1979, folder 7, box 7.

²⁰Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, see n. 32; James Ferguson, *The Anti-Politics Machine: “Development,” Depoliticization, and Bureaucratic Power in Lesotho* (New York: Cambridge University Press, 1990); Joanna Lewis, *Empire State-Building: War and Welfare in Kenya, 1925-52* (Athens: Ohio University Press, 2000); Nick Cullather, *The Hungry World: America’s Cold War Battle Against Poverty in Asia* (Cambridge: Harvard University Press, 2010); Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity After World War II* (Cambridge: MIT Press, 1998).

²¹See, for example, Howard Brick, *Transcending Capitalism: Visions of a New Society in Modern American Thought* (Ithaca: Cornell University Press, 2006), 165.

²²Taeuber, “The Development of Population Predictions in Europe and the Americas,” see n. 146.

— planning to accommodate and meet the needs of future populations. Knowing the size of the potential military force — and that of other countries — remained important. The expansion of European welfare states required knowledge of the number of people who would be eligible for various programs, and industrial planning, both in already-industrial states and in states that hoped to industrialize, relied on projections of the size and composition of the labor force and the markets for various goods and services.

The popularity of social and economic planning in the immediate postwar period increased the demand for population projections and intensified the reliance of governments, business, international agencies, and nongovernmental organizations on demographers that the PAA and IUSIPP had first tried to stimulate between the wars. By 1952, PAA president Rupert Vance could boast that “population studies hold high prestige in scientific circles: our analyses are of the greatest practical use and are eagerly awaited by municipalities, planning boards, and administrators.”²³ During and immediately after the war, confidence in the ability of demographers to predict future population was high. Kingsley Davis articulated this confidence in a 1946 article in *Forum* magazine, where he stated that “demographic trends manifest such regularity that when the basic figures are known, systematic estimates can be made 20 to 50 years in advance; and recent research has added greatly to the technologies of estimating.”²⁴ An unsigned article published in *Population Index* in the same year claimed that, between the wars, “with improved data, new techniques, and the precise measurement of the demographic transition, . . . demography tended to become science rather than literature”²⁵ The field of demography had, by demonstrating the ability of demographers to predict future population and by insisting on the relevance of population estimates and projections to the programs of governments and inter- and non-governmental agencies, achieved the clientele it needed for sustained support.

²³Rupert Vance, “Is Theory for Demographers?” *Social Forces* 31, no. 1 (1952): 9.

²⁴Kingsley Davis, “The Shifting Balance of World Population, part I,” *Forum*, Jan. 1946: 419.

²⁵See n. 175.

3.1.2 The United Nations: Global Governance for a Global Population

One of demography's most important new clients after World War II was the United Nations, established in 1945 as a successor to the League of Nations by the United States, the United Kingdom, the Soviet Union, and China. Its fundamental mandates were to maintain world peace and improve the human condition, and early delegates believed that population played an important role in both projects. During World War II, the Axis powers had validated Warren Thompson's warnings in *Danger Spots in World Population*, discussed in Chapter One, by justifying their territorial aggression in terms of population growth and the attendant need for more land, and had used population — through pronatalist, expansionist, and genocidal policies — as a strategy for exercising power on the world stage and securing additional territory.²⁶ After the war, U.N. delegates and policymakers in North America and Europe understood population dynamics in various parts of the world to pose a potential threat, both to standards of living in those places, and to the geopolitical order.²⁷ For that reason, they viewed planning for and of population as critical to maintaining world peace and improving the human condition. They understood knowledge of past, current, and future population dynamics as critical to the planning for population that would help to raise global standards of living. They also viewed the planning *of* population — the shaping of future population — as a critical activity, seeing population itself as an independent variable in the world peace equation and as an object to be monitored and managed.²⁸ As will be discussed in greater detail below, U.N. delegates encouraged member states to count, project, plan, and plan for their populations, stating that

in modern times, . . . government has become more and more entrusted with the planning of economic and social programmes; this requires a fairly accurate

²⁶Thompson, *Danger Spots in World Population*, see n. 196.

²⁷These threats will be discussed at greater length in Chapter Four.

²⁸United Nations Population Division, *Manual I: Methods of Estimating Total Population for Current Dates*, Manuals on Methods of Estimating Population (New York: United Nations Department of Social Affairs, 1952).

knowledge of the size of the country's population, its rate of growth, its distribution among the various towns and provinces, its composition by sex, age, ethnic and educational groups, and the extent to which it is engaged in, or depends on, various branches of economic activity.²⁹

However, to the extent that the U.N. aspired to global governance, it also sought to count, project, plan, and plan for a new statistical object: global population.

The 1946 establishment of a Population Commission within the U.N. Economic and Social Council (ECOSOC) reflected broad acceptance of Taeuber's 1944 contention that "estimates of the future trends of population for regions, continents and perhaps even the world are essential for any international planning which is to offer reasonable possibilities for the creation of a future world order in which accumulating economic and political frictions will not again lead to world war," and signaled a new effort to plan and plan for global population.³⁰ Ten years later, a U.N. representative would reiterate that "all planning procedures for economic and social development imply judgments of future population."³¹ Whereas the U.N. Statistical Commission was charged with collecting and maintaining the population data that would serve as the denominator for various indicators of modernization and the quality of human life, the Population Commission was charged with analyzing those data and projecting future population, both as the basis of economic and social planning — planning for population — and to inform potential population policies — planning of population.³² On the twentieth anniversary of the establishment of the Population Commission, U.N. Secretary-General U Thant emphasized the importance of planning both for and of population, attributing to the Population Commission "the growing awareness of world population problems in general, and the awareness that action by the international community is needed both to develop

²⁹United Nations Population Division, *Manual I: Methods of Estimating Total Population for Current Dates*, see n. 28, 1.

³⁰Taeuber, "The Development of Population Predictions, in Europe and the Americas," see n. 146.

³¹John V. Grauman, "Towards a General Methodology of Population Projections, by Sex and Age, for Countries with Only Moderate Amounts of Statistics," in *Proceedings*, World Population Conference, 1954, Rome, by the United Nations (New York: United Nations, 1954), 25.

³²"Correspondence regarding statistical work on population," 1946, United Nations Archive, New York, NY, folder 10, box 5, series 543; John D. Durand, "Correspondence," 1950, folder 1, box 7, series 920.

world resources and to moderate population trends.”³³ Developing world resources refers to planning for population; moderating population trends refers to planning of population. In many ways, planning for and of population were more fantasy than reality in the postwar period and, as James C. Scott has demonstrated, the high modernist ideals that animated postwar planning largely failed in the task of improving the human condition.³⁴ Nonetheless, optimism regarding the promise of planning was high in the immediate postwar period, and population was at the center of the vision of a planned future.

The Population Commission initially included one representative from each of twelve member states: Australia, Brazil, Canada, China, France, the Netherlands, Peru, the U.K., the U.S., the U.S.S.R., the Ukrainian S.S.R., and Yugoslavia. Its chairman was Alberto Arca Parro of Peru, the vice-chairman was V.A. Rabichko of Ukraine, and the Rapporteur was David Glass of the U.K.’s Population Investigation Committee.³⁵ Arca Parro and Glass were also vice-presidents of the IUSSP, indicating the close relationship between that organization and the U.N. Population Commission. Membership was initially meant to rotate between countries, but the U.S. maintained a permanent presence. The first U.S. delegate was Philip Hauser of the Census Bureau, followed in 1951 by Kingsley Davis, then at Columbia University, and in 1961 by Ansley Coale at Princeton. Hauser has described those present at the first meeting of the Population Commission as “mature demographers, sociologists, economists or statisticians, well aware of the world population situation at the time and of the gaps in demographic statistics and knowledge,” suggesting the Commission’s scientific character.³⁶

³³“Secretary-General’s Statement on 20th Anniversary of the Population Commission,” 1966, folder 33, box 4, series 885.

³⁴Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, see n. 32.

³⁵The Population Commission was also to include representatives from the Economic and Employment Commission, the Statistical Commission, the Social Commission, and the Interim Commission of the World Health Organization (to be replaced by a member of the World Health Organization when it was organized). United Nations, *Yearbook of the United Nations, 1946-47* (New York: United Nations, 1947), 511.

³⁶Philip M. Hauser, “The Early Years of the Population Commission,” *Population Bulletin of the United Nations* 19 (1986): 3.

The technical labor of the Population Commission was performed by the staff of the Population Division, which also carried out studies requested by other U.N. agencies and conducted research on its own initiative.³⁷ Notestein speculated that the establishment of the Population Division had been inspired by the success of OPR's wartime population projection work, which had demonstrated the importance of demographic analysis to governance and policy.³⁸ The fact that Notestein served in an interim capacity as the Population Division's first director supports this contention. Pascal Whelpton, originator of the cohort component projection method, became the Division's first permanent director in 1950, indicating the importance of population projection among the Population Division's duties. Notestein's former student John Durand succeeded Whelpton as director in 1953, suggesting the continuation of an intimate link between OPR and the U.N. Population Division.³⁹ In addition to analyzing the population data collected by the Statistical Division and projecting future population, the Population Division also surveyed and kept records of the population policies of U.N. member states.⁴⁰

The increased demand for demographic products after the war led to the increased employment of demographers — especially those associated with OPR — by governments and by inter-governmental and non-governmental agencies. At mid-century, there were more jobs for demographers than there were demographers,⁴¹ though their numbers increased over the next few decades as the G.I. bill expanded the ranks of higher education and as new sources of funding encouraged more universities to offer courses in population, as will be discussed in Chapter Five.⁴² Examples of demographers employed by governmental agencies include Notestein, Whelpton, and Durand at the U.N. Population Division; former OPR research assistant Dudley Kirk, who served as the Chief of the Planning Staff for the Office of In-

³⁷Hauser, "The Early Years of the Population Commission," see n. 36.

³⁸Frank W. Notestein to Dana Munro, Dec. 26, 1946, folder 21, box 15.

³⁹Hauser, "The Early Years of the Population Commission," see n. 36.

⁴⁰See correspondence between John Durand and Alfred Sauvy about Sauvy's 1950 "Survey of demographic legislation," folder 1, box 7, series 920, United Nations Archives.

⁴¹Notestein remembered in a 1973 interview that in mid-century "the field had more openings than there were people", see n. 59, 14.

⁴²See n. 85.

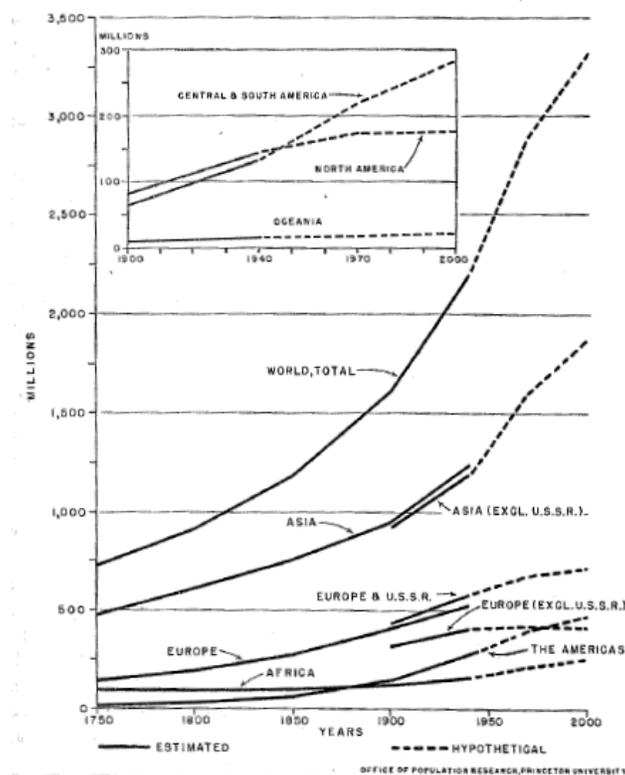
ternational and Functional Intelligence of the U.S. Department of State from 1947 to 1954; Philip Hauser, who served as a consultant to the Census Bureau; and Irene Taeuber's husband Conrad, who worked for the U.N. Food and Agriculture Organization (FAO) until 1951 and then transferred to the U.S. Census Bureau as assistant director of its Population Division. In Great Britain, David Glass was heavily involved with the Royal Commission on Population, which investigated the causes and consequences of recent fertility declines, and the French government created its own population research center, the Institut National d'Études Démographiques (INED), appointing demographer Alfred Sauvy as its director. The increasing employment of demographers in government and inter- and non-governmental agencies suggests that, by the end of World War II, the field had established its authority to analyze and predict population, and had established the utility of population analysis for administration and planning.

3.2 Data Friction: Challenges to World Population Estimation and Projection

Delegates to the U.N.'s ECOSOC viewed three tasks as critical to their mission of improving the human condition and maintaining peace in the immediate postwar years: ensuring the adequate production and distribution of food; repairing the destruction wrought by the war, particularly in Europe; and promoting economic development in Asia, Africa, and Latin America, many parts of which were still under colonial rule or had come under U.N. mandate after the war. Delegates from both of the world's postwar superpowers, the U.S. and the U.S.S.R., viewed economic development and global modernization, each according to its own model, as key to maintaining global hegemony. Members of EcoSoc viewed population projections as a prerequisite to each of its tasks — feeding the world, rebuilding Europe, and modernizing the rest of the world — but feeding the world was initially its most pressing task. In 1944, University of Chicago economist Theodore Schultz organized a

conference titled “Food in International Relations,” to lay a scientific foundation for postwar global food policy and for the work of the incipient FAO.⁴³ Schultz asked Notestein to present on expected world population to the year 2000. In preparation for the meeting, Notestein made the first projections for the world as a whole on the basis of the cohort component projection method and demographic transition theory. Notestein projected the world’s population separately by continent, facilitating the assessment of the balance of food and population in each region and the creation of policy to correct for imbalances.

Figure 3.1: Notestein’s 1944 Global Population Projection



At the 1944 meeting, Notestein projected a world population of “at least 3 billion people by the year 2000.”⁴⁴ Figure 3.1 shows his chart of past and projected global population growth, which traces an approximately logistic — or S-shaped — growth trajectory.⁴⁵ From

⁴³The proceedings were published as Theodore W. Schultz, ed., *Food For the World* (New York: Arno, 1945).

⁴⁴Actual world population in the year 2000 is now estimated at about 6 billion.

⁴⁵Frank W. Notestein, “Population—The Long View,” in *Food for the World*, ed. Theodore Schultz (Chicago: University of Chicago Press, 1945), 57.

the vantage point of the twenty-first century, there were two major problems with Notestein's 1944 projection — the data and theory on which it was based. As demand for projections of the populations of countries outside of North America and Western Europe grew in the immediate postwar period, demographers and their clients realized that the requisite data for cohort component projections were either unreliable or nonexistent in much of the world. Moreover, new demographic trends — the baby boom in North America, Western Europe, and Australia and rapid mortality declines in the rest of the world — were beginning to challenge the utility of demographic transition theory to drive cohort component projections. This section discusses data friction and the next discusses three ways in which demographers attempted to overcome data friction; the final section discusses anomalies that began to accrue to demographic transition theory in the immediate postwar period and the challenges they posed to demography's newly-acquired authority.

One of ECOSOC's main functions was to collect, compile, and distribute social, demographic, and economic data for U.N. member states. Publications its delegates planned at the Council's establishment included a *Monthly Bulletin of Statistics*, consisting of "economic and social statistics of current interest to international organizations and Members of the United Nations"; quarterly *Population and Vital Statistics Reports*, which would contain "the latest estimate of population for each area of the world, and the latest census totals," as well as occasional "special tables dealing with population or vital statistics"; a *Statistical Yearbook*, which presented social, economic, and demographic data; a *Demographic Yearbook*, which included demographic data beyond those presented in the *Statistical Yearbook*, such as the information necessary to carry out cohort component population projections — age-sex structure and rates of migration, mortality, and fertility, also by race, nationality, and urban/rural status — along with information about marriage and divorce, literacy, and the labor force, and listings of population policies in effect in each member state; and data arising from special research projects, such as the report *National Income Statistics of Var-*

ious Countries, 1938-1947.⁴⁶ The Population Division also intended that the *Demographic Yearbook* would rotate through a set of themes, beginning with fertility in 1951 and including mortality, migration, and population characteristics in subsequent years, with a historical treatment of each so far as the data would allow.⁴⁷

EcoSoc's plans for the analysis and publication of demographic, social, and economic data for its member states suggest that it aspired to make the Statistical Division and the Population Division centers of calculation, to use Bruno Latour's phrase. Located at its headquarters in New York, these divisions would be places where demographers and other social scientists could compile and analyze data collected by individual member states, facilitating international comparisons and global social and economic planning. Population data were only one of many types of social and economic statistics EcoSoc planned to collect, but they formed the critical denominator to indices of modernization and development. Creating a "center of calculation" requires that information from the "periphery" be rendered into "immutable and combinable mobiles" — that is, heterogeneous information must be turned into stable, portable, and commensurable data.⁴⁸ Demographers working with the U.N. encountered three forms of data friction in their efforts to develop a center of demographic calculation: in many countries, demographic data were unavailable or incomplete, not sufficiently detailed (that is, lacking vital statistics and not classified by age and sex), and incommensurable.

3.2.1 Unavailable data

As discussed in Chapter Two, demographers rely for their analyses on data collected for other purposes, usually by governments or other administrative bodies. For much of the world, the minimum data required for population estimation and projection had simply not been collected. Between the wars, the Economic Intelligence Service of the League of

⁴⁶United Nations, *Yearbook of the United Nations, 1947-48* (New York: United Nations, 1948), 564-565.

⁴⁷Durand, see n. 32.

⁴⁸Latour, *Science in Action: How to Follow Scientists and Engineers Through Society*, see n. 15, 227.

Nations had published estimates of the total population of each country, but demographers did not consider these data reliable, and they did not include age-sex structure, which was critical to the cohort component projection method.⁴⁹ As censuses had never been taken in some parts of Africa and Asia, League of Nations figures were estimates or “reasoned guesses,” though demographers argued that they were “probably as near the truth as some of the so-called censuses” in other places. This statement impugned the quality of those censuses rather than praising the quality of the estimates.⁵⁰ Moreover, although the League of Nations estimates were updated annually, censuses were rarely conducted more frequently than every ten years; these estimates were therefore based on extrapolation of the growth rate calculated from the previous two censuses or on vital registration data — civil records of births, marriages, divorces, and deaths — which were also incomplete. Sometimes the same figure was used year after year.⁵¹

In the presentation of his 1944 global population projection, Notestein admitted that the data he used were “estimates even at the most recent dates,” and “in the cases of Asia, Africa, and Central and South America they are little better than informed guesses.”⁵² In a 1949 review of these and other early postwar population projections, Taeuber acknowledged that, for Asia, “the exact level of present fertility was largely a matter of conjecture based on intricate manipulations of faulty data,” and “in Africa between the Sahara and the Union [of South Africa] accurate counts, age distributions, and current vital statistics were all lacking to guide the evaluation of the present or the assessment of the future.”⁵³ Indeed, data were least readily available for the parts of the world the U.N. was most intent on “developing”: Africa, Asia, and Latin America.

Population size and structure in Africa, Asia, and Latin America were not completely

⁴⁹Robert R. Kuczynski, *Colonial Population* (London: Oxford University Press, 1937), 1.

⁵⁰In 1937, Robert Kuczynski reported that there had never been a census in the Belgian Congo, the Kuria Muria Islands, Lebanon, Morocco, Mozambique, New Guinea, New Hebrides, Papua, Rio de Oro, Ruanda-Urundi, Sarawak, Socotra, Somaliland, Sudan, Surinam, Syria, Tangier, Togoland, or Trans-Jordan. In many other colonial territories, censuses covered only the European population. *ibid.*, 5-6.

⁵¹*Ibid.*, 7-9.

⁵²Notestein, “Population—The Long View,” see n. 45, 37.

⁵³Taeuber, “Literature on Future Populations,” see n. 103, 2.

unknown, as many of the countries in those regions did take censuses and some (particularly in Latin America) had vital registration systems. However, those data were often incomplete, unreliable, or simply not available to demographers working in the United States or Western Europe. China is a notorious example of data unavailability. Its population had long been a mystery to Western demographers, and was frequently described simply as “teeming millions,” suggesting the racial anxiety that motivated newspaper magnate Edward Scripps to establish the Scripps Foundation for Research on Population Problems in 1922 to monitor population growth in East Asia.⁵⁴ Despite the collection of detailed population data by the government of China,⁵⁵ those data were not available to demographers in the West. As a result, estimates of China’s population by U.S. and European demographers were numerous and disparate. Thompson stated in 1929 that “there is much popular misapprehension regarding the size of China’s population. The figure 400,000,000, so often used, seems to have a strange fascination for most people.” Although this figure was based on an official estimate known as the “post-office estimate,” Thompson did not trust it. He preferred the smaller figure of 315,000,000, which was based on a 1904 estimate by the then-U.S. minister to China, to which Thompson applied an arbitrary 10% increase. He acknowledged, however, that his figures were only estimates, “just as the ‘post-office estimate,’ the so-called ‘Minchengpu census’ of 1910, and other so-called censuses are estimates.”⁵⁶ In 1940, vital statistician Walter Willcox described China as “the hardest nut to crack in estimating the world’s population,” as it made up “seven-eighths of the one-third of the world’s population not yet counted by censuses.”⁵⁷ By 1944 U.S.-based demographers knew the population of China with no more certainty. As Notestein stated in his Chicago presentation, “opinions concerning the size of the present population [of China] differ by more than the total population of the United

⁵⁴50. The U.S. was also home to hundreds of millions, but they were apparently not “teeming” Thompson, “Population,” see n. 183.

⁵⁵Some of these data are described in Tommy Bengtsson et al., *Life Under Pressure: Mortality and Living Standards in Europe and Asia, 1700-1900* (Cambridge: MIT Press, 2004).

⁵⁶Thompson, “Population,” see n. 183, 50-51.

⁵⁷Willcox, *Studies in American Demography*, see n. 10, 511.

States.”⁵⁸ When asked in the same year by the Rockefeller Foundation about the prospects for demographic research on China, Notestein responded that he was “not sure that solid work can be done on the morass of inadequate statistic [sic] which characterize China.”⁵⁹

Population data were not much more available or reliable for colonial territories, which were home to an estimated 13% of the world’s population in 1934 (excluding self-governing territories, such as the British Dominions and India).⁶⁰ Western European countries took censuses and maintained vital registration systems in their colonies, dependencies, and mandated territories, but in a 1937 book titled *Colonial Populations*, British demographer Robert Kuczynski demonstrated that, although “official data on the total population are available for every colony in the whole world,” many of those data were “wide of the mark” and insufficiently detailed for demographic analysis.⁶¹ In some places, Kuczynski declared that “all population figures are wild guesses.”⁶² The British government had scrapped plans for its 1941 colonial censuses when World War II broke out, and in some parts of the British Empire, the 1931 census had been postponed indefinitely as a result of the global economic depression.⁶³

Kuczynski complained that “demographic data are most scanty for the largest Colonies and most ample for the smallest.”⁶⁴ Censuses had been taken every ten years in Anglophone West Africa from 1871 to 1931, but these were far from complete, and much less so for the African denizens than for the European and Asian denizens of the colonies. Indeed these censused differed markedly from those that had become routine in North America and Western Europe because, in many colonies, complete enumerations were done only in urban areas. In other areas, population was estimated by local authorities (often representing structures of indirect rule) or by administrative records. In 1931, in the whole of Anglophone

⁵⁸Notestein, “Population—The Long View,” see n. 45, 38.

⁵⁹Joe Willits, “Report of Interview with Notestein for Rockefeller Foundation Grant,” Aug. 15, 1944, box A82, series 200s, record group 1.1.

⁶⁰Kuczynski, *Colonial Population*, see n. 49, 1.

⁶¹Ibid., vii.

⁶²Ibid., viii.

⁶³Ibid., xi.

⁶⁴Kuczynski, *Demographic Survey of the British Colonial Empire*, see n. 14, v.

West Africa, Kuczynski estimated that censuses had counted only about 4% of the indigenous population.⁶⁵ Colonial officers had made informal counts in rural parts of Gambia and Gold Coast (today Ghana), covering another 12% of the 1931 indigenous population of Anglophone West Africa. Therefore, as Kuczynski stated, for the remaining “five-sixths of the total native population the figures are estimates, based in Nigeria on the tax rolls of adult males and in Sierra Leone on house-tax lists.”⁶⁶ Such methods of estimation were reminiscent of the political arithmetic discussed in Chapter One, which used mathematical formulae to estimate population on the basis of tax rolls, chimneys, or windows rather than enumerating people directly.⁶⁷

Kuczynski impugned these political arithmetic methods of estimating population, contending that methods of estimating colonial populations were such that “people who have trusted one or another figure would shudder if they discovered how it was computed.” For example, the 1931 census of Hong Kong reported that “the amount of nightsoil now being collected approximates to 2,500 piculs or nearly four million taels, which, at taels 3 per head, gives a population of over 1,300,000, without allowing for wastage.”⁶⁸ In this instance, population was estimated not by counting people, but by measuring their fecal production. Kuczynski likely expected his fellow demographers to “shudder” not just at the idea of measuring “nightsoil,” but also at substituting the resulting figure for a full census.

The relative paucity of colonial population data presented a stark contrast to the abundance of population data in Europe, where people had been counted in and exposed to what Ian Hacking has described as an “avalanche of printed numbers” since the late nineteenth century.⁶⁹ As discussed in Chapter One, the collection of social and demographic data at the individual level began in North America and Western Europe at the end of the eighteenth

⁶⁵Kuczynski, *Demographic Survey of the British Colonial Empire*, see n. 14, 1; Kuczynski, *Colonial Population*, see n. 49, xi.

⁶⁶He did not indicate how he estimated that the uncounted people made up five-sixths of the population. Kuczynski, *Demographic Survey of the British Colonial Empire*, see n. 14, 2.

⁶⁷Rusnock, “Biopolitics: Political Arithmetic in the Enlightenment,” see n. 26.

⁶⁸Quoted in Kuczynski, *Colonial Population*, see n. 49, vii, note I.

⁶⁹Hacking, “Biopower and the Avalanche of Printed Numbers,” see n. 32.

century as a critical adjunct to the project of democratic self-government, which required detailed surveillance and the establishment of individual relationships between states and citizens.⁷⁰ If, as Hacking and others have argued, censuses are a tool of biopower, their incomplete coverage in colonial territories indicates that colonial biopower was of a different order than metropolitan biopower, requiring different types of population statistics. The use of political arithmetic rather than censuses supports Megan Vaughan's contention that colonial biopower managed populations *en masse* to administer labor extraction and taxation, rather than producing individual subject-citizens, as was arguably the case with metropolitan censuses.⁷¹ The difference in these statistics lends weight to Frederick Cooper's contention that colonial power was "more arterial than capillary," with "capillary" power referring to Foucault's concept of governmentality, the diffusion of power throughout European and North American societies through such forms of discipline as prisons, educational institutions, and statistics.⁷²

Many colonial governments lacked the budget and staff required to carry out a complete census or to maintain systems of vital registration. In Northern Rhodesia (now Zambia), the weakness of the colonial statistical apparatus was apparent in the report of the 1931 census, which stated that "the Census Office Staff consisted of the director, one Lady Clark and one (native) office boy," and continued that "neither of the two European members of the staff have had previous experience of census duties. The results obtained are therefore the work of amateurs," the word "amateur" signaling a contrast to the professional demographers and statisticians who carried out metropolitan censuses beginning between the wars.⁷³ The colonial government of Nigeria had spent 5,000 pounds sterling on its 1931 census, which was 0.01% of its decennial budget.⁷⁴ In describing the results of that census, Kuczynski reported

⁷⁰See, for example: Rose, "Governing By Numbers: Figuring Out Democracy," see n. 38; Cohen, see n. 38.

⁷¹Megan Vaughan, *Curing Their Ills: Colonial Power and African Illness* (Stanford: Stanford University Press, 1991).

⁷²Frederick Cooper, "Conflict and Connection: Rethinking Colonial African History," *American Historical Review* 99, no. 5 (1994): 1533.

⁷³Quoted in Kuczynski, *Colonial Population*, see n. 49, x.

⁷⁴*Ibid.*, xi.

that “all one can safely say is that the population was probably not under 18,500,000 and not over 22,000,000.”⁷⁵ Nigeria was not the only colony for which population enumeration was rather vague. Kuczynski also noted that “the census figures of the adjoining colonies of French West and Equatorial Africa are certainly not more trustworthy than those of Nigeria, and the same is true of some other important colonial and mandated areas.”⁷⁶ Vital registration data were similarly wanting. Despite the fact that registration of births and deaths was, by 1926, compulsory in the British Colonial Empire, it actually covered only about 6% of the African population in Sierra Leone, 7% in Gambia, 1% in Nigeria and the Cameroons, and 9% in Gold Coast and Togoland.⁷⁷

Small budgets and imprecise data suggest either the weakness of colonial states or the irrelevance of detailed population data to them. Censuses and vital registers facilitate state power, but also require that states be powerful enough to find people on census day and compel them to submit to enumeration. Colonial governments may simply have been too weak and underfunded to conduct complete censuses. The incompleteness of vital registration, especially given the fact that it was “compulsory,” again suggests the weakness of colonial states and resistance of colonial populations. But it is also possible that colonial governments simply had no need for the kind of detailed population data produced by metropolitan censuses and therefore devoted to the task only the financial and human resources necessary to produce data relevant to colonial administration and extraction.

James C. Scott argues that censuses make populations legible to states. However, these examples of colonial censuses suggest that different types of government and different relationships between states and subjects require different types of legibility.⁷⁸ The difference between metropolitan and colonial population data suggests that colonial governments sought a type of legibility that would facilitate the extraction of wealth, labor, and resources, rather

⁷⁵Kuczynski, *Demographic Survey of the British Colonial Empire*, see n. 14, 2.

⁷⁶Ibid., 6.

⁷⁷Ibid., 6-7.

⁷⁸Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, see n. 32.

than a type of legibility that would facilitate self-governing citizenship. Colonial censuses worked, but not for the same purposes as metropolitan censuses. India provides a striking counterexample to these generalizations about colonial demographic data. Although India lacked vital registration, it had complete decadal censuses dating back to 1871, indicating that colonial states had the ability to collect more detailed population data when there was reason to do so and when the indigenous population was similarly invested in being enumerated. Censuses in India had long been much more complete and regular than in Africa, in part because India was valued much more by the Crown for its revenue, resources, and strategic location, but also in part because Indian nationalists used censuses and the data collected by them strategically in their anti-colonial projects.⁷⁹

3.2.2 Inadequate Data

Where population data were available, they often lacked the detail required to project population into the future — vital rates and age and sex categories. In contrast to censuses in North America and Western Europe, which enumerated each citizen individually, colonial censuses often reported only the number of people estimated for each age-sex-race category that was relevant for colonial rule and for the extraction of wealth and labor. A useful comparison is with the slave schedules in U.S. censuses before the Civil War, which recorded only the names of slaves and of their owners, omitting information about family relationships, education, occupation, and other data that were collected for the free population of the United States beginning in 1850.⁸⁰ If age or sex were distinguished at all in colonial censuses, the population was often “subdivided merely into adult males, adult females, and children,”⁸¹ which would give an estimate of the colony’s tax base and labor availability, indicating the imperial view of colonial population as a resource to be extracted or extracted from, rather than a citizenry to be governed. As stated above, the lack of detailed census

⁷⁹Guha, see n. 36; Cohn, see n. 35.

⁸⁰Anderson, *The American Census: A Social History*, see n. 25.

⁸¹Kuczynski, *Colonial Population*, see n. 49, viii.

data for indigenous populations could also be read as a sign of the weakness of colonial states, or the resistance of colonial populations to enumeration, which is understandable when enumeration is the basis for taxation or extraction but not representation.⁸²

Although Kuczynski sharply critiqued colonial censuses for want of the detail necessary for demographic analysis, this lack of detail didn't make colonial population data objectively bad. Rather, they were good enough for colonial administration, but not good enough for cohort component population projections. Here I use the phrase "good enough" to mean usable for the purpose at hand; it is not a subjective evaluation. More broadly, I am arguing that the criteria for data quality and precision — even for counting units that exist only in integer quantities, such as people — are not transhistorical.⁸³ The colonial administrators who collected data for purposes of governance were not failing to meet an existing standard of data quality. Rather, the standard by which Kuczynski and U.N. demographers evaluated colonial population data did not yet exist at the time the data were produced, or did not exist among the people who produced them. While colonial population data had been perfectly suitable for the purposes of colonial administration and extraction, it was only when Kuczynski attempted to assemble these data in a form that would make colonial territories legible to demographers by turning them into quantities and rates that they began to appear inadequate.

Beginning between the wars and increasingly after World War II, however, these data were no longer "good enough" for colonial administration, either. European colonial powers — notably Great Britain, France, and Portugal — had launched development programs in their colonies as a way to justify continued political domination, and increasingly demanded population estimates and projections to facilitate development planning.⁸⁴ The British Colo-

⁸²James C. Scott, *Weapons of the Weak: Everyday Forms of Peasant Resistance* (New Haven: Yale University Press, 1985); In the United States, censuses serve both purposes (taxation and representation), so there are incentives and disincentives for both underenumeration and overenumeration. Anderson, *The American Census: A Social History*, see n. 25.

⁸³For more on the social nature of precision, see M. Norton Wise, ed., *The Values of Precision* (Princeton: Princeton University Press, 1995).

⁸⁴Ittmann, "Demography as Policy Science in the British Empire, 1918-1969," see n. 173; Frederick Cooper, *Decolonization and African Society: The Labor Question in French and British Africa* (New York: Cambridge

nial Office passed the Colonial Development and Welfare Act of 1940 in response to strikes and uprisings throughout the West Indies and Africa. In contrast to the 1929 Colonial Development Act, which aimed to increase the capacity of colonial economies and expand their trade with the U.K., the Colonial Development and Welfare Act sought to improve the standards of living of Britain's colonial subjects, including the provision of health care and education.⁸⁵ Kuczynski became an official advisor to the Colonial Office, charged with surveying available population data as the basis for colonial development and welfare programs.⁸⁶

Examining the available population data for the British Colonial Empire (that is, the territories governed by the Colonial Office), Kuczynski complained that, as a result of the sparsity of vital data, he could say little definitively about fertility trends. He noted for Anglophone West Africa that “the available data on fertility and on the incidence of venereal diseases are so scanty and so uncertain that it is impossible to draw any final conclusions,” and that “nothing is known concerning fertility in rural areas for the last two decades.” However, on the basis of reports by medical officers of the prevalence of syphilis and gonorrhea, and of typical birth spacing of two or three years, Kuczynski argued that there was “no justification for assuming that fertility of native women is higher than it was in England 60 years ago, and it may still be lower.”⁸⁷ Incompleteness in birth registration also proved a challenge to the computation of infant mortality rates, which are calculated as the number of deaths under one year of age per thousand live births, therefore requiring an accurate count of both births and deaths. Kuczynski argued that reports by Colonial Officers of excessively high infant mortality rates — often as high as 400 per thousand — were “defective owing to incomplete registration of births.”⁸⁸

University Press, 1996); Lewis, see n. 20; Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, see n. 32.

⁸⁵Cooper, *Decolonization and African Society: The Labor Question in French and British Africa*, see n. 84, 67.

⁸⁶Ittmann, “The Colonial Office and the Population Question in the British Empire, 1918-62,” see n. 55, 67; Ittmann, “Demography as Policy Science in the British Empire, 1918-1969,” see n. 173.

⁸⁷Kuczynski, *Demographic Survey of the British Colonial Empire*, see n. 14, 8.

⁸⁸*Ibid.*, 12.

Kuczynski acknowledged that, despite the relative paucity of data collected by censuses and vital registration systems in the British Colonial Empire, colonial officers knew quite a bit about the populations they administered. As he put it, “they cannot carry on without somehow forming an idea as to whether the population is growing, whether infant mortality is excessive, whether the incidence of specific diseases is increasing, &c.”⁸⁹ Officers recorded these ideas in annual reports, making them part of the corpus of colonial population data, along with census returns and vital registers. Kuczynski criticized these impressionistic data, arguing that they “submit as facts what are actually reasoned guesses,” and that their reader “finds over and over again a consensus of opinion without any real evidence to support this opinion.”⁹⁰ This critique indicates Kuczynski’s efforts not only to turn narrative reports into quantitative data, but also to redefine demographic “facts” and “evidence,” discounting the observations and analysis of colonial officers and privileging standard counts, from which demographic rates could be calculated. He argued that demographers could not take narrative information as fact because narrative information was “opinion” and, in the realm of population, “the opinions of even the most competent observers so frequently prove to be wrong.”⁹¹ As an example of a wrong opinion, he pointed to a case in which “a Census Commissioner, who was an outstanding Administrative Officer, and the Senior Health Officer both wrote that 90 per cent. of the children died before reaching the age of six and many thereafter, and that at the same time the population was increasing rapidly owing to a large excess of births over deaths.”⁹² Kuczynski argued that both statements could not possibly be true; with child mortality that high, families would need to have an average of 10 daughters (and presumably an equal number of sons) simply to keep the population from declining. This observation drew on the net reproduction rate Kuczynski had developed in his work on Europe in the 1920s, discussed in Chapter One, and suggests an attempt to shift authority for population analysis from the subjective judgment of local observers to the objective

⁸⁹Kuczynski, *Demographic Survey of the British Colonial Empire*, see n. 14, v.

⁹⁰*Ibid.*, v.

⁹¹*Ibid.*, vi.

⁹²*Ibid.*, vi.

calculation of demographers, even if they lacked knowledge of the local context.

As Kuczynski contended, while colonial officers could be trusted to count people and vital events, they could not be trusted to interpret those counts. With this argument, he advanced a claim for a new type of knowledge and expertise: only trained demographers could state definitively whether populations were increasing or decreasing, or whether fertility or mortality was high or low and rising or falling. He maintained further that, “to form a correct opinion on demographic matters without conclusive figures is well-nigh impossible because demographic facts are not obvious.”⁹³ This is an interesting statement because, in many ways, demographic facts are obvious: people can be seen with the naked eye and counted without any special instruments, they only come in integer quantities, and they are always either alive or dead.

What Kuczynski meant, of course, was that the *meaning* of these facts was not obvious, and he was claiming the authority to judge those meanings for the new professional group of demographers. For this group, he asserted a more scientific and generalizable form of knowledge than that held by colonial officers, which was more local and particularistic. Yet Kuczynski also asserted that demographers could not complete their analyses without adequate demographic data, suggesting a division of labor in which colonial officers would carry out the non-expert labor of counting people and registering vital events, and demographers would perform the expert labor of calculating vital rates and projecting future population. Moreover, although Kuczynski critiqued and mocked the political-arithmetic methods colonial officers employed to turn their observations into data, he suggested that, if devised and used by those with the proper training, similar methods “might lead to valuable results,” meaning numeric data that demographers could use to calculate rates, project future population, and draw international comparisons.⁹⁴ This statement claims the authority of demographers to synthesize portable and commensurable numeric data from impressionistic observations; after the war, demographers would develop just this type of approach, as I will

⁹³Kuczynski, *Demographic Survey of the British Colonial Empire*, see n. 14, vi.

⁹⁴Kuczynski, *Colonial Population*, see n. 49, xii.

describe later in this chapter.

3.2.3 Incommensurable Data

While Kuczynski's critiques of the population data embedded in colonial officers' reports emphasized their inaccuracy, a larger problem for the U.N.'s aspirations to create a center of calculation for population was their incommensurability. As the population observations of colonial officers were embedded in narrative reports, they were not numeric and made sense only in the context of the local knowledge with which the reports surrounded them. Even when Kuczynski extracted numeric data from these reports and packaged them into tables for his 1937 book, they were qualified by 60 pages of narrative metadata (for 30 pages of tables), with which he had to qualify them. Much of the narrative material surrounding Kuczynski's tables detailed the methods of data collection and the segments of the population of each colony covered by each method. The variation in methods and coverage over time and by place limited the commensurability of the data he gleaned.

Wendy Espeland and Mitchell Stevens define commensuration as "the transformation of different qualities into a common metric."⁹⁵ In the case of global population data, the "different qualities" were the populations of different countries, and the "common metric" numerical descriptions of those populations that counted people using the same methods and according to the same criteria and could therefore facilitate international comparison. Espeland and Mitchell exclude censuses from their analysis of commensuration, arguing that commensuration involves rendering different things quantitatively comparable, whereas with censuses, "we are simply counting or measuring something rather than commensurating disparate entities" because "implicit in the act of counting is a conception of citizenship or identity that renders unproblematic the coherence of the relations among diverse people."⁹⁶ They suggest that censuses do not need to commensurate because their very existence im-

⁹⁵Wendy Nelson Espeland and Mitchell L. Stevens, "Commensuration as a Social Process," *Annual Review of Sociology* 24 (1998): 314.

⁹⁶Ibid., 317.

plies that people are already commensurable. However, as the case of colonial censuses demonstrates, the inhabitants of colonies were not considered identical. The nature of their citizenship varied within and between colonies, and their susceptibility to enumeration varied according to the nature of their citizenship.⁹⁷ For that reason, colonial governments counted their populations in ways that made sense for their own administrative purposes, but did not necessarily facilitate the estimation of world population or its rate of growth.

As a signal of the incommensurability of the colonial population data available to U.N. demographers immediately after World War II, Kuczynski cautioned users against analyzing changes in population from year to year, even within the same colony, because “where the figures increase or decrease this will in many cases be due to actual changes in the population but will in other cases be due either to a new enumeration or to changes in the methods of estimating the population.”⁹⁸ Changes in enumeration methods from census to census undermined the utility of the time series of population data collected for any given colony or country. An additional obstacle to international comparison was the question of whether censuses were *de jure* — counting the legally resident population — or *de facto* — counting the population physically present on census day.⁹⁹ In colonial territories in particular, with high rates of labor migration, these could produce very different results and, if one colony had a *de jure* census and the neighboring colony a *de facto* census, it is possible that labor migrants from the first to the second could be counted twice and labor migrants from the second to the first not counted at all. This observation points to the duality of population data: they are collected by governments for internal purposes, but also used by scientists and by inter- and non-governmental agencies for international aggregation and comparison. An additional source of incommensurability was that some colonial censuses counted military and shipping populations, while others did not, which affected the number of Europeans

⁹⁷As Espeland and Mitchell point out, the U.S. Constitution solved the antebellum dispute between North and South about the commensurability of slaves and free people with the “three-fifths compromise,” according to which slaves were counted as three-fifths of a person for purposes of taxation and representation. Espeland and Stevens, see n. 95, 317.

⁹⁸Kuczynski, *Demographic Survey of the British Colonial Empire*, see n. 14, 9.

⁹⁹Kuczynski, *Colonial Population*, see n. 49, 6.

included.¹⁰⁰ This number also depended on the racial categories used in censuses and the means by which people were allocated to those categories, which were not stable from place to place or time to time.

Kuczynski recognized the political nature of race classification, acknowledging that “wherever there is social inequality among several races, more or less numerous members of the less favoured races succeed in being allocated to that race which is considered as the superior one.”¹⁰¹ In some places, such as the United States prior to the introduction of the mail-back census form, the attribution of race was done by the enumerator. In other places, the enumerator’s role was less explicit, though still important. For example, 1921 census instructions in South Africa indicated that

it will often occur that an Enumerator, especially in the poorer localities, will be asked for, say, a European form (C.I) by persons who obviously cannot be classed as white. In such cases Enumerators must be instructed to refrain from giving offence by any comment or questions in the presence of the parties concerned, but to make a private note on the completed forms against the names of any persons he considers cannot be classed as European, and report the circumstance. Thereafter the particulars in respect of the persons in question should be transferred to the form or forms applicable to their race.¹⁰²

Under both systems, the attribution of race depended on the local knowledge of the enumerator and, with different enumerators being employed from census to census, the reported racial composition of a place could change dramatically, even if the actual people being counted were by and large the same from one census to the next. For example, in the U.S., the Census Bureau found a stark decrease in the number of people classified as “mulatto” from 1910 to 1920, not because the population itself had changed (other than those who had died, migrated, or been born in the interim), but because 1910 had been the only year in which the Census employed black enumerators, who may have been more capable of or interested in recognizing people of mixed race than were white enumerators.¹⁰³

¹⁰⁰Kuczynski, *Colonial Population*, see n. 49, 6.

¹⁰¹Ibid., 10.

¹⁰²Ibid., 10-11.

¹⁰³Schor, see n. 36; Jennifer L. Hochschild and Brenna Marea Powell, “Racial Reorganization and the

Problems of racial classification in comparative analysis are evident in the following passage from the 1931 Census of British Malaya:

Of the 2,376 non-British Europeans, 825 were returned as “Dutch,” but it is probable that many of these should have been included under Eurasians, the same being true in the case of the 117 “Portuguese.” As to the Dutch, it must be borne in mind that, in the Netherlands Indies, whence comes the great majority of these people, the distinction between European and Eurasian is not maintained as we maintain it, and, for census and other administrative purposes, the two classes are grouped together as “Europeans and those assimilated with them” or “Europeans” simply.¹⁰⁴

This quote well illustrates Ann Stoler’s contention that divisions between colonizer and colonized were neither clear, nor natural, nor unproblematic, and that the establishment and maintenance of these divisions required continual work of the type performed by the collection and tabulation of colonial population data.¹⁰⁵ It also demonstrates that colonial population data were collected mainly to serve internal political purposes, not for international aggregative or comparative analysis. In French colonies, residents were classified into two groups, “Europeans and Assimilated” and “Natives,” which might have aided inter-colony comparison, except that, as Kuczynski noted, these categories were still inconsistent from place to place. For example, in New Caledonia “the 41,000 ‘Natives’ are composed of 29,000 Natives and 12,000 Asiatics,” while in Algeria, the “European and Assimilated” category included “Algerian Jews, all naturalized natives and their descendants, and all non-Moslem foreigners.”¹⁰⁶ These examples again indicate the slipperiness of the concept of “race,” which here seems to refer to some combination of birthplace, citizenship, and religion. Similarly, in the British Empire, colonial officers were equipped with uniform schedules and rules for filling them out, but Kuczynski found that “most colonial administrations do not conform

United States Census 1850-1930: Mulattoes, Half-Breeds, Mixed Parentage, Hindoos, and the Mexican Race,” *Studies in American Political Development* 22, no. 1 (2008): 59–96; Miller, see n. 36.

¹⁰⁴Kuczynski, *Colonial Population*, see n. 49, 12.

¹⁰⁵Ann Laura Stoler, *Race and the Education of Desire: Foucault’s History of Sexuality and the Colonial Order of Things* (Durham: Duke University Press, 1995).

¹⁰⁶Kuczynski, *Colonial Population*, see n. 49, 14.

to these rules and make returns which do not correspond to the headings of the columns.”¹⁰⁷ Kuczynski’s finding illustrates the impossibility of imposing any classificatory schema on humans, who are at once irreducibly heterogeneous and indistinguishably similar.¹⁰⁸

These three forms of data friction — unavailability, inadequacy, and incommensurability — became apparent to the members of the U.N. Population Division when, in 1946, they requested population data from member states so as to estimate the world’s current population and project it into the future. They found that censuses had never been conducted in many countries, including Ethiopia, Liberia, Belgian Congo, Ruanda-Urundi, Eritrea, Ecuador, Afghanistan, Bhutan, Iraq, Kuwait, Nepal, Saudi Arabi, Yemen, Singapore, and New Guinea. In other countries, it had been more than a decade since the most recent census — most of the British colonies in Africa had not had a census since 1931, El Salvador had not had one since 1930, Costa Rica had not had one since 1927, and the most recent census in Haiti had been taken in 1918-1919.¹⁰⁹ Official estimates for more recent periods used the same political-arithmetic methods Kuczynski had critiqued. For example, population estimates for the British Cameroons were based on tax rolls, and therefore excluded “nomad herdsmen” who “do not reside in one place throughout the year and only pay tax on their cattle, so that their own numbers are irrelevant to taxation statistics.”¹¹⁰ Similarly, the Population Division found that “a complete census has never been carried out in Kenya and the statistics of the African population must be considered to have a fairly large margin of error” because “the population estimates at present available are estimates made by the Administrative Authorities based on the number of adult male taxpayers.” It determined that “calculation of [vital] rates [is] impossible at present.”¹¹¹ Similarly, censuses in Northern Rhodesia (now Zambia) had carefully detailed the European and Asian populations, but the indigenous population was estimated on the basis of official employment, representing

¹⁰⁷Kuczynski, *Colonial Population*, see n. 49, 15.

¹⁰⁸For more on the impossibility of human racial classification, see Bowker and Star, see n. 34.

¹⁰⁹“Total Population for Each Area of the World According to the Latest Census, Latest Official Estimate, and at Midyear 1946,” Mar. 1, 1948, folder 6, box 5, series 920.

¹¹⁰“Verification of Published Sources: Cameroons (British),” Aug. 1, 1950, folders 1-52, box 11, series 920.

¹¹¹“Verification of Published Sources: Kenya,” n.d., folders 1-52, box 11, series 920.

“only a fraction of the total African population.”¹¹² The following section describes three approaches demographers working with the U.N. took to overcome the data friction they encountered in their project to produce comprehensive estimates and projections for each country of the world and thereby to track and project global population.

3.3 Dealing With Data Friction: Making Global Population Data and Making Population Data Global

At no time did lack of “good enough” data prevent demographers from making population projections. As Taeuber stated in 1949, regardless of the quantity or quality of available data, “population students in government, whether working at international, national, regional, or local levels, are forced to make estimates of the most probable population size and structure in the near future, in the middle distance, and in the long run,” because “political, economic, and social planning necessitates the quantitative evaluation of the future.”¹¹³ Taeuber’s use of the word “forced” implies without explicitly stating that demographers needed to meet those demands in order to maintain professional credibility and external funding for their activities, even when they lacked the ideal raw materials with which to do so. Demographers and U.N. delegates agreed that the countries that most needed social and economic planning were those with the sparsest population data.¹¹⁴ This section describes three ways in which demographers in universities, government statistical offices, and inter- and non-governmental agencies responded to data friction. First, some demographers revived the logistic projection method, which required less detailed data. Second, the U.N. attempted to stimulate the collection of population data worldwide, which, following Edwards, I term “making global population data.” Third, demographers developed methods to mathematically adjust popu-

¹¹²“Central African Statistical Office, Salisbury: Notes on Northern Rhodesia Population Estimates,” n.d., folders 1-52, box 11, series 920.

¹¹³Taeuber, “Literature on Future Populations,” see n. 103, 3.

¹¹⁴Grauman, see n. 31, 25.

lation data to make them suitable for use in demographic models and analysis, which, again following Edwards, I term “making population data global.”

3.3.1 Reviving the Logistic

An initial and short-lived response to the data friction demographers encountered was a revival of the logistic projection method. In 1944, Taeuber attributed the resurgence of interest in this method to the fact that the logistic method requires much less input data than does the cohort component method and “can be computed in the absence of detailed information on age structures and birth and death rates,” which were missing for much of the world.¹¹⁵ Demographers who used the logistic method in the 1940s, however, divorced it from Pearl’s logistic law of population growth. Even Pearl, before his death in 1940, had conceded that the logistic was useful only as an empirical description of population growth, abandoning his former claims to having discovered a natural law, as discussed in Chapter Two.¹¹⁶ Instead, postwar demographers interpreted the logistic curve as an approximation of projections that would have been made using the cohort component method and demographic transition theory, were the requisite data available. In accordance with the logistic law, demographic transition theory suggested that population should grow along an approximately logistic trajectory, with declining mortality followed by declining fertility producing an S-shaped growth curve. Even though they had discarded the logistic law, many demographers viewed the fitting of past population data to a logistic curve and its extrapolation into the future as a valid method of population projection, especially when the data necessary to extrapolate the mortality and fertility declines that produced the logistic trajectory were unavailable. Pearl’s former collaborator, Johns Hopkins University biologist Lowell Reed, drew on this logic when he argued in a roundtable at the 1947 PAA meeting that “since population is a function of an almost infinite number of parameters over time, many of which are unknown,

¹¹⁵Taeuber, “The Development of Population Predictions in Europe and the Americas,” see n. 146, 338.

¹¹⁶Harold F. Dorn, “Pitfalls in Population Forecasts and Projections,” *Journal of the American Statistical Association* 45, no. 251 (Sept. 1950): 311–334.

and since the analysis of the inter-relationship of these parameters is only beginning, the projection of some of the parameters of the series may frequently lead to results less valid than the mathematical expansion of the series.”¹¹⁷ In plain English, Reed contended that, although the cohort component method would produce more detailed projections if enough data were available, given the sparsity and unreliability of vital data, the aggregate projection produced by extrapolating the components of growth individually and summing them — as done by the cohort component method — would be less accurate than the extrapolation of the aggregate itself.

Perhaps the most well-known postwar use of the logistic projection method was Kingsley Davis’s *Population of India and Pakistan*, published by Princeton University Press in 1951. Davis justified his choice of method by pointing out that the cohort component model “has the disadvantage that birth and death rates fluctuate more than the natural increase which is a function of the two, and our knowledge of components is often less than our knowledge of the population growth as a whole,”¹¹⁸ an argument very similar to that made by Reed in 1947 (at a meeting Davis no doubt had attended). Davis conceded that “for short-run estimates the component method is preferable,” but maintained that “for long-run estimates the logistic is better.”¹¹⁹ Conspicuously missing from his explanation is reference to data quality or availability. Rather, Davis argued that the logistic method produced better results over the long term *independent of data quality*, as overall growth rates were less volatile than mortality and fertility rates. This assessment may have been influenced by relatively recent epidemics in India, which had produced spikes in mortality, or by the North American and Western European baby boom, which had raised fertility and produced population growth well beyond that projected by Thompson and Whelpton between the wars.

Use of the logistic projection method, even when stripped of its association with Pearl’s logistic law of population growth, did not remain popular for very long, especially after the

¹¹⁷Paraphrased in Irene B. Taeuber, “1947 PAA Meeting,” *Population Index* (1947): 181.

¹¹⁸Kingsley Davis, *The Population of India and Pakistan* (Princeton: Princeton University Press, 1951), 89.

¹¹⁹*Ibid.*, 89.

U.N. Population Commission rejected its use for official U.N. population projections. In 1954, the U.N. and the IUSSP co-sponsored the first of what would become a decadal series of world population conferences — meetings of demographers from throughout the world working in universities, government statistical bureaus, and inter- and non-governmental agencies. At the 1954 meeting, one U.N. demographer argued that “there is no reason that population should ever grow precisely in accordance with a mathematical formula,”¹²⁰ while another criticized the logistic method for making population projection in general seem a much “more ‘scientific’ and respectable business than, say, predicting the date of outbreak of the next war or the name of the next President of the United States” as a result of its “use of numerical techniques of extrapolation which may suggest analogies with astronomers’ calculations of the future position of the stars.”¹²¹ Although it doesn’t specifically name Pearl or the logistic curve, this sentence directly references Pearl’s analogy of the logistic to the path of a comet, cited in Chapter One, but suggests that his logistic law was actually much more akin to fortune-telling. In a 1956 manual on population projection, the U.N. Population Division rejected Davis’s concern about the volatility of fertility and mortality rates, and declared that “the ‘component’ method is superior to ‘mathematical’ methods [including the logistic] in that it involves a separate analysis of the changes affecting each component of the population,” although it also recognized that “unfortunately, statistical information is often not sufficiently detailed or accurate to permit the formulation of the specific assumptions needed in the projection of each component.”¹²²

One explanation for the U.N.’s rejection of the logistic method is that its results may have been less useful for some planning purposes than were the results of cohort component projections. As one U.N. demographer stated about logistic projections at the 1954 meeting, “since projections of this type are not analytic, they can give only very limited information,

¹²⁰Grauman, see n. 31, 26.

¹²¹John Hajnal, “The Prospect for Population Forecasts,” in *Proceedings, World Population Conference, 1954, Rome*, by the United Nations (New York: United Nations, 1954), 43-44.

¹²²United Nations Population Division, *Manual III: Methods for Population Projections by Sex and Age* (New York: United Nations, 1956).

both as regards the causes of changes in population trends, and the detailed effects upon population structure.” Also, since future population growth in the logistic model was fully determined by past growth, “alternative courses of future population growth, under different assumptions, can hardly be considered by this method.”¹²³ These two statements point to the two uses of projections: planning for population and planning of population. Planning *for* population required information about future overall size, as well as age and sex structure; planning *of* population required information about the effects of the components of growth on overall population. Logistic projections were considered to “have limited value for economic and governmental planning, since they yield no information on changes in the detailed age and sex structure of a population.”¹²⁴ Demographer Alfred Lotka had, in his stable population model described in greater detail below, worked out the theoretical age distribution of populations growing along logistic trajectories, but in 1949 Taeuber disparagingly described this method of determining age structure as “pyramided assumptions that limit the usefulness of the entire construct as a numerical evaluation of the potentialities of the future.”¹²⁵ The age distributions produced by the cohort component method were also based on “pyramided assumptions” about the future course of fertility and mortality, yet because they were the outcome of a direct calculation and based on more detailed data, they could be seen as more empirical. This distinction was important for demography, a field whose practitioners had claimed scientific authority by distinguishing demography from population politics on the basis of its quantitative and empirical character, as discussed in Chapter Two.

Tauber’s statement suggests a continuum between theory and data as the basis of population projection: the more detailed the available data (whether observational or synthetic), the less explicitly a projection relied on theory. Her statement also implied a higher value attached to projections closer to the data end of the continuum than those closer to the

¹²³Grauman, see n. 31.

¹²⁴See n. 175, 258.

¹²⁵Taeuber, “Literature on Future Populations,” see n. 103, 8.

theory end. Where data were most limited, Taeuber described projections as “subjective evaluations of the magnitude of the growth that may come into the future” and critiqued the literature on East Asia — her area of expertise — as “merg[ing] almost imperceptibly into the Neo-Malthusianism that views the problems of the East with emotion.”¹²⁶ Her use of the words “subjective” and “emotion” suggest a belief that the accumulation of more and better data would and should eradicate the theoretical component of population projection, and thereby protect demographic analysis from what she viewed as the contaminating effects of population politics. Taeuber herself seems to have overlooked the theory implicit in all projections when she stated that “given long historical series of data and a universe of stability or regular change, the computation of the component projection is either problem or exercise in mathematics.”¹²⁷ Yet, because the future can never be known in advance, “a universe of stability or regular change” is a theoretical assumption. Moreover, even if one has a long historical time series of vital rates, and can assume “regular change,” a decision still must be made as to whether that “regular change” is linear or curvilinear and, if the latter, what type of curve it follows. That Taeuber left this assumption unstated reflects the fact that, by the 1940s, all projections — whether made with the logistic or cohort component method — were based on the assumption that all populations follow the same logistic growth trajectory characteristic of demographic transition. Indeed, the use of the logistic curve as a substitute for cohort component projections in the absence of “good enough” data suggests an acceptance of the idea that populations always grow according to an S-shaped curve. Such acceptance entailed a view that the curve itself could be used to project population, even if the curve was by then interpreted as a product of fertility and mortality declining along reverse logistic trajectories, as implied by demographic transition theory, rather than a product of population nearing its Malthusian limit, as implied by the logistic law.

Evidence of the general acceptance of the logistic as a trajectory of population growth is that, even as the cohort component method was being institutionalized as the only legitimate

¹²⁶Taeuber, “Literature on Future Populations,” see n. 103, 8.

¹²⁷Ibid., 4.

approach, projections made using it began to take on and rely on some elements of the logistic law of population growth, specifically the idea that population is a natural entity with emergent properties that everywhere and always follows the same pattern of growth. Even though the cohort component model formally allows populations to grow at any rate and in any direction, in the absence of detailed data on which to base individualized projections for specific countries, demographers using this method naturalized population growth in order to make it predictable: if population growth exhibited the same uniformitarian principles as other natural phenomena, then it could be predicted without reference to any particularities of the population in question.

The work of Notestein's wartime group at OPR on its projections for the 1944 *Future Population of Europe and the Soviet Union, 1940-1970*, commissioned by the League of Nations, illustrates how demographers naturalized and utilized the naturalization of demographic transition and population growth to facilitate projection. In its projections for Europe, Notestein's group divided population growth into two components: a "natural" component — fertility and mortality without the effects of war — and a "social" component — all immigration and the excess mortality and reduced fertility produced by war. The group then explicitly ignored the second component, projecting only the changes in Europe's population that would have been expected in the absence of immigration and war, contending that the results "reflect the natural sources of future population growth" and reveal "the populations that might have been expected in the nations of Europe from an uninterrupted development of the trends of the interwar period."¹²⁸ By labeling war and migration as "social" and excluding them from projections of "natural" population change, Notestein's team elided the socioeconomic factors contributing to changes in mortality and fertility rates — the determinants of so-called "natural" population change — even though demographic transition theory explicitly attributed declines in those rates to the social change resulting from industrialization and its sequelae. In so doing, Notestein's team implicitly embedded

¹²⁸Notestein et al., see n. 12.

modernization theory — particularly its assumption that “modernization” advances over time — in the demographic transition theory that drove their population projections.

Notestein’s group further naturalized the mortality and fertility declines characteristic of demographic transition by constructing synthetic trajectories of those declines on the basis of available data from European countries that were thought to represent different stages of demographic transition. That is, Notestein and his group arrayed the then-current mortality and fertility rates of the countries of Europe along a continuum from high to low, and then assumed that this continuum traced a universal trajectory of demographic transition, with those at the higher end occupying an “earlier” stage of transition and those at the lower end occupying a “later” stage. Interpreting geographic difference through a chronological framework based on an assumed universal linear trajectory of “progress” or “development,” a practice described by Arland Thornton as “reading history sideways,” had strong intellectual roots in the social sciences, and was the basis of modernization theory.¹²⁹ By constructing these supposedly-universal trajectories, Notestein’s team treated Europe as “anachronistic space” and the variation it represented as “panoptical time,” terms coined by postcolonial literary scholar Anne McClintock to describe a vantage point from which the whole of human history — in this case the history of population — can be read in a single glance.¹³⁰ Once they had constructed these synthetic trajectories, Notestein’s team could predict future mortality and fertility for any country by locating it on the constructed trajectories and reading forward.

Naturalizing trajectories of falling mortality and fertility associated with demographic transition theory allowed demographers to predict demographic change without making explicit reference to social or economic change. In keeping with modernization theory, which viewed “modernization” in either the social, economic, or political domain as a driver of “modernization” in the other two domains, demographers presented declines in fertility and mortality as a function of time, leaving its causal relationship with social, economic, and

¹²⁹Thornton, see n. 191.

¹³⁰McClintock, see n. 191.

political changes undefined. Just as Pearl's logistic projection method had been a closed system, using only past population data from the country in question and no information about the potential of a given territory to support population growth, the cohort component method was also a closed system, as it used only current population data from the country in question and past population data from other countries, with no information about socioeconomic conditions in the country whose population was being projected, despite the fact that demographic transition theory identified those conditions as the drivers of population change. Naturalizing population change in this way was convenient, as social and economic data were no more readily forthcoming for many parts of the world than were population data, and as demographers were continually frustrated in their attempts to formalize and quantify the relationship between population and social and economic variables, as will be discussed in Chapter Four.

This idea of a natural pattern of population growth would have been compatible with the continued use of the logistic projection method, with the logistic curve reinterpreted as the trajectory of growth produced by demographic transition theory. Yet the logistic posed three critical problems for global population projection. The first problem was simply that fitting a logistic curve required three data points, and many countries of the world, even by 1954, had had fewer than three censuses. The second was an analytic problem: logistic curves are not additive, because the sum of two logistic curves is not itself necessarily a logistic curve. Therefore, logistic projections for different countries or continents could not be summed to produce a projection for regions or for the world as a whole. Moreover, were the population of the world to be projected using the logistic method, the projected world population at any date in the future could very well turn out to be less than the sum of the projected populations of each country at that same date. The third problem was political: in logistic projections, future population growth is completely determined by past population growth, leaving no room for manipulation via policy, or planning of population. In contrast to the cohort component method, which explicitly *simulated* future population growth on

the basis of assumed future rates of mortality, fertility, and migration, and could therefore predict alternate futures given different policy alternatives, the logistic method produced only one future. The cohort component projection method therefore offered greater leverage for efforts to plan and manipulate future population growth.

3.3.2 Making Global Population Data: The U.N. Global Census Programs

Having rejected the logistic projection method, the U.N. Population Commission instead attempted to stimulate the production of more population data and more detailed population data by assisting member states with census taking and the development of vital registration systems. Its delegates agreed with Taeuber's 1944 contention that "predictions which are more than theoretical mathematical constructs requires the further development of the basic census and vital statistics which constitute the raw materials for the construction of predictions,"¹³¹ and with Kuczynski's 1937 statement that "the actual population of a country can be ascertained only through an enumeration of the people living at a given moment in that country," because "all figures obtained by other means than a genuine, all-inclusive census are estimates or guesses."¹³² However, the U.N. lacked the power to require member states to collect and report demographic data or to collect data directly in all of the countries of the world. Mechanisms of universal data collection, such as censuses and vital registration, require the authority to compel people to submit to enumeration, and for that reason is done mainly by states.

Despite the relative paucity of population data worldwide, the Population Commission requested detailed data regularly from U.N. member states, hoping that such requests would "stimulate governments to make available more detailed and more adequate data."¹³³ The U.N.'s requests for demographic data — as well as other social and economic data — from

¹³¹Taeuber, "The Development of Population Predictions in Europe and the Americas," see n. 146, 338.

¹³²Kuczynski, *Colonial Population*, see n. 49, vii.

¹³³United Nations, *Yearbook of the United Nations, 1947-48*, see n. 46, 639.

its member states made the establishment of statistical offices, vital registration systems, and census apparatus a prerequisite for states that wanted to be recognized as part of the international community, particularly newly-independent postcolonial states.¹³⁴ Following Nigerian independence in 1960, the Federal Minister of Economic Development acknowledged Nigeria's obligation to provide population data to international agencies in a 1962 statement that

it is our duty as a nation to see to it that we produce population census results which have been thoroughly conducted, verified and appraised, and therefore acceptable, without any shadow of doubt, to all governments of the world and to all international bodies such as the United Nations and its agencies, the World Bank, etc... The impressions of the manner in which a country conducts its affairs are one of the factors which earn for it the respect or disrespect of the rest of the world.¹³⁵

However, the U.N. also recognized that many member states lacked the resources and technical knowledge to produce the data it requested. In 1947, the U.N. sponsored a World Statistical Congress, which "focused the attention of its members upon the uses for and the needs of international organizations for adequate and reliable statistical information from national governments" and "brought to the attention of the United Nations the need for more trained personnel in national statistical services as well as the need for providing advice and assistance in developing national statistical systems."¹³⁶ Beginning in 1951, the U.N. offered fellowships to government statisticians to enable them "to supplement their knowledge both on theoretical aspects as well as on on practical operational aspects of statistics by training in statistically advanced countries and through short term training and demonstration centres." Twenty-nine fellowships were given in the first year of the program. Under the same program, the U.N. offered expert assistance to member states "either in carrying out

¹³⁴Marion Fourcade has argued that the establishment of national economies also became critical in this period. Marion Fourcade, "The Construction of a Global Profession: The Transnationalization of Economics," *American Journal of Sociology* 112, no. 1 (2006): 145–194.

¹³⁵S.A. Aluko, "How Many Nigerians? An Analysis of Nigeria's Census Problems, 1901-63," *Journal of Modern African Studies* 3, no. 3 (1965): 371.

¹³⁶United Nations, *Yearbook of the United Nations, 1946-47*, see n. 35, 567.

specific statistical projects or in developing national statistical services.” In 1951, these countries included Afghanistan, Burma, Colombia, Cuba, Ecuador, Haiti, Libya, Panama, the Philippines, Syria, Thailand, and Yugoslavia.¹³⁷

At its first meeting in 1947, the U.N. Population Commission began planning a worldwide census program for 1950. Censuses are defined by four features: they are universal, counting all people rather than a sample; individual, listing each person separately; instantaneous, counting all people at the same time so as to produce a snapshot of population on a given date; and periodic, repeated at regular intervals to document population changes.¹³⁸ The U.N. had neither the authority nor the resources to take a worldwide census; the closest it could come was encouraging its member states to take censuses in the same year using comparable schedules. For 1950, the Inter-American Statistical Institute had planned a “Census of the Americas,” in which several of the countries of North, Central, and South America would take censuses in the same year and ask many of the same questions in order to produce synoptic and commensurable data. The Population Commission suggested that the Census of the Americas could serve as the basis for its worldwide census program, but acknowledged that not all countries would be willing or able to take censuses in 1950: although the U.S. and France and its colonies had traditionally taken censuses in years ending with zero (1940, 1950, etc.), the U.K. and its colonies took theirs in years ending with one (1941, 1951, etc.), and none of these countries was interested in changing its census date. The U.N. compromised by recommending “that all such member states as are proposing to take censuses in or around 1950 use comparable schedules.”¹³⁹ The FAO planned a world census of agriculture for the same year, and the U.N. Statistical Commission offered technical assistance to governments needing help carrying out either population or agricultural censuses. Together with the FAO, the government of Mexico, and the Inter-American Statistical Institute, the

¹³⁷United Nations, *Yearbook of the United Nations, 1951* (New York: United Nations, 1951), 447.

¹³⁸In the U.S., Census Day is April 1. Although respondents can mail their forms back at any time, it specifically asks for the names and attributes of people who would typically live at that residence on April 1.

¹³⁹United Nations, *Yearbook of the United Nations, 1946-47*, see n. 35, 512.

U.N. Statistical Commission carried out a training course in census administration in 1948 in Mexico City, attended by more than sixty people from sixteen countries.¹⁴⁰ After these censuses, the U.N. developed special training programs in demographic analysis, particularly for countries where demographic data were becoming available for the first time, to guide government statisticians in analysis of their new data.¹⁴¹ The nature of training for statisticians and demographers in the global south will be addressed at greater length in Chapter Five.

In 1949, the U.N. Population Commission published a guide for member states in carrying out their 1950(ish) censuses, titled *Population Census Methods*.¹⁴² This guide emphasized the production of internationally-comparable data, and asked states to collect information about each person's sex, age, marital status, place of birth, citizenship, native language, educational characteristics, fertility, economic characteristics, and relationship to household head, as well as counting the total population and the number living in rural and urban areas.¹⁴³ The Population Commission recognized that member states collected data for their own purposes, and not just to report to the U.N. It justified its own requests for data from member states by arguing that states needed to collect these data anyway in order to plan for economic development and social welfare programs. But even as the Commission acknowledged that states might want additional information about their populations, it implored member states not to sacrifice international comparability in these areas for the sake of country-specific information. The Population Commission urged member states that "in preparing estimates which are useful from a national point of view, it is highly desirable that every country consider carefully the modifications which would facilitate comparisons with those of other countries," and that "where conformity to international standards is not possible, it is desirable that the deviations from the standards be clearly indicated, or that

¹⁴⁰United Nations, *Yearbook of the United Nations, 1946-47*, see n. 35, 564.

¹⁴¹United Nations, *Yearbook of the United Nations, 1951*, see n. 137, 569.

¹⁴²This guide followed the publication of "a series of Studies of Census Methods... for the guidance of national statistical officers." United Nations, *Yearbook of the United Nations, 1946-47*, see n. 35, 566.

¹⁴³United Nations Population Division, *Population Census Methods*, Population Studies (New York: United Nations Department of Social Affairs, 1949), 3.

appropriate sub-totals be given in order that the desired figure may be derived,” sometimes using the complex mathematical methods developed in the 1950s and 1960s and discussed in the next part of this section.¹⁴⁴

Given “the wide differences in national needs and statistical facilities,” the U.N. Population Commission found it difficult to create a schedule that would work for all countries.¹⁴⁵ Instead of attempting to “establish specific questions or instructions for census enumeration,” the Commission recommended that “the techniques used in each census for obtaining the recommended types of data should be adapted to the special circumstances and needs of the country.”¹⁴⁶ It also recognized that, within the list of information it requested, definitions and categories were not obvious, even for “total population,” seemingly the most straightforward. The U.N. lacked the authority to impose a definition of “total population” on its member states, but the 1949 guide did recommend one: total population was to include everyone resident in a country on census day, excluding foreign military and diplomatic personnel, but including the country’s own military and diplomatic personnel living abroad.¹⁴⁷ Despite the inclusion of military and diplomatic personnel living abroad, the guide emphasized a territorial definition of population, recommending the inclusion of people living within the territory but outside of the social, economic, and political framework of the state, such as indigenous or nomadic groups.¹⁴⁸ The guide similarly proposed definitions for each of the other categories of information, acknowledging that none was transparently obvious. In order to promote commensurability in population statistics beyond the 1950 censuses, the Population Commission asked Notestein to compile a dictionary of demographic terms in English and French, resulting in the 1958 publication by the U.N. and the IUSSP of the *Multilingual Demographic Dictionary*, which established standards for the reporting of demographic data.

Although the Population Commission portrayed censuses as politically neutral scientific

¹⁴⁴United Nations Population Division, *Manual I: Methods of Estimating Total Population for Current Dates*, see n. 28, 3.

¹⁴⁵United Nations, *Yearbook of the United Nations, 1946-47*, see n. 35, 567.

¹⁴⁶United Nations Population Division, *Population Census Methods*, see n. 143, 3.

¹⁴⁷*Ibid.*, 6.

¹⁴⁸*Ibid.*, 7.

counts of population, its members recognized that censuses made political interventions and statements, at both national and international levels, and that the politics of census taking were inseparable from the reporting of results. Censuses have never been politically neutral: the first country to have a regular individual-level census, the United States, instituted it as a way to apportion representation to Congress among states and levy federal taxes. In many colonies and newly-independent states, people avoided census enumeration, fearing that it would be used for taxation or for the conscription of labor or military service, as indeed it was during the colonial period, or sought to inflate census counts when such counts were used for political representation.¹⁴⁹ In Nigeria, for example, experts believed that the 1950 census — the last to be taken under colonial rule — under-counted the population, while the 1962 census — the first to be taken under independent self-government — over-counted the population. In 1950, it was reported that “many people erroneously associated the census with taxation; moslems [sic] in the Islamic North opposed the counting of women in purdah; and difficult terrain alongside inadequate transportation led to the omission of many villages.”¹⁵⁰ The 1962 census, which was to serve as the basis for representation in the new federal legislature, was accompanied by much publicity and enthusiasm for being counted. When the results were returned, each district accused the others of artificially inflating their numbers to increase their political representation. As a result of these allegations and additional evidence of overcounting in some districts, the Prime Minister nullified Nigeria’s 1962 census, repeating the whole process in 1963. The results of the 1962 census were never published officially.¹⁵¹ The results of the 1963 census were just as controversial as those of the 1962 census had been, but Nigerian government published them officially and sent them to the U.N. and other international agencies, despite the fact that “many Nigerian statisticians, administrators, and scholars are hesitant to accept the population total” given by the 1963 census, which was 55.7 million, up from 42 million in the 1962 census and 36.5

¹⁴⁹Aluko, see n. 135, 376.

¹⁵⁰Babatunde A. Ahonsi, “Deliberate Falsification and Census Data in Nigeria,” *African Affairs* 87, no. 349 (1988): 555.

¹⁵¹Aluko, see n. 135, 384.

million estimated just before the 1962 census.¹⁵² Nigeria's 1973 census was also disputed, so the 1963 figures remained in use for official national and international purposes until the next census in 1991.¹⁵³

As of 1982, Lebanon had not conducted a census in 50 years because the ruling Christian majority in government (where representation was allocated on the basis of religion) prior to 1975 feared revealing the emergence of a Muslim majority in the population.¹⁵⁴ In another example, after China was admitted to the U.N., China "took the official position that Taiwan was a province of China" and stopped publishing separate population data for Taiwan, a place that was a major concern for demographers as a laboratory of demographic transition. In such situations, delegates to the U.N. Population Division decided that they "had to give priority to the political reality and not in the field of demography."¹⁵⁵ Just as censuses made citizens legible to states, they also made states legible to the U.N. and other inter-governmental organizations, and some states resisted aspects of that legibility, or used it strategically to assert their sovereignty.

By 1954, the Population Division had released estimates of the populations of each continent for each decade from 1920 to 1950, shown in Table 3.1 and graphed in Figure 3.2. These numbers, however, came with such qualifications as "it should be noted that many of these estimates are subject to various errors and that even the resulting continental totals are not entirely trustworthy," and "it is not possible now to make any firm estimate for that fifth of mankind which inhabits the Chinese mainland."¹⁵⁶ Indeed, these numbers reflected a recent upward revision of China's population by 100 million on the basis of a 1953 census there.¹⁵⁷ The qualifications the Population Division made to the data it released indicated

¹⁵²Aluko, see n. 135, 385.

¹⁵³Ahonsi, see n. 150.

¹⁵⁴Donald P. Warwick, *Bitter Pills: Population Policies and their Implementation in Eight Developing Countries* (New York: Cambridge University Press, 1982), 23-24.

¹⁵⁵See n. 88.

¹⁵⁶United Nations Population Division, "The Past and Future Population of the World and its Continents," in *Proceedings, World Population Conference, 1954, Rome*, by the United Nations (New York: United Nations, 1954), 270.

¹⁵⁷M.A. El-Badry and Shigemi Kono, "Demographic Estimates and Projections," *Population Bulletin of the United Nations* 19 (1986): 35-43.

the difficulty of coordinating a worldwide census program. But while this difficulty stemmed, in large part, from the complications of producing comparable censuses between countries, it also stemmed from the challenges of carrying out national censuses. As stated above, taking a national census requires that the state have the power and resources to find its citizens and compel them to be enumerated. The former task is particularly difficult in the absence of communication infrastructure — particularly a national postal system based on home addresses — and the latter is difficult when states are weak or distrusted by their subjects or citizens. Censuses are also costly propositions, and the U.N. Population Commission acknowledged that “the cost of periodic detailed censuses is large in relation to the financial resources of the governments” of many countries, particularly those that had just wrested their independence from imperial powers.

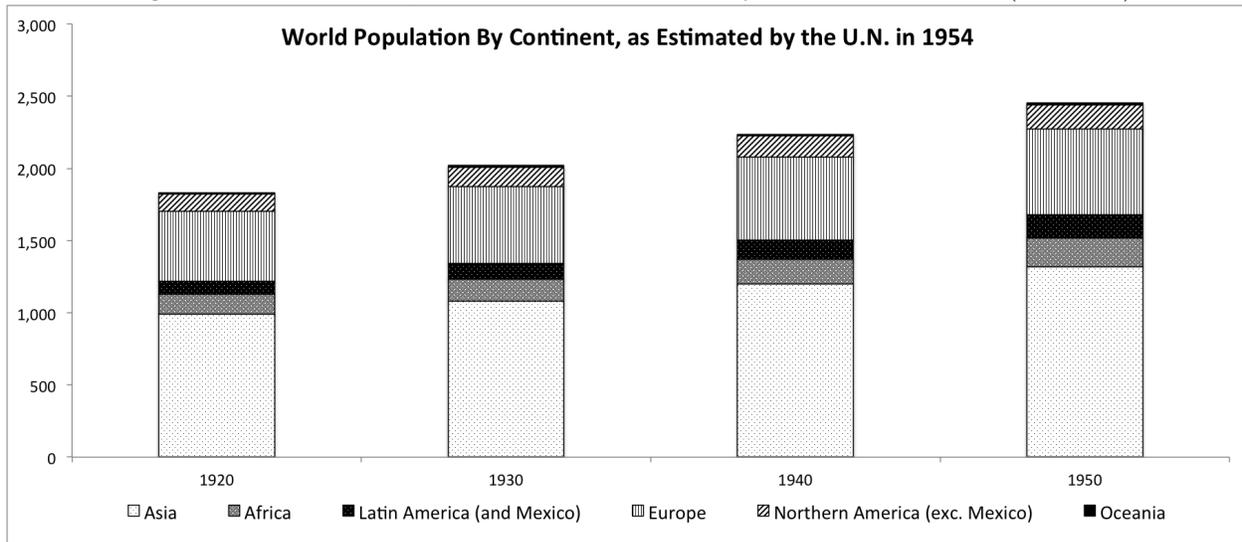
Table 3.1: World Population by Continent, as Estimated by the U.N. in 1954 (millions)

| Continent | 1920 | 1930 | 1940 | 1950 |
|-------------------------------------|-------|-------|-------|-------|
| World | 1,830 | 2,019 | 2,235 | 2,454 |
| Africa | 139 | 154 | 173 | 198 |
| Americas | 207 | 244 | 277 | 330 |
| Northern America (excluding Mexico) | 117 | 135 | 146 | 168 |
| Latin America | 90 | 109 | 131 | 162 |
| Asia | 990 | 1,080 | 1,199 | 1,320 |
| Europe | 486 | 531 | 576 | 593 |
| Oceania | 8.8 | 10.4 | 11.3 | 13 |

Systems of vital registration were even more difficult and costly to implement than were censuses. In 1953, the U.N. published *Principles for a Vital Statistics System* to guide member states in setting up vital registries. Other manuals followed, and the U.N. made “innumerable exhortations” to member states at international conferences urging them to set up vital registries.¹⁵⁸ However, few countries that did not already have national registration

¹⁵⁸John Cleland, “Demographic Data Collection in Less Developed Countries 1946-1996,” *Population Studies* 50, no. 3 (1996): 435.

Figure 3.2: World Population, as Estimated by the U.N. in 1954 (millions)



systems developed them in the second half of the twentieth century. Outside of Europe, North America, and Oceania, vital registration was most prevalent in Latin America, and birth registration was more complete than was death registration.¹⁵⁹ Elsewhere, registration was mostly limited to small countries, such as the island states of the Caribbean and South Pacific, Egypt, Hong Kong, Jordan, Malaysia, Singapore, Sri Lanka, and Tunisia.¹⁶⁰ One major obstacle to vital registries in Latin America, Asia, and Africa was that these systems — as in all countries — rely on reporting by the people who experience the events, usually parents in the case of births and surviving relatives in the case of deaths. When such events typically occur in hospitals, hospital personnel can be required to report them, but when such events do not, registration relies on compulsion. In the case of death registration, compulsion may take the form of fines or imprisonment, but enforcement could be costly and time-consuming. In the case of birth registration, parents in countries with strong bureaucracies are compelled to register their children by the knowledge that children will need proof of identity, age, and citizenship, but in many parts of the world, such proof was irrelevant.¹⁶¹ Incomplete birth registration made it difficult to track such socioeconomic

¹⁵⁹Cleland, see n. 158, 434-435.

¹⁶⁰Ibid., 434.

¹⁶¹Ibid., 435.

indicators as infant mortality, even with good mortality registration.

3.3.3 Making Population Data Global: Sampling and Indirect Estimation

The 1950 world census program demonstrated that universal censuses with detailed age and sex categories and vital registration systems were simply not feasible for many parts of the world. Recognizing that their hope of developing a center of calculation for global population data remained out of reach, delegates to the U.N. Population Commission responded in two ways. First, they began to promote the collection of data on a sample basis rather than universally, as recently-developed statistical methods promised the generalizability of sample results to whole populations within quantifiable confidence limits. Second, they promoted the development by demographers of mathematical methods to smooth and synthesize unruly or unavailable population data, rendering them tractable to demographic analysis and population projection. Through the use of such methods, the U.N. Population Commission made population data global in the sense of turning the information it had into the quantitative and commensurable data it needed for the purposes of tracking and projecting the world's population.

Sampling

In 1960 the U.N. again sponsored a world census program and, between 1958 and 1963, comprehensive national censuses were carried out in 157 countries and territories, enumerating about 70% of the world's population.¹⁶² For many countries, this was the second census ever taken, allowing for the first time the calculation of a rate of population growth in the absence of vital registration systems. However, by the time the Population Commission began preparations for the 1960 world census program, its delegates had accepted that many member states would not be able to carry out complete enumerations. For that reason, the

¹⁶²Symonds and Carder, see n. 6, 122, fn. 3.

Population Commission began to promote sample surveys as an alternative to complete enumerations, stating that “a country which finds it impossible to conduct a census can employ sampling techniques under suitable conditions to secure estimates of basic data of the kind traditionally obtained in other countries through a census.”¹⁶³ The U.N. had already begun to recommend sample vital registration systems where complete registries were infeasible, and India had established just such a system by the late 1950s.¹⁶⁴

Sampling is a statistical technique developed in the first half of the twentieth century and introduced into the U.S. Census in 1940, whereby a small part of a population of interest — a sample — statistically stands in for the whole. Sampling resembled political arithmetic in the sense that information about an entire population was mathematically generated from some other kind of information — in the case of sampling, from the same information collected for a group of people expected to represent the whole in a statistical sense. Early forms of sampling relied on “representative populations,” such as Muncie, Indiana in Robert and Helen Lynd’s famous “Middletown” studies, and Indianapolis in the fertility survey discussed in Chapter Two.¹⁶⁵ However, because such studies as Middletown and Indianapolis aimed to identify the “typical,” they did not facilitate the study of systematic variation or deviation from the “typical.”¹⁶⁶ In contrast, random sampling — in which each member of the target population has an equal chance of being selected for the sample — has the potential to capture the diversity of the larger population. Sampling made frequent nationally-representative surveys feasible in large countries whose populations were generally known and locatable, such as the United States.

Statisticians distinguished sampling from political arithmetic by developing sophisticated methods to quantify the generalizability of results obtained from a sample. As the Population Commission stated in its manual for the 1960 world census program,

¹⁶³United Nations Population Division, *1960 World Population Census Programme: Sampling Methods and Population Censuses* (New York: Statistical Office of the United Nations, 1957), 2.

¹⁶⁴See n. 116, 52.

¹⁶⁵For more on the “Middletown” studies, see Igo, see n. 143.

¹⁶⁶For the history of sampling, see Desrosières, see n. 26, 210-235.

one of the most important features of modern sampling is that the accuracy of the results of a scientifically planned sample enquiry can be calculated in advance with a fair amount of precision, in the sense that for each figure to be estimated one can state the probable limits of error of estimation. This feature enables one to design a sample survey in accordance with the precision required for the uses that are to be made of the data, or with the precision possible within the range of permissible costs. In other words, a sample can be devised which will yield results of specified precision at minimum cost or results of maximum precision at a given cost.¹⁶⁷

As this passage indicates, with a sample survey, scientists could optimize the tradeoff between cost and data quality in advance and return results with a quantitative estimate of their validity.

The U.S. Census Bureau used sampling for the first time in the 1940 Census. The Constitution mandates that all persons resident in the U.S. must be counted every 10 years. The 1940 Census, as was the case with every census prior to and since 1940, counted and listed basic information for each person. However, additional questions were asked of every twentieth person.¹⁶⁸ These questions included place of birth of father and mother, native language, whether the person was a veteran of the U.S. military, questions about the person's participation in Social Security, occupation and industry, and for women who had ever been married, age at first marriage, number of marriages, and number of live births.¹⁶⁹ A similar procedure was followed in 1950. In the censuses of 1960-2000, selected households were sent a "long form," which included additional questions for all members of the household and questions about the household itself.¹⁷⁰ These procedures allowed for the collection of much more information than would have been feasible for the entire population, but also linked these sample questions to the full enumeration, facilitating the extrapolation of results to the entire population. The Census Bureau also uses sample surveys to test questions ahead of the full census and to estimate undercount or check the reliability of answers afterwards.

¹⁶⁷United Nations Population Division, *1960 World Population Census Programme: Sampling Methods and Population Censuses*, see n. 163, 2-3.

¹⁶⁸The sample included persons enumerated on lines 14 and 29 of the census forms, about 5% of the population.

¹⁶⁹<http://www.archives.gov/research/census/1940/general-info.html> (accessed 4/1/2015).

¹⁷⁰After the 2000 Census, the Census Bureau replaced the long form with the American Community Survey.

The techniques devised by statisticians to calculate the accuracy of sample results account only for sampling errors — that is, the probability that any finding is an artifact of sampling and does not accurately represent the population as a whole. Statistical techniques do not account for other source of error, such as “response errors, errors arising from incomplete samples, faulty procedures of estimation, errors arising from inadequate preparation of the questionnaire, defective field and office procedures and faulty analysis of the data,” all of which had the potential to arise in full censuses as well as in sample surveys.¹⁷¹ Moreover, statistical estimates of sampling errors assume that samples are drawn from a “sampling frame,” composed of prior information about all potential “sample units,” whether those units are individuals, households, cities, or villages.¹⁷² A complete enumeration is, therefore, a *prerequisite* of a statistically-valid sample. For that reason, the U.N. Population Commission did not recommend sample surveys as a substitute for a complete enumeration, but suggested that they could fill in temporarily and “may well serve as an experimental census paving the way to a complete census to be executed in the near future.”¹⁷³ However, developing an appropriate sampling frame in countries that had never had a census was a challenging task made more difficult by the fact that, in such countries, lists of taxpayers tended to be incomplete or inaccurate, and other modes of identifying sample units — such as a postal system — nonexistent.¹⁷⁴ The Population Commission recommended that, in such cases, villages should serve as the sampling unit. It also acknowledged that “when deciding on the size of the sample it is rarely possible to fix on a definite sampling error in advance to work out the sample size.” Rather, the sample size was usually determined “by the personnel available to analyse the results, the available transport, and by the money which a particular country is prepared to spend.”¹⁷⁵

Given that “sample” censuses and systems of vital registration in countries that lacked

¹⁷¹United Nations Population Division, *1960 World Population Census Programme: Sampling Methods and Population Censuses*, see n. 163, 10.

¹⁷²*Ibid.*, 14.

¹⁷³*Ibid.*, 77.

¹⁷⁴*Ibid.*, 79.

¹⁷⁵*Ibid.*, 79-80.

complete enumerations and registrations usually covered the segments of the population that were particularly tractable to enumeration, such as those living in urban areas, they were typically not representative of the country as a whole. As the U.N. Population Commission acknowledged, “one of the cardinal principles in drawing a ‘representative’ sample. . . is *random* selection,” which is possible only with a known sampling frame.¹⁷⁶ In the absence of complete enumerations, the generalizability of samples could not be calculated with any statistical reliability, and results resembled political arithmetic much more than they resembled the sample surveys that were becoming a routine part of social science research in the United States. Nonetheless, their association with this new “scientific” form of research gave estimates derived in this manner more authority among scientists and policy makers than those described in Kuczynski’s survey of demographic data in the British Colonial Empire.

Indirect Estimation

From the perspective of the U.N. Population Commission, it seems that any number was better than none. For that reason, the U.N. published a series of manuals in the 1950s and 1960s to aid government statistical bureaus in estimating population size and structure and vital rates in the absence of census and vital data. The first manual, published in 1952, stated that “even where a high degree of reliability cannot be attained in view of the limited information at hand, it is still important to obtain at least some kind of a population estimate. . . . If an accurate estimate cannot be made under given conditions, this should not stop efforts to produce as good an estimate as circumstances permit.”¹⁷⁷ The manual provided instructions for estimating total current population in circumstances ranging from a complete lack of quantitative data to complete coverage by censuses and vital registries. In the latter case, demographers could estimate current population size by subtracting deaths and adding births and net migration to the population at the most recent census.¹⁷⁸ In the

¹⁷⁶United Nations Population Division, *Manual I: Methods of Estimating Total Population for Current Dates*, see n. 28, 44, emphasis in the original.

¹⁷⁷*Ibid.*, 3.

¹⁷⁸*Ibid.*, 38.

former case, the manual recommended making “the best conjecture that can be made under given circumstances.”¹⁷⁹

Some such conjectures were made on the basis of travel reports from the nineteenth century or the types of colonial administrative reports surveyed by Kuczynski between the wars. In some cases, figures more closely resembled conventions than estimates. For example, the manual stated that the population of Ethiopia “has been estimated at a round 15 million, it being understood that this figure represents only a rough approximation. In the absence of further information, this same figure is also used as an estimate of probable population size in the past, and is likely to be retained for several years in the future unless new attempts are made to obtain a more reliable estimate.”¹⁸⁰ However, the manual warned against using the same estimate year after year if it was suspected that the population of a given country was increasing or decreasing. For example, in the case of Liberia, it stated that “although the population of Liberia was estimated by a rough conjecture in 1947 at the round number of 1,600,000 it was estimated in 1949 at 1,648,000 on the assumption that population is increasing at a rate of approximately 1.5 per cent per annum.”¹⁸¹ In this example, both the baseline population and its rate of growth were conjectures; the resulting figure gave the impression of population growth, but added a much greater sense of precision than either the baseline estimate or the estimated rate of growth warranted. Indeed, estimating a rate of population growth or decline in the absence of vital statistics was itself no small task, and the manual recommended using “visible evidence of population growth or decline,” such as desertion of settlements or building of new settlements, knowledge of marriage customs and sexual practices, and knowledge of such events as warfare or drought.¹⁸² The manual in fact cited examples of political arithmetic from Kuczynski’s survey — examples Kuczynski himself used to impugn colonial data collection — to illustrate how conjectural estimates

¹⁷⁹United Nations Population Division, *Manual I: Methods of Estimating Total Population for Current Dates*, see n. 28, 10.

¹⁸⁰*Ibid.*, 10.

¹⁸¹*Ibid.*, 10.

¹⁸²*Ibid.*, 16.

might be made.¹⁸³

Given that censuses are generally taken at intervals of at least ten years, estimating current population between censuses requires the same techniques and data as projecting future population. Both types of calculation require knowledge of fertility and mortality rates, either current or anticipated. But, as late as 1963, the *Population Bulletin of the United Nations* reported that, while 99% of the populations of “developed countries” were documented by vital registration, only 10% of the populations of “developing countries” were so documented. Indeed, the existence of vital registration had become one of the markers of “development.” Moreover, for 28 countries that were thought to have collectively held 36% of the world’s population, the U.N. could obtain “no satisfactory data” on vital rates.¹⁸⁴

To remedy this deficit, in 1968 the U.N. Population Commission published a manual titled *Estimating Basic Demographic Measures from Incomplete Data*, written by Ansley Coale, a former student of Frank Notestein who had succeeded Notestein as director of OPR in 1959. As a graduate student, Coale had developed the methods Notestein’s team used to synthesize the data necessary to drive the cohort component model for OPR’s projections of Europe and the Soviet Union, described above.¹⁸⁵ While working on this project, Coale developed the concept of model life tables, which would play a large part in the methods he later developed to indirectly estimate vital rates from incomplete data.

Model life tables are premised on the observation that life tables made from detailed empirical data show strong regularities. On the basis of data from Europe and a few other parts of the world, Coale and his student Paul Demeny developed a set of four “families” of life tables, each exhibiting a different shape to the curve of age-specific mortality and including model life tables for all levels of mortality from expectation of life at birth of 20

¹⁸³United Nations Population Division, *Manual I: Methods of Estimating Total Population for Current Dates*, see n. 28, 12.

¹⁸⁴Cited in Dudley Kirk, “Natality in the Developing Countries,” in *Fertility and Family Planning: A World View*, ed. S.J. Behrman, Leslie Corsa Jr., and Ronald Freedman (Ann Arbor: University of Michigan Press, 1969), 76.

¹⁸⁵See n. 88; Although Coale was not listed as an author of the resulting publication, he was credited with designing and overseeing the approach in the Acknowledgments. Notestein et al., see n. 12.

years (for women) to 75 years (for women), in five-year increments.¹⁸⁶ If mortality for any five-year age group is known in a given population, it can be matched to the mortality for that age group in a model life table from the appropriate “family” to estimate mortality in all other age groups. The life table “families” — North, South, East, and West, were named for the regions of Europe from which the empirical life tables originated. If the shape of the mortality curve for the population in question is known, it can be matched to the most similarly-shaped “family” of model life tables. In the absence of such knowledge, demographers generally select the West model, which is based on empirical data from East Asia, Canada, Israel, Australia, South Africa, and New Zealand as well as Western Europe, and is therefore considered the most general of the four.¹⁸⁷ Once an appropriate model life table is identified, the mortality rates from that life table can stand in analytically for the unknown mortality rates in the population in question.

Closely related to model life tables are model stable populations. The concept of a stable population was developed by Alfred Lotka between 1907 and 1925 to describe “a material system in which the physical conditions vary with time” such that “certain individual constituent elements may have a transitory existence *as such*, each lasting just so long as its conditions and those of its neighborhood continue within certain limits.”¹⁸⁸ Lotka’s language was deliberately vague, as he intended his stable population model to describe any set of living or non-living things where the individual things are subject to wear and eventual retirement, whether the “things” are people or industrial components. A stable population is one that is subject to constant rates of addition (fertility) and subtraction (mortality), and is closed to migration (or in the industrial example, does not permit the addition of used components and does not permit the removal of components that are still functional). When

¹⁸⁶Ansley J. Coale and Paul Demeny, *Regional Model Life Tables and Stable Populations* (Princeton: Princeton University Press, 1966).

¹⁸⁷William Brass et al., *The Demography of Tropical Africa* (Princeton: Princeton University Press, 1968), 123; United Nations Population Division, *Manual IV: Methods of Estimating Basic Demographic Measures from Incomplete Data*, *Manuals on Methods of Estimating Population* (New York: United Nations Department of Social Affairs, 1967), 8.

¹⁸⁸Alfred J. Lotka, “Studies on the Mode of Growth of Material Aggregates” (1907): 199–216, 199, emphasis in the original.

rates of fertility and mortality remain constant over long periods of time, in the absence of migration, populations grow at a constant rate (positive, negative, or zero) and the proportions in each age group remain constant (stable). The stable population model therefore links the mortality, fertility, and age structure of a population, such that any two of these pieces of information are sufficient to derive the third. For any given population that can be presumed stable, once a model life table is selected, the analyst needs only a sense of the fertility rate or rate of natural increase to select a model stable population, which provides all of the additional information required to project future population growth — age structure and age-specific rates of fertility and mortality.

But how could demographers fit real populations to model life tables and model stable populations in the absence of detailed information on mortality and fertility? During the 1960s, Coale led a project on demography in Sub-Saharan Africa that explored just this question, developing methods of indirect estimation of mortality and fertility rates that are still taught in demography courses. Published in 1968 as *The Demography of Tropical Africa*, the project was funded by the Rockefeller Foundation, the Ford Foundation, the Population Council (these three organizations will be discussed at greater length in Chapter Four), the Milbank Memorial Fund, and the Carnegie Institution at the instigation of Frank Lorimer, who had already done substantial research in Africa and had established institutional connections there.¹⁸⁹ This project was important to OPR demographers because, by the time of its proposal in the early 1960s, several African states and colonies had taken censuses, but much of the data had not yet been analyzed, leaving Africa the most difficult continent for which to estimate current population and vital rates and project future population. Furthermore, in contrast to Kuczynski's earlier assertion, preliminary analysis had "indicate[d] the exciting possibility that African fertility is higher than that observed in any other large population in the past."¹⁹⁰ But, despite the increased availability of censuses in Africa, U.S.

¹⁸⁹William Brass to Frank Lorimer, Oct. 1, 1961, folder 2, box 1.

¹⁹⁰Ansley J. Coale to Members of the Faculty Advisory Committee of the OPR, Nov. 25, 1960, folder 2, box 1.

demographers recognized that “data from successive censuses cannot generally be used for reliable estimates of *population changes*, because of the possible influence of variations in procedures and circumstances on the calculation of differences.”¹⁹¹ That is, differences in population counts between the 1950 and 1960 censuses resulted not only from actual population change, but also from changes in census coverage and enumeration methods, and therefore could not be used to estimate fertility and mortality rates. Moreover, vital statistics were nearly nonexistent and demographers concluded that “information on age [wa]s also unreliable.”¹⁹² For these reasons, Coale described his project as an “experimental program for obtaining reliable information on fertility, mortality and migration in situations where one cannot reasonably expect a rapid development of effective vital registration systems of a classic type in the near future.”¹⁹³ This approach to demography in Africa suggests that the continent continued to serve as a “living laboratory” for metropolitan scientific endeavors, both natural and human, even after formal decolonization.¹⁹⁴

In addition to Coale and Lorimer, the project team included Coale’s former student Paul Demeny, then an economist at the University of Michigan; Belgian demographer Etienne van de Walle; Don F. Heisel, a field associate with the Population Council; Anatole Romaniuk, a demographer at the University of Ottawa; and William Brass, a medical demographer at the London School of Hygiene and Tropical Medicine. Brass, who had previously worked in the British Colonial Service’s East African Statistical Office, took the lead on developing methods of “abstracting valid information from bad data.”¹⁹⁵ The methods he developed were remarkably reliable, and are now known as indirect estimation methods or simply Brass methods. By 1988, Brass had become so well known for having developed a method to estimate just about any measure for which data were lacking that, when rain broke out

¹⁹¹Frank Lorimer, “Notes of African Population Studies,” n.d., folder 2, box 1, emphasis in the original.

¹⁹²Ibid.

¹⁹³Ansley J. Coale, “Memorandum on Experimental Studies of Population Dynamics in Areas Without Effective Civil Registers — With Special Reference to Africa (Draft),” Mar. 22, 1960, folder 2, box 1.

¹⁹⁴The phrase “living laboratory” was used initially by Lord Hailey in response to the 1938 publication of the African Survey. Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950* (Chicago: University of Chicago Press, 2011), 5.

¹⁹⁵See n. 88; Coale to Faculty Advisory Committee of the OPR, Nov. 25, 1960, see n. 190.

at an OPR picnic, one student joked that they “should use the Brass method for keeping off the rain drops.”¹⁹⁶

Coale has described Brass as believing on the one hand that his methods were “no substitute for good data,” and on the other that “all data are guilty until proved innocent.”¹⁹⁷ This duality in Brass’s thought exemplifies the recursive relationship between data and analysis. Demographers needed to analyze the data they received from governmental and nongovernmental agencies in order to determine population dynamics, but in order to make those data amenable to analysis they often needed to use analytical methods and mathematical identities — along with theories about how populations change — to smooth and standardize the data they had and synthesize the data they didn’t have.

Because vital registration systems were either nonexistent or incomplete in most sub-Saharan African countries, Brass developed methods for estimating mortality and fertility from cross-sectional surveys and censuses.¹⁹⁸ These methods ensured identity between the numerator and denominator of vital rates, and depended on asking women questions about their childbearing histories and their surviving relatives. To gauge fertility, women were asked two questions: how many children they had had in the last year (or some other period of time) — which Brass termed “current” fertility — and how many children they had had altogether — which Brass termed “retrospective” fertility.¹⁹⁹ Brass assumed that answers to both questions would be systematically biased, but that by triangulating these biases, demographers could arrive at a plausible set of age-specific fertility rates for the population in question.

Brass expected that reports of current fertility would exhibit systematic bias in the reference period. Drawing from experience with survey research on household consumption in the United States and the U.K., he argued that, when asked how many children they had

¹⁹⁶See n. 88.

¹⁹⁷Ibid.

¹⁹⁸William Brass, “Demographic Data Analysis in Less Developed Countries: 1946-1996,” *Population Studies* 50, no. 3 (1996): 453.

¹⁹⁹Brass et al., see n. 187, 90.

had in the last year, women might not actually report for the last year, but might report for the last eight months or sixteen months or some other period of time. Brass conjectured that the actual reference period women used to answer the question would be the same for all women in a given society, regardless of their age. Therefore, questions about current fertility might not accurately reflect the number of children born in the previous year, but would accurately reflect differences in fertility across age groups. That is, answers to questions on current fertility would accurately describe the *shape* of the curve of age-specific fertility in a given society but not necessarily its *level*. To determine the level, Brass used answers to questions about retrospective fertility only among younger women, who were thought most able to accurately report the number of children they had ever had because these events would have happened more recently and therefore would be less subject to memory lapses.²⁰⁰ Brass therefore used the retrospective fertility of young women to derive a correction factor to be applied to reports of current fertility across the age spectrum and thereby produce a more accurate schedule of age-specific fertility for the society in question.²⁰¹ Similarly, infant and child mortality rates were estimated by asking women in each age group how many of their children had died, and adult mortality rates were estimated by asking women whether their parents and siblings were still alive.²⁰² With this information, any population could be fit to a model life table and model stable population, which then provided all of the information needed to estimate the current age structure of the population and project its future size and structure.

Coale and Brass recognized that censuses and surveys did not accurately capture ages in societies where people “do not know their exact ages and are not fundamentally interested in knowing them,” as was the case in most of Africa, the Middle East, and South Asia.²⁰³ The fact that censuses and surveys asked about something that was of no relevance to the people

²⁰⁰Brass et al., see n. 187, 91; Brass, “Demographic Data Analysis in Less Developed Countries: 1946-1996,” see n. 198, 456.

²⁰¹Brass et al., see n. 187, 92.

²⁰²Brass et al., see n. 187, 104; Brass, “Demographic Data Analysis in Less Developed Countries: 1946-1996,” see n. 198, 461, 463-464.

²⁰³Brass et al., see n. 187, 13.

being asked — their age in years from birth — suggests that the information they collected was intended to benefit the international agencies that analyzed the data rather than the people the data described. In some parts of Africa, following the pattern of the colonial period, enumerators classified girls and women into the categories of under one year old, one year to puberty, puberty to menopause, and post-menopausal, and classified boys and men into the categories under one year old, one year to taxpaying age, and taxpaying ages.²⁰⁴ These categories suggest the gendered division of productive and reproductive labor that characterized many colonial societies. In other places, enumerators used the appearance of subjects, their memories of major events, and their marital status and childbearing histories to estimate their ages, though such methods often imposed the enumerators' ideas and values — regarding, for example, how old a married woman “must” be — onto the people they recorded. In preparation for Nigeria's 1962 census, the Census Office asked each local and district council to set up a Historical Event Committee to submit to the Census Office local historical events that could be used to estimate individual ages. Such events included

wars; the accession and deaths of Obas and important chiefs; traditional local activities associated with particular periods and seasons; the regrouping of towns and villages; the deaths of prominent citizens; the building of new roads and tarring of existing ones; the opening of schools, churches, hospitals, dispensaries, town halls, post offices, markets, waterworks, and other public institutions; spectacular fires and other disasters; riots, murders, land disputes, and other important cases; the arrival or departure of remarkable officials, including residents, district officers, doctors, headmasters, Imams, and clergy; spectacular marriage ceremonies, funerals, or other social events in the area; local, regional, and national elections; the introduction of various types of currency; the introduction of taxation and changes in tax laws; the introduction of free primary education; the attainment of independence.²⁰⁵

The Census Office compiled and standardized the list for each local area and for the country as a whole, and distributed it to census enumerators to assist them in recording ages.

Age heaping — the tendency to round ages to years ending in zero or five — is prevalent in all societies, even where people do typically know their exact ages. Censuses and surveys

²⁰⁴Brass et al., see n. 187, 14.

²⁰⁵Aluko, see n. 135, 379.

in anglophone African countries exhibited this common pattern, with the numbers reported at ages ending in zero or five much greater than those reported at other ages. In francophone African countries, enumerators were cautioned to be wary of reporting ages ending in zero or five, which resulted in inverse age-heaping — the number reported at those ages were much lower than those reported at other ages.²⁰⁶ Demographers used model stable populations to smooth distorted age distributions, but fitting an actual population to a model stable population required reliance on vital rates calculated for reported ages, introducing circularity into the process.

As a result of the introduction of more regular censuses, sampling, and indirect estimation, by the mid-1960s the U.N. Population Commission had access to global demographic data that were detailed enough to track the growth of the world's population and project it into the future. In many cases, these data were what Martha Lampland has termed “provisional numbers” — numbers that stand in for unknown values to facilitate “formalizing practices,” such as the quantification of future population to plan social and economic development.²⁰⁷ Lampland argues that provisional numbers are often used when an actual value is unknown, but some number is needed to get on with the work at hand. In the case of population data in the early postwar period, the provisional numbers produced through sample censuses and vital registration systems, and by indirect estimation, allowed demographers to get on with the work of projecting population into the future, which, in turn, allowed planners to get on with their work. Moreover, the U.N. Population Commission viewed incomplete censuses and sample vital registries as progress toward complete coverage — rendering populations enumerable by establishing infrastructures for enumeration and teaching people to think of themselves in age, sex, and other socially-relevant categories. As the production of detailed statistics was considered a characteristic of development, encouraging the collection of population data — even provisional data — could be viewed as

²⁰⁶Brass et al., see n. 187, 34.

²⁰⁷Martha Lampland, “False Numbers as Formalizing Practices,” *Social Studies of Science* 40, no. 3 (2010): 378.

promoting modernization. Over time, as the U.N. acquired more accurate population data, it made new estimates for population figures at earlier dates. However, although the creators of these data recognized their provisional nature, as Lampland points out, the farther one gets from the process of data production, the more faith are placed in the data: for lack of alternatives, policy makers and scientists relied uncritically on the population data published by the U.N. for planning and modeling purposes.

The validity of the stable population model rested on the assumption that the population in question was, in fact, stable — that is, that it had experienced a constant mortality schedule and birth rate for the last several decades, and that it was closed to migration. Such assumptions were both improbable and untestable, given the paucity of historical data, and relied on demographic transition theory, which held that, prior to “modernization,” all societies had high and constant mortality (though subject to fluctuations resulting from famine and epidemics), high and constant fertility, and negligible migration, and were thus stable. With this assumption, demographic transition theory — like modernization theory — elided the history and politics of so-called “pre-transitional” societies, placing them in an ethnographic present that implied cultural stasis and excluded these societies from world history and politics.²⁰⁸ Coale argued that the assumption of unchanging fertility was valid for “developing countries where the population is little affected by international migration, and in the absence of major catastrophes such as wars or great epidemics.”²⁰⁹ However, he recognized that, even in these countries, mortality had been declining since the late 1940s as a result of international public health interventions. These mortality declines and the population growth they stimulated will be discussed at greater length in the next section and in Chapter Four. In the 1960s, Coale and Demeny experimented with the applicability of stable population models to populations with constant fertility and declining mortality, which they termed “quasi-stable.”²¹⁰ From this research, they derived a table of adjustments

²⁰⁸Roger Sanjek, “The Ethnographic Present,” *Man* 26, no. 4 (1991): 609–628.

²⁰⁹United Nations Population Division, *Manual IV: Methods of Estimating Basic Demographic Measures from Incomplete Data*, see n. 187, 25.

²¹⁰Ansley J. Coale, “Estimates of Various Demographic Measures through the Quasi-Stable Age Distribu-

that could be applied to vital rates estimated from stable populations to account for falling mortality.²¹¹

3.4 Challenges to Demographic Transition Theory

The population estimates and projections produced using indirect estimation methods and the cohort component projection method relied, at least to some extent, on demographic transition theory. While the cohort component method of population projection is formally independent of any theory of population growth, in practice, demographers and others employing the method assumed that the demographic history of Western Europe and North America predicted the demographic future of the rest of the world. Dudley Kirk, a research associate at OPR during the war and a demographer for the U.S. Department of State after the war, encapsulated this assumption in a 1944 article in the *American Sociological Review*, where he stated that

in regard to demographic matters the different countries of the world may be considered as on a single continuum having both spatial and temporal significance. It is spatial in that the degree of development is related to the cultural and geographical accessibility to the most advanced countries. It is temporal in that each country in its development is following a general historical pattern common to all.²¹²

Demographic transition theory, like modernization theory, elided the historical connections between the supposedly more and less “advanced” parts of the world, obscuring the crucial fact that Europe’s demographic transition had relied on extracting wealth from the global south and resulted in sending excess population to other parts of the world.

tion,” in *Emerging Techniques in Population Research*, ed. Milbank Memorial Fund (New York: Milbank Memorial Fund, 1963); Paul Demeny, “Estimating Vital Rates for Populations in the Process of Destabilization,” *Demography* 2 (1965): 516–530.

²¹¹United Nations Population Division, *Manual IV: Methods of Estimating Basic Demographic Measures from Incomplete Data*, see n. 187, 26.

²¹²Dudley Kirk, “Population Changes and the Postwar World,” *American Sociological Review* 9, no. 1 (Feb. 1944): 29.

In the immediate postwar period, new trends in population dynamics challenged the very core of demographic transition theory — the proposition that all populations had undergone or would undergo a decline in mortality followed by a decline in fertility, both resulting from an inevitable process of modernization. Two specific trends appeared as anomalous to the predictions of demographic transition theory. First, during and after World War II, birthrates rose in supposedly post-transitional populations, suggesting that fertility did not necessarily follow a one-way downward trajectory. Second, medical and public health interventions in Asia, Africa, and Latin America had begun to reduce mortality rates much more quickly than they had historically declined in Europe. Moreover, these mortality declines were not accompanied by the forms of economic development that were expected to reduce fertility, raising the question of whether the demographic transition model — if even applicable to Europe itself — could be applied outside Europe. As Taeuber stated, “the *a priori* assumption that the future populations would develop as orderly extensions of the trends of interwar years became increasingly questionable in the postwar period.”²¹³

The wartime and postwar rise in fertility in North America, Western Europe, and Australia — now known as the “baby boom” — defied all population projections for those areas produced before World War II. In each projection Whelpton and Thompson made of the U.S. population after 1928, they successively revised their assumptions of future fertility downward, reflecting the sharp fertility decline experienced during the worldwide Great Depression. From our current vantage point, it seems clear that fertility rates fell to extreme and unsustainable lows in the 1930s as a result of the global economic depression. During the Depression, however, demographers interpreted the fertility decline they witnessed in Western Europe and North America as part of a longer pattern that had begun in the nineteenth century and would soon lead to absolute population decline.²¹⁴ In OPR’s wartime projections for Europe, Notestein and his colleagues concluded that “population growth will cease and decline will begin within a generation in Europe west of the 1937 boundaries of

²¹³Taeuber, “Literature on Future Populations,” see n. 103, 2.

²¹⁴Van Bavel, see n. 174.

the Soviet Union.”²¹⁵ But, even by the time Notestein and his team published their projections, fertility had risen dramatically in Western Europe, North America, and Australia. In response, Thompson and Whelpton began to revise their projections upward in 1943. In 1948, the National Resources Planning Committee of the United States commissioned new projections from them, as their 1943 projections were clearly too low, but already by 1949, the 1948 projections also had “proved too conservative even in their maximum estimates of number of births.”²¹⁶ In a 1957 dissertation, OPR graduate student George Mair found that OPR’s wartime projections for Europe had, for each date since 1940, consistently underestimated population growth. Following a review of all major national-level projections to that point for the U.S. and Europe, Mair concluded that, “as precise forecasting devices, projections have on balance been a failure” because none had accorded with actual population dynamics.²¹⁷

Discrepancies between projected and realized populations challenged the prevailing certainty about the value and validity of population projections, the expertise of the scientists who made them, and the demographic transition theory on which they were based. Expressions of doubt came from close to the demographic profession, mainly from demographers and other social scientists. One particularly prominent mid-century critic of U.S. population projections based on demographic transition theory was economist Joseph Davis (no relation to Kingsley) of the Stanford University Food Research Institute. Davis described himself as a “‘consumer’ of population data and forecasts.”²¹⁸ In a 1949 pamphlet, Davis attacked Thompson and Whelpton’s projections for embodying “assumptions that time has proved *unreasonable*,” namely the extrapolation of the interwar fertility decline into the postwar period.²¹⁹ Davis argued that fertility trends could not reasonably be extended into the future

²¹⁵Taeuber, “The Development of Population Predictions in Europe and the Americas,” see n. 146, 333.

²¹⁶“The Population Forecasts of the Scripps Foundation,” *Population Index* 14, no. 3 (July 1948): 189.

²¹⁷Mair, see n. 2, 414.

²¹⁸Joseph S. Davis, “Our Amazing Population Upsurge,” *Journal of Farm Economics* 31, no. 4 (1949): 773.

²¹⁹Joseph S. Davis, *The Population Upsurge in the United States* (Stanford: Food Research Institute, 1949), 39, emphasis in the original.

because the factors that influenced fertility did not do so consistently. Characteristics associated with lower fertility levels in the 1930s — contraceptive use and higher socioeconomic status — were associated with higher fertility levels in the 1940s. Contraceptive practice became more, not less, prevalent during the baby boom, and wartime fertility increases were led by those with higher levels of income and education, reversing the fertility differentials that had prevailed between the wars, as described in Chapters One and Two.

This reversal led Davis to criticize demographers' practice of assuming that cross-sectional correlations can predict the response of one variable to changes in another. Davis warned that "one of the dangerous errors into which one easily falls is to assume that generalizations based on a cross-section analysis at a given time can be applied to changes over time."²²⁰ Studies of differential fertility in the 1930s, such as those sponsored by the Milbank Memorial Fund and described in Chapter Two, had found lower levels of fertility among those with higher levels of income and education, and among those who used contraception. On the basis of these cross-sectional analyses, demographers had assumed that the spread of education and contraception, and generally rising prosperity, would lead to lower overall fertility. However, the *correlation* between socioeconomic status and contraceptive use obscured an *interaction* between these variables that had become apparent in the Indianapolis Study. In the general population, fertility was *inversely* correlated with socioeconomic status: those with higher levels of education and income had fewer children. However, among the contraceptive segment of the population, fertility was *directly* correlated with socioeconomic status: those with higher levels of education and income had more children. Since the wartime and postwar spread of family planning had coincided with a dramatic increase in prosperity, it had allowed couples to plan more children. Davis criticized the interwar assumption that the diffusion of contraception would further reduce fertility, arguing instead that increasing *control* over fertility does not necessarily produce decreasing *levels* of fertility. Rather, it simply provides the "ability to regulate, up or down."²²¹

²²⁰Davis, *The Population Upsurge in the United States*, see n. 219, 54.

²²¹*Ibid.*, 54.

In a 1950 presentation to the American and Western Farm Economics Association, Davis reviewed the population predicted for 1950 by each of Thompson and Whelpton's projections, all of which fell well below the then-expected mid-year figure of 152 million.²²² Davis argued that the failure of these projections discredited demographic transition theory, and urged that "we must unlearn several of the generalizations that population specialists have effectively taught."²²³ Citing the recent rise in fertility, Davis questioned the validity of the three stages of demographic transition laid out by Thompson in 1929: pre-transitional (high fertility and mortality, little growth), transitional (high fertility and falling mortality, rapid growth), and post-transitional (low fertility and mortality, no growth or "incipient decline"). Thompson had placed the U.S., along with the countries of Western Europe, into the third category, but Davis argued that "as of 1949, the United States does not clearly fit into any of the neat categories," and that "man's fresh upsurge in this country... seems to put us in a new category."²²⁴ Davis was not suggesting that the U.S. should be reclassified into the transitional group, but rather that the three categories of demographic transition were inadequate to describe complex demographic trends.

Davis was not alone in his critique of demographic transition theory as a predictive instrument. British demographer John Hajnal acknowledged that the main reason interwar projections had come under attack was not the numeric difference between projected and actual population, but rather that "they were intended principally to illustrate one thing, the prospect of the end of population growth and of actual decline in the near future," whereas observed population dynamics had shown another thing — the recovery of fertility following a return to prosperity. He argued that "if the populations of Western nations today fell short of the predicted populations by as great a percentage as they in fact exceed them, this would probably be considered a triumphant justification of the analysis underlying the projections," as it would not have contradicted demographic transition theory.²²⁵

²²²Davis, "Our Amazing Population Upsurge," see n. 218, 768.

²²³Davis, *The Population Upsurge in the United States*, see n. 219, 62.

²²⁴Ibid., 59, 60.

²²⁵Hajnal, "The Prospect for Population Forecasts," see n. 121, 46.

Demographers and demographic transition theory looked bad not because they had produced projections that were wrong in the *magnitude* of change in the growth rate but because they produced projections that were wrong in the *direction* of change in the growth rate, predicting a cessation of growth and even decline when what actually occurred was a revival of growth. Hajnal did not criticize demographers for failing to predict the baby boom, maintaining that “it seems almost impossible that anyone, however great his ingenuity and however extensive his knowledge of the facts, could have envisaged the ‘baby boom’ of the 1940’s.” However, he went on to ask, “if with all our hindsight we cannot blame the demographers of the 1930’s, what reason have we to expect better luck in the future?” Hajnal questioned the entire premise of projection, stating that “it is the failure of human history to repeat itself, the appearance of the new and unexpected that renders the search for good methods of forecasting hopeless.”²²⁶ Indeed, the very basis of demographic transition theory is the premise that history will repeat itself, specifically that the observed demographic history of England and other countries of Western Europe and North America will repeat itself in every country of the world.

Challenging that premise, public health interventions, particularly in Asia and Latin America, had begun to suggest that, at least demographically, the future of those continents would not unfold according to the pattern supposedly set by Western Europe and North America. As a result of these interventions, mortality began to decline sharply, resulting in rapid population growth in the absence of the modernization that was expected to produce fertility decline and bring population to stationarity at a low-mortality and low-fertility equilibrium. As Notestein put it, “the population grows a good deal as it did in the West, but unlike the situation in the West, the growth stage has not been accompanied by the social changes that eventually lead to an end of expansion.”²²⁷ Chapter Four will explore in much greater detail how demographers and their interlocutors understood and responded to

²²⁶Hajnal, “The Prospect for Population Forecasts,” see n. 121, 44.

²²⁷Frank W. Notestein, “Problems of Policy in Relation to Areas of Heavy Population Pressure,” *Milbank Memorial Fund Quarterly* 22, no. 4 (Oct. 1944): 443.

postwar mortality decline in Asia, Africa, and Latin America. The point here is, if vital rates were changing outside of the context of demographic transition, then demographic transition theory was powerless to predict those changes or to project the resulting population growth. Just as the baby boom challenged the projection of population in Western Europe and North America, public health interventions in Asia, Africa, and Latin America challenged projection in those parts of the world.

These challenges to demographic transition theory threatened the authority of the population estimates and projections predicated on it, and even threw into question the entire enterprise of population projection. Whereas confidence in the authority of demographers to project future population had reached its apex between 1944 and 1952, as described above, Hajnal admitted at the 1954 World Population Conference that “in the light of the unexpectedly high rate of population growth of recent years the record of the projections does not look very impressive.”²²⁸ He continued that “a striking indictment could be drawn by piling up examples of wide discrepancies between populations as forecast and as enumerated,” and pointed out that “in many cases, the complex work of the forecasters achieved predictions which were further removed from the facts than naïve extrapolations... or even the simple prediction that the population would remain constant.”²²⁹ Davis did not reject the practice of population projection altogether, but he did reject the authority of demographers to make projections, questioning their claims to scientific expertise. He declared himself “ashamed that, like most of my fellow social scientists, I have so long accepted the conclusions of the population specialists with naïve faith.”²³⁰ He argued that “the population forecasting task, though technical and detailed, is not really simple, as many have supposed, and the requisite ‘know how’ has not yet been acquired. It is highly important that all ‘consumers’ of population forecasts should clearly realize these facts.”²³¹ The title of Mair’s 1957 dissertation, “Population Projections: The State of an Art,” was itself an implicit critique of population

²²⁸Hajnal, “The Prospect for Population Forecasts,” see n. 121, 43.

²²⁹Ibid., 45.

²³⁰Davis, “Our Amazing Population Upsurge,” see n. 218, 773.

²³¹Davis, *The Population Upsurge in the United States*, see n. 219, 37.

projection, and he concluded that the practice was not a science but rather an “art.” “With no dependable methodology to use, no certain idea how his projections will be applied, and no agreed-upon criteria for his success,” Mair concluded, “the author of population projections would seem to be operating in an area where intuition, ingenuity, a ‘feel for the data,’ and a measure of good fortune are desirable qualifications for activity.” He expressed his hope that “future progress will reduce the proportion of art and increase the proportion of science in the preparation of population projections.”²³²

Davis suggested that demographers themselves had willfully concealed the uncertainty and lack of scientific basis for population projections, describing himself as “disturbed that, so far as I can ascertain, the guild of population specialists has minimized the errors of judgment, published no serious investigation into the sources of error, and been slow to warn the rest of us that several basic assumptions which have long been cherished are either unsound or seriously questionable.”²³³ By referring to demographers as a “guild,” he further disparaged their authority as scientists. Davis also challenged the status of demography as an independent field of expertise, imploring his fellow economists that “we can ill afford to accept uncritically, and use as authoritative in our own work, the results of any other group of specialists.” He further asserted that “if we continue to build on the crumbling foundations I have described, we shall have no excuse for consequent errors in our own work.”²³⁴

The emergence of population trends at variance with the predictions of demographic transition theory, together with the data friction described above, posed a serious threat to the legitimacy of the new field of demography in the U.S., which continued to rely heavily on its patrons — external funders of demographic research — and clients — consumers of population estimates and projections. As OPR and PAA began to look for new patrons in the postwar period, theoretical anomalies and data friction challenged the claims of Notestein and other American demographers to produce accurate and useful knowledge about present

²³²Mair, see n. 2, 420.

²³³Davis, “Our Amazing Population Upsurge,” see n. 218, 774.

²³⁴Ibid., 773.

and future population. Robert Hutchins, a Ford Foundation board member, responded to the suggestion that the Foundation fund demography research with the opposition that “as everyone knows, those demographers’ populations couldn’t have been wronger [sic],... the field is obviously full of charlatans, there’s no scientific basis to it whatever, and we should have nothing to do with it.” When others tried to persuade him, he maintained that “these fellows are no good and I’ll have nothing to do with them.”²³⁵ In 1944, economist Simon Kuznets, in a review of OPR’s work for the Rockefeller Foundation, pointed to the inadequacy of population data. He argued that the paucity of data made demographers reluctant to attempt “synthesis of a wide scope in space and extension in time,” and instead focused demographic analysis on “the few countries and the limited periods for which data are known to be tolerably good.”²³⁶ He concluded that, as a result of data limitations, the science of demography was very much in its infancy, and not yet useful as a basis for other scientific models.

In general, although demographers acknowledged the failure of interwar projections to accurately predict postwar population dynamics, they defended their unique authority to project future population. Even as Hajnal argued that “as little forecasting as possible should be done,” he recognized that it would be done nonetheless because governments and inter- and non-government agencies were still demanding “forecasts (generally relatively short-term forecasts) which differ by only a small percentage from the actual population, whether they be based on a correct appreciation of the forces at work or on black magic.”²³⁷ As Mair reiterated, “projections are needed, however, and will be made by someone.”²³⁸ Both Hajnal and Mair maintained that that “someone” should be a demographer — someone with training in the calculation of demographic indices and the theory of demographic transition.

²³⁵Charles T. Morrissey, “Bernard Berelson Interview for Ford Foundation Oral History Project, Session One,” July 7, 1972, Population Council Records, Rockefeller Archive Center, Sleepy Hollow, NY, box AD25, accession 2.

²³⁶Simon Kuznets to Joseph Willits (Rockefeller Foundation), Dec. 6, 1944, box A82, series 200s, record group 1.1.

²³⁷Hajnal, “The Prospect for Population Forecasts,” see n. 121, 48.

²³⁸Mair, see n. 2, 439.

In contrast to Taeuber's triumphant statement from the previous decade that, as more data become available, population projections need to rely less on theory, Hajnal argued that whatever projections were made "should involve less computation and more cogitation than has generally been applied," and asserted the unique expertise of demographers to undertake that "cogitation," arguing that "forecasts should flow from analysis of the past. Anyone who has not bothered with analysis should not forecast."²³⁹

An unsigned article in *Population Index*, likely the work of Taeuber or Notestein (or both), also defended demographers' unique expertise to project population, describing the specialized analysis that went into the prediction of future vital rates:

These terminal rates [of fertility and mortality at the end of the demographic transition], and the specific paths pursued in reaching them, are estimated on the basis of various factors, such as the past experience of the United States and of foreign countries with longer statistical series or more advanced demographic developments, the differentials and the trends in the differentials among the states in the United States, the matrix of causal factors that are operative, and the theoretical or physiological limitations to change. Thus the judgment as to the maximum probable range of the rates that will exist at some distant period and the path to that future period is a mature judgment based on inference from empirical trends of the past and the situation of the present combined with historical and analytical research on the dynamics of the components.²⁴⁰

This statement marks a departure from the typical language of population projection as a mathematical exercise devoid of judgment, described in Chapter One. The actual arithmetic of the cohort component projection method can be done by anyone or by a computer. Here, however, the author highlights the speculative element of projection and demographers' privileged position from which to do that speculative work. The phrase "mature judgment" highlights demographers' expertise and authority. Their predictions are certainly empirical, in the sense of being based on quantitative evidence, but future vital rates are not given in the data and therefore cannot be determined by a casual observer or by a computer: rather, their prediction requires the "mature judgment" of someone trained in population science.

²³⁹Hajnal, "The Prospect for Population Forecasts," see n. 121, 51.

²⁴⁰See n. 216, 189.

Indeed, the article argues, in the hands of someone so trained, the prediction of future vital rates is not speculative but scientific. Such strong assertions of demography's capability to project future population suggests the degree to which demographers felt their authority threatened.

Conclusion

This chapter has demonstrated that, during and after World War II, governments and inter- and non-governmental agencies began to rely on population estimates and projections as critical inputs for military, industrial, social, and economic planning, and on demographers to produce those estimates and projections. Demography gained new clients during and after World War II, leading to a small expansion of academic demography at Princeton University, and producing new jobs in government and in inter- and non-governmental organizations for demographers. As the field of demography expanded and gained new clients, it also broadened its scope from North America and Europe to Latin America, Asia, and Africa, to facilitate the planning of modernization by inter- and non-governmental organizations, particularly the U.N. and its new specialized agencies.

As demographers turned their attention to Latin America, Asia, and Africa, and as the United Nations began to compile demographic and other socioeconomic data for those parts of the world, it became apparent that those data would not be readily forthcoming. Demographers depend on data collected for other purposes — usually by governments for the purpose of administration — and in many parts of the world, population data simply had not been collected, or had not been collected recently or regularly. Where such data were available, they often lacked the detail necessary to estimate current population size and project it into the future. Analysis of existing population data required sifting through large quantities of narrative metadata explaining how the data had been produced and which segments of a given population they covered, limiting the portability of population data and

their commensurability for longitudinal and international analysis.

In response to the global paucity of population data, the U.N. encouraged member states to take roughly simultaneous censuses around 1950 and 1960, using schedules that would produce comparable results. Although the U.N. offered technical assistance in setting up census and vital registration systems in member states, many lacked the funds and infrastructure to enumerate population and record vital events on a universal basis. Moreover, the politics of census taking at the national level and reporting census results internationally limited the availability and reliability of population data for some countries. To produce complete and comparable data from incomplete censuses and vital registers, demographers developed methods of indirect estimation of age structures and vital rates, which the U.N. promulgated among the statistical offices of its member states to meet the U.N.'s demand for population data. The resulting data were “provisional numbers” — numbers that were recognized by their producers to be inaccurate, but that nonetheless allowed demographers to project future population and allowed governments and intergovernmental agencies to get on with the work of planning.

The methods demographers developed to smooth and synthesize unruly and unavailable data relied on demographic transition theory, as did the cohort component projection method, which used demographic transition theory to predict future rates of fertility and mortality. But, after the war, new demographic trends — rising fertility in North America, Western Europe, and Australia and falling mortality elsewhere — challenged the utility of demographic transition to predict population change anywhere in the world, and had the potential to challenge the utility of data produced on the basis of demographic transition theory. The authority of demographers to analyze and project population plummeted from its postwar high to a nadir in the mid-1950s, when their failure to predict the baby boom led other scientists and potential funders to discredit their work, and led demographers to question and then reassert their own legitimacy.

Ultimately, the data friction and theory challenges demographers encountered at mid-

century did not undermine their authority to analyze and project population. As the following chapter demonstrates, new potential funders of demography — the Rockefeller Foundation, the Ford Foundation, and others — were more concerned about the geopolitical and geoeconomic threats posed by population growth in Asia, Africa, and Latin America than they were by demographers' ability to estimate and predict population, and demographers recuperated demographic transition theory by associating it even more closely with modernization theory. Over the next two decades, demographers and their new supporters increasingly drew on demographic knowledge and authority as the basis from which to plan population itself through programs to reduce fertility — and thereby reduce population growth — throughout Asia, Africa, and Latin America.

Chapter 4

The Mid-Century Global Demographic Crisis

This chapter traces the resolution of the mid-century crisis of global demography described in Chapter Three, which revolved around two axes. The first was the inability of demographers and inter-governmental agencies — particularly the new U.N. Population Division — to collate commensurable global population data with the requisite detail to project population size and structure into the future. The second was the emergence of new demographic trends that presented anomalies to demographic transition theory: rising fertility in the global north and falling mortality in the global south. I argue that demographers recovered their own scientific authority and that of their field by creating a new Cold War version of demographic transition theory that incorporated the multiple causality of modernization theory — the idea that complete modernization could be triggered by shifts in any of the social, political, or economic realms, through contact with societies that were already “modern.” Whereas interwar demographic transition theory posited demographic transition — falling mortality followed by falling fertility — as a *result* of modernization, Cold War demographic transition theory posited that causality could work in either direction: that demographic transition could also *stimulate* modernization. I argue further that this Cold War version of demographic transition theory provided intellectual support for an economic discourse of overpopulation that was, at that same postwar moment, emerging from philanthropic and business interests in the United States, who provided demography with new patrons and clients, allowing the field to grow in size and stature.

Despite the paucity of global population data described in Chapter Three, evidence of rising fertility in the global north and falling mortality in the global south indicated world-

wide population growth in the immediate postwar years. Given the alarms demographers and policy makers had sounded in response to the dramatic fertility declines of the interwar period — discussed in Chapter Two — it was not at all clear in advance that scientists or policy makers should have viewed this new postwar population growth with trepidation. Yet we know that they did. Histories of population thought and policy after World War II describe how governments and inter- and non-governmental organizations responded to the postwar crisis of rapid population growth and impending overpopulation. In general, they take their actors' concerns about the deleterious consequences of population growth at face value, beginning with the assumption that population growth produced a clear and uncontroversial threat to the global environment, world peace, and economic development in the global south.¹ That is, they begin from the premise that growing populations signaled impending *over*population.

In contrast, this chapter examines how scientists, philanthropists, businessmen, and policy makers came to understand world population growth as a danger. As I have demonstrated in earlier chapters, prior to World War II, there was no scientific or political consensus regarding the valence of population growth. Granted, many observers viewed population growth in Germany and Japan as important causes of World War II, but they and others also saw the leveling off of population growth among the Allied countries as a factor. These observers attributed shifts in the geopolitical balance of power to international growth *differentials* rather than overpopulation *per se*. While most histories of population thought and policy in the second half of the twentieth century uncritically equate growing world population with impending overpopulation, I argue that population growth only becomes impending overpopulation when negative consequences are attached to it. I contend further that the negative consequences that were attached to population growth in the second half of the

¹See, for example: Connelly, see n. 8; Hoff, see n. 11; Robertson, see n. 12; Phyllis Tilson Piotrow, *World Population Crisis: The United States Response* (New York: Praeger, 1973); Donald T. Critchlow, *Intended Consequences: Birth Control, Abortion, and the Federal Government in Modern America* (New York: Oxford University Press, 1999); John Sharpless, "World Population Growth, Family Planning and American Foreign Policy," *Journal of Policy History* 7 (1995): 72–102.

twentieth century were neither obvious nor unequivocal. In this chapter and in Chapter Six, I describe how two separate but intertwined overpopulation discourses — one economic and the other environmental — developed in the period between 1945 and 1974, attaching specific negative consequences to population growth. These discourses were largely produced and promoted by small groups of wealthy and influential men; my focus is on the role that demography played in formulating and supporting each discourse, and the ways in which supporting these discourses shaped the development of demography in the three decades following World War II.

This chapter focuses on the emergence of the economic discourse of overpopulation, according to which population growth in the global south was expected to prevent economic development, exacerbate poverty, and increase vulnerability to nationalist movements and communist revolutions, threatening U.S. industry's access to materials, labor, and markets and threatening the U.S. military's access to strategic base locations. The first section describes the way in which the most well-known and influential U.S. demographers at the end of World War II — Frank Notestein and Kingsley Davis, both at Princeton University's Office of Population Research (OPR) — understood global population growth in 1944 and how their explanation of it changed over the next few years as they began to receive new sources of funding for their research. I detail the transformation of interwar demographic transition theory into Cold War demographic transition theory, and explore the influences on this theoretical adaptation. The second section explores the origin of the postwar scientific consensus about the economic consequences of population growth that form the starting point for existing histories of demography and population control. In it, I focus on a 1952 meeting of scientists, businessmen, and philanthropists organized by John D. Rockefeller III and the organization that emerged from the meeting, the Population Council, which became demography's major patron in the postwar period. The third section traces the popularization of the economic discourse, arguing that demographers were both central and marginal to its construction and dissemination — central because the discourse relied for its legiti-

macy on demographic research and marginal because demographers had little control over how their research would be interpreted by demography's clients in government and inter- and non-governmental organizations. Chapter Five examines the influence of the economic overpopulation discourse on the development of demography itself during the 1960s, and Chapter Six traces the growth of the environmental overpopulation discourse in the late 1960s and early 1970s.

4.1 The Postwar Construction of Overpopulation

Although the baby boom presented new challenges to population projection, as described in Chapter Three, U.S. demographers expressed no concern that postwar fertility increases and the resulting population growth would threaten the U.S. politically, economically, or environmentally. Such mathematically-oriented demographers as Pascal Whelpton at the Scripps Foundation and Norman Ryder at OPR quickly demonstrated that, although there had been a slight rise in completed family size (the number of children a couple has when they cease childbearing), most of the postwar fertility increase had stemmed from the coincidence of late childbearing among older couples who had put it off during the Depression and early childbearing among young couples who were newly flush with wartime wages and GI-Bill mortgages, combined with the expected childbearing of couples at ages in between.² As a result, most demographers believed the rise in fertility in the U.S. would be short-lived, soon followed by a resumption of the long-term fertility decline that had characterized the first half of the century.³

Eugenically-oriented demographers, such as Clyde Kiser at the Milbank Memorial Fund, were relieved to find that the baby boom had coincided with increased use of contraception

²Pascal K. Whelpton, *Cohort Fertility: Native White Women in the U.S.* (Princeton: Princeton University Press, 1954); Norman B. Ryder, "Problems of Trend Determination During a Transition in Fertility," *The Milbank Memorial Fund Quarterly* (1956): 5–21.

³Frank W. Notestein, "The Significance of Population Trends," in *Preventive Medicine in Modern Practice*, ed. James Alexander Miller (New York: Harper and Brothers, 1942); Kingsley Davis, "Small Families are Still the Fashion: There Has Been a Big Boom in Babies in this Country — But Not in Big Families," *The New York Times*, June 11, 1954.

(families can be planned to be large as well as small), and that the number of children in planned families was directly correlated with income and education (that is, those with more income and education had more children), in contrast to the inverse correlation in the general population arising from the fact that higher income couples have higher rates of contraceptive use.⁴ Economically-minded demographers, such as Frank Notestein, promoted the still-common theory that population growth would stimulate economic growth: higher fertility would mean more consumption and more effective demand, reducing the amount of government deficit spending that economists and policy makers had by then accepted as necessary to promote economic growth.⁵ In contrast, observers without demographic training expressed concern that rising fertility in the U.S. would strain food production, crowd schools, and increase unemployment. Conservationists attributed new suburban sprawl to population growth, though the evidence suggests that the baby boom was stimulated by the ease of suburban home ownership — facilitated by government-backed mortgages and the construction of the Interstate Highway system — rather than the other way around.⁶

Demographers, particularly Frank Notestein and Kingsley Davis, were much more concerned with population growth in colonial territories throughout the global south than they were with population growth in the U.S. In colonial territories, they warned, population growth challenged subsistence resources and threatened to undermine the mortality decline that had caused this population growth in the first place. Notestein expected that, in a country like the U.S., with a well-capitalized manufacturing sector, population growth would increase effective demand, resulting in more consumption, more jobs, more profits, and even more consumption, further fueling the cycle. In the global south, however, where economies were organized around primary production for industry in North America, Europe, Oceania,

⁴Clyde V. Kiser, “Fertility Trends and Differentials in the United States,” *Journal of the American Statistical Association* 47, no. 257 (1952): 25–48.

⁵Frank W. Notestein, “As the Nation Grows Younger,” *The Atlantic*, 1957, 131–136; Keynes, see n. 123.

⁶For the attribution of suburban sprawl to population growth, see Robertson, see n. 12; for the attribution of the Baby Boom to ease of entry into homeownership, see Emily R. Merchant, Brian Gratton, and Myron P. Gutmann, “A Sudden Transition: Household Changes for Middle Aged U.S. Women in the Twentieth Century,” *Population Research and Policy Review* 31, no. 5 (2012): 703–726.

and Japan — and where markets relied on demand in those places rather than local demand — Notestein and Davis cautioned that population growth would simply swell the agricultural labor force. They warned that population growth would therefore result in lower commodity prices and more deeply-entrenched poverty, causing an increase in mortality and a return to a high-pressure demographic equilibrium (characterized by high fertility and high mortality), but this time at a higher population density, leaving more people more vulnerable to economic shocks and natural disasters.⁷ This section describes how Notestein and Davis understood population growth in the global south at the end of World War II, and how that understanding changed over the next five years. I explore the influences on this perspectival shift and argue that, as two of the most influential members of this new field, Notestein and Davis’s new perspective laid the foundation for a new Cold War version of demographic transition theory.

4.1.1 The Demographic Critique of Imperialism

Notestein and Davis first presented their concerns about population growth in colonial territories at the 1944 annual Milbank Memorial Fund roundtable on global population. Their analysis amounted to a strong indictment of imperialism and the world-capitalist system, albeit one that relied on a stadial (progressing in linear stages) view of human history and faith in a supposedly universal and inevitable modernization process that would also produce demographic transition.⁸ They argued that imperial governments, contrary to their claims of promoting development and modernization in the countries they ruled, had allowed only partial modernization, producing only partial demographic transition: mortality decline without fertility decline. They contended that the economics of imperialism were inimical to both modernization and demographic transition, reducing mortality without producing economic development, and thereby perpetuating poverty while promoting population growth.

⁷Notestein, “As the Nation Grows Younger,” see n. 5; Notestein et al., see n. 12.

⁸For analysis of the stadial view of human history in the field of demography, see Thornton, see n. 191.

Interwar Demographic Transition Theory

In 1945, Davis edited a special issue of the *Annals of the American Academy of Political and Social Science* titled “The World Demographic Transition,” in which he outlined his idealized vision of an integrated process of global modernization and demographic transition. As discussed in earlier chapters, demographic transition referred both to the observed demographic history of Western Europe and North America and to the expected demographic future of the rest of the world. During the nineteenth and early twentieth centuries, populations in Western Europe and North America had experienced a change from a high-pressure demographic equilibrium (characterized by high mortality, high fertility, and little overall growth) to a low-pressure demographic equilibrium (characterized by low mortality, low fertility, and little overall growth). In most countries (France being a notable exception), mortality decline preceded fertility decline, causing immense population growth during the transition from high-pressure to low-pressure equilibria. Demographers attributed the demographic transition to modernization: the full complex of democratization, economic development, and social transition from from “traditional” community, Ferdinand Tönnies’s *Gemeinschaft*, to “modern” society, Tönnies’s *Gesellschaft*.⁹ According to demographic transition theory, the social and economic changes that accompanied early stages of modernization, particularly sanitation and market rationalization, reduced mortality by raising living standards, eliminating diseases spread through unclean water sources, and securing adequate access to food. Later stages of modernization — particularly industrialization, urbanization, the replacement of family functions by other social institutions, mechanisms for investing savings, and the rise of professions that provided socioeconomic returns to education — led to a shift of parental investment from child quantity — having more children who could work in family-based production (whether agricultural or not) and provide for parents in old age — to child quality — having fewer children but endowing them with education and other resources that

⁹Ross, *The Origins of American Social Science*, see n. 65.

would facilitate their professional and economic success.¹⁰ Demographic transition theory held that similar declines in mortality and fertility rates would accompany the supposedly inevitable and desirable process of modernization elsewhere in the world.

Davis, a sociologist trained at Harvard in the 1930s by Talcott Parsons and Pitirim Sorokin, had theorized in 1937 that the social institution of the family, which had, prior to the rise of “modern” society in North America and Western Europe, governed biological and social reproduction and enforced norms producing high fertility (to compensate for high mortality), was incompatible with “modern European civilization.” He therefore attributed recent fertility declines in Western Europe and North America to the family’s waning relevance as a social institution.¹¹ According to Davis, “traditional” social and economic relations were organized through families, and membership in a family required the bearing and rearing of children. In urban industrial societies, by contrast, particularly those with high levels of social and geographical mobility, social and economic life no longer relied as much on family connections, and such connections, including those between parent and child, became a hindrance to socioeconomic advancement.¹² Writing in the 1930s, Davis may have been particularly influenced by the Great Depression, which indicated the inability of families to shield their members from the vicissitudes of the capitalist market economy and tore families apart as their members sought whatever jobs they could find.

When Davis joined the faculty of OPR in 1942, Notestein largely adopted his understanding of the relationship between fertility and socioeconomic structures and institutions.

¹⁰For a clear statement of this theory in Notestein’s work, see Frank W. Notestein, “Economic Problems and Population Changes,” in *The Economics of Population and Food Supply*, Eighth International Conference of Agricultural Economists (1953); economist Gary Becker introduced the language of child “quantity” and “quality” in Becker, see n. 161; demographer John Caldwell would later describe this shift in terms of wealth flows, which, in “traditional” societies, flow from child to parent (children provide labor and old-age security) and, in “modern” societies, flow from parent to child (parents provide for children while growing up; educational expectations and child labor laws prevent children from contributing to the household economy; old-age pensions and mechanisms for retirement savings reduce the need for older parents to rely on adult children) John C. Caldwell, “Toward a Restatement of Demographic Transition Theory,” *Population and Development Review* 2 (1976): 321–366.

¹¹Kingsley Davis, “Reproductive Institutions and the Pressure for Population,” *Sociological Review* (1937): 289–306.

¹²Davis, “The Shifting Balance of World Population, part I,” see n. 24; Kingsley Davis, “The Shifting Balance of World Population, part II,” *Forum*, Feb. 1946, 493–498.

Notestein and Davis, like other mid-century proponents of the emergent modernization theory, viewed modernization as a qualitative and more or less simultaneous shift in social, political, and economic organization stimulated by contact with societies that had already modernized. That is, they viewed modernization as a process of the diffusion of European social, cultural, economic, and political forms.¹³ In Davis's 1945 discussion of the "World Demographic Transition," he described colonization and economic investment by the global north in the global south as important vehicles for modernization and the attendant demographic transition, but pointed out the ways in which imperialism was falling short of this goal.

The world-capitalist system, as Notestein and Davis viewed it in 1944, had reduced mortality in parts of the global south that experienced imperialism or northern economic investment and political control as a result of the partial modernization that accompanied it: market integration, sanitation, and political stability. However, imperialism and other forms of economic investment had also prevented fertility reduction by stifling complete modernization: industry, urbanization, social mobility, and representative democracy.¹⁴ Davis acknowledged that promoting complete modernization in the global south (his article focused on Japan, where U.S. postwar plans included the encouragement of rapid re-industrialization) would also promote both population growth and an increase in economic, political, and military power. Although he acknowledged opposition in the global north to the growth of both population and geopolitical power in the global south, which he described as "appear[ing] as a Frankenstein appalling to many observers," he also argued that only complete modernization would produce global political and economic stability. Davis dismissed fears of population growth in Asia as racist, arguing that "the existing civilization of the Orient is not fixed in the genes of the Asiatic races" but is "rather a historical stage resembling

¹³Gilman, see n. 191; Latham, *Modernization as Ideology: American Social Science and "Nation Building" in the Kennedy Era*, see n. 191.

¹⁴Notestein, "Problems of Policy in Relation to Areas of Heavy Population Pressure," see n. 227; Kingsley Davis, "Demographic Fact and Policy in India," *Milbank Memorial Fund Quarterly* 22, no. 4 (1944): 256–278.

in some respects the medieval civilization of Europe,” which “will pass irretrievably as the Asiatic peoples become westernized.”¹⁵ These arguments clearly reveal the Eurocentrism of modernization and demographic transition theories. However, they also suggest a view that, if the modernization process were allowed to run its full course, the resulting population growth would not threaten denizens of the global north because it would be accompanied by the adoption of familiar ways of life and by the proliferation of technologies that would provide for a larger population at a higher standard of living. That is, it would add to the “modern” segment of the world’s population rather than competing with it, as many feared. In other words, he viewed population growth as a natural and beneficial *outcome* of modernization and argued that demographic research should focus on facilitating the transition to modernity through deconolonization.

Notestein and Davis’s critique of colonialism and of the economic domination of the global south by the global north was not that these activities stimulated population growth *per se*, but rather that they inhibited complete modernization and therefore allowed the demographic transition to stall at the transitional stage, which combined high fertility with low mortality, resulting in rapid population growth. As Notestein summarized at the 1944 Milbank Memorial Fund roundtable, mortality had declined in places that “have been developed by the technologically advanced countries primarily as sources of agricultural and mineral raw materials, often of a specialized kind, and as markets for manufactured goods” because “such development has required the introduction of strong government, improved transportation, simple sanitation, and a modicum of epidemic control.” Fertility, however, remained high because “the only societies in which low birth rates have appeared are those dominated by the values developed in modern life,” as modern “societies set great store by the individual, his health, welfare, initiative, and advancement.”¹⁶ In contrast, colonial regimes had preserved “native customs, religions, and social organization, all of which foster

¹⁵Kingsley Davis, “The World Demographic Transition,” *Annals of the American Academy of Political and Social Science* 237 (Jan. 1945): 7.

¹⁶Notestein, “Problems of Policy in Relation to Areas of Heavy Population Pressure,” see n. 227, 432.

the maintenance of high fertility.”¹⁷ Or, as Davis might have put it, colonial rule maintained a social order in which status was ascribed through familial relationships rather than attained through individual achievement. Davis also pointed to the economic basis of these social institutions, arguing that “remaining a satellite nation, . . . India has not developed a balanced economy and has consequently not achieved the internal structure that will motivate her citizens to reduce their fertility.”¹⁸ Notestein estimated that, as a result of colonial economic conditions, population had grown at an average annual rate of 1.21% per year in India, 2.08% per year in the Netherlands Indies, and 2.2% per year in the Philippines between the wars.¹⁹ In contrast, the population of the U.S. had grown at a rate of 1.0% annually between 1920 and 1939.²⁰

Decolonization and Demographic Transition

In their 1944 presentations, Notestein and Davis essentially argued that formal colonialism had already achieved what it could of its purported “civilizing mission.” They contended

¹⁷Notestein, “Problems of Policy in Relation to Areas of Heavy Population Pressure,” see n. 227, 433; Today it would be more appropriate to say that colonial regimes invented those social institutions, or that they emerged through processes of multilateral exchange in the colonial setting. See, for example Ann Laura Stoler and Frederick Cooper, “Between Metropole and Colony: Rethinking a Research Agenda,” in *Tensions of Empire: Colonial Cultures in a Bourgeois World* (1997).

¹⁸Davis, “Demographic Fact and Policy in India,” see n. 14, 269.

¹⁹Notestein, “Problems of Policy in Relation to Areas of Heavy Population Pressure,” see n. 227, 428; Notestein’s discussion of colonial population dynamics accords with more recent scholarship about the differences between colonial and metropolitan biopower and governmentality, touched on in earlier chapters. As power in Western Europe and North America decentralized, producing the self-regulating subjects of democratic nation-states who managed their own reproduction, Western European states established more absolute and centralized forms of power in their colonies, where people, their labor, and the products of their labor belonged to the sovereign, as in Europe before the nineteenth century. Reading Notestein’s mid-century work through the lens of Foucault, Hacking, and postcolonial theory indicates a strong relationship between governmentality, census-taking, and the fertility decline observed in Western Europe and North America in the nineteenth century, suggesting that the same types of governmental rationality that produce or require censuses also produce or require the type of self-governing subjects who manage their own fertility. Michel Foucault, *The History of Sexuality: An Introduction* (New York: Vintage, 1978); Hacking, “Biopower and the Avalanche of Printed Numbers,” see n. 32; Michel Foucault, “Governmentality,” in *The Foucault Effect: Studies in Governmentality*, ed. Graham Burchell, Colin Gordon, and Peter Miller (Chicago: University of Chicago Press, 1991); Annika Berg, “A Suitable Country: The Relationship Between Sweden’s Interwar Population Policy and Family Planning in Postindependence India,” *Berichte zur Wissenschaftsgeschichte* 33 (2010): 297–320; Rose, “Governing By Numbers: Figuring Out Democracy,” see n. 38; Rose, *Powers of Freedom: Reframing Political Thought*, see n. 13.

²⁰Calculated from Table Aa7 in Historical Statistics of the U.S., Millennial Edition.

that perpetuation of formal colonialism or informal economic domination in the global south would, by increasing population growth without improving living standards and by preventing the development of local industry (or dismantling existing industries), undermine the further progress of both modernization and demographic transition, with the effect of expanding and entrenching local poverty. Notestein acknowledged that population growth within the confines of formal colonialism or quasi-colonial economies posed a threat to U.S. economic and political security, but argued that population growth could not be slowed under these economic conditions. He explicitly rejected the idea of providing modern contraceptives — which, at that time, consisted of barriers (condoms, diaphragms) and spermicidal compounds (jellies, foams, and suppository tablets) — to these areas, as existing economic structures and social institutions incentivized large families. Moreover, his interwar research had demonstrated that the lack of access to contraceptive materials had not prevented fertility decline in Western Europe and North America in the context of modernization.

Demographic transition theory held that “populations whose social institutions and personal aspirations are those developed in high mortality cultures are little interested in contraception,” while “populations whose institutions and personal aspirations are those of modern individualistic cultures will control their fertility in substantial degree with or without the assistance of modern contraceptive techniques.”²¹ Notestein’s interwar research, along with that of Raymond Pearl, had demonstrated that, among the wealthier and more urbane segments of the U.S. population, prior to the widespread availability of contraceptive devices, “coitus interruptus, which is adequately described in the Old Testament, [was] used by many couples with substantial effectiveness,” and could fully account for the pre-World War II decline of fertility.²² The same was true for Western Europe. Reasoning from this experience, he contended that people everywhere already possessed the requisite knowledge and technology to have fewer children if they wanted to. However, among the rural populations of both

²¹Notestein, “Problems of Policy in Relation to Areas of Heavy Population Pressure,” see n. 227, 437.

²²Notestein, “The Significance of Population Trends,” see n. 3, 33; also see Frank W. Notestein to Alvan O. Zarate, June 6, 1967, folder 2, box 2.

global south and global north, Notestein insisted that “fertility declines will come gradually and only after the people acquire new interests and aspirations,” which “are likely to develop only in a period of rising levels of living, urbanization, widespread education, and growing contacts with foreign cultures.”²³ In the absence of those structural changes, he contended, prospective parents in rural societies would have little interest in new contraceptive technologies.²⁴

Rather than contraceptive provision, the solution Notestein proposed in his 1944 presentation was decolonization, combined with an integrated program of modernization, including industrialization, land reform, international trade, popular education, public health, social equality and integration, emigration, and the cultivation of “native political leaders, civil servants, and native middle classes.”²⁵ Notestein acknowledged that such interventions would stimulate further population growth and increase the economic, political, and military power of (former) colonial territories, but argued that “the perpetuation of past policies toward underdeveloped regions involves greater risk to the peaceful security of the American people than a policy consciously designed to create larger and more powerful populations in these areas.”²⁶ Notestein described the alternative to his program as “repression.” He argued that repression would not succeed anywhere unless it succeeded everywhere, and that “such universally successful repression is hardly to be expected in a world in which the spread of education and modern technology has gone too far to be stopped.”²⁷ Such statements, combined with Notestein’s rejection of large-scale international migration as a way to relieve population pressure in the global south on the basis that it would “vastly increase the total size of the sending stock in the world,”²⁸ indicate that his proposal for decolonization and modernization was rooted in a desire to maintain U.S. geopolitical and geoeconomic superi-

²³Notestein, “Problems of Policy in Relation to Areas of Heavy Population Pressure,” see n. 227, 438.

²⁴Notestein had made a similar argument about the rural poor in the U.S., who had some of the country’s largest families, in 1942. Notestein, “The Significance of Population Trends,” see n. 3.

²⁵Notestein, “Problems of Policy in Relation to Areas of Heavy Population Pressure,” see n. 227, 440.

²⁶Ibid., 442.

²⁷Ibid., 442.

²⁸Ibid., 435.

ority rather than a desire to promote global economic or political equality. Nonetheless, it would have opened the door for considerably greater local control of political and economic systems in the global south.

The modernization program that Notestein outlined in 1944 and Davis promoted in 1945 — a plan to overcome global poverty and disaffection through decolonization and investment in and promotion of local economies and civil societies in the global south — echoed U.S. President Roosevelt’s 1941 promise of worldwide “freedom from want” and largely anticipated Point Four of President Truman’s 1949 inauguration speech.²⁹ It also resembled autochthonous (though European-oriented) development programs planned and initiated between the wars by Mustapha Kemal Ataturk in Turkey and Sun Yat-Sen in China. This program, however, presented a threat to powerful actors on the U.S. scene, particularly those involved with or otherwise invested in industry.

4.1.2 Demography and the Philanthropic-Industrial Complex

Not coincidentally, Western Europe’s Industrial Revolution had followed its “age of exploration” and intersected with its “age of empire,” promoting the centrally-controlled extractive form of colonialism that came to characterize the British Colonial Empire (that is, the British Empire minus the “white dominions” — Canada, Australia, New Zealand, and South Africa) after the upheavals of the mid-nineteenth century, including the 1857 Rebellion in India and the 1865 Morant Bay Uprising in Jamaica.³⁰ Industrial production required the steady flow of raw materials, many of which — for example, rubber, jute, tin, and cotton — could be found only in tropical and sub-tropical climates and not in the northern centers of industry. Europe’s industries solved this problem largely through formal colonialism, with European states protecting the access of European industries to materials, labor, and markets in Africa and Asia. In contrast, U.S. industry relied on “dollar diplomacy,” an approach

²⁹Michael E. Latham, *The Right Kind of Revolution: Modernization, Development, and U.S. Foreign Policy from the Cold War to the Present* (Ithaca: Cornell University Press, 2011), 25, 10-11.

³⁰Eric Hobsbawm, *The Age of Empire: 1875-1914* (Weidenfeld & Nicolson, 1987).

devised by U.S. Presidents Theodore Roosevelt and William Howard Taft, in which U.S. banks leveraged the sovereign debt of countries in Latin America and East Asia (as well as Liberia) to ensure political and economic policies favorable to U.S. economic and national interests. This strategy arose out of competition with European imperial economies and aimed to keep European interests out of the Western Hemisphere.³¹ Under dollar diplomacy, U.S. corporations purchased large tracts of land in Latin America, such as Henry Ford's rubber plantations in Brazil and United Fruit's banana plantations throughout Central America and the Caribbean, allowing for vertical integration of manufacturing, which both boosted industrial profits and insulated U.S. industry from the disruption threatened by wars and business cycles.³² During World War II, the vertical integration of the auto industry allowed for its rapid transition to the production of armaments and ensured continued supplies of tropical raw materials despite global economic and political upheaval.³³

U.S. Industry and European Empires

After the two World Wars, the European imperial system no longer seemed sustainable to the architects of U.S. foreign policy, who instead envisioned an empire of free trade without formal colonialism, similar to dollar diplomacy but on a worldwide scale.³⁴ The 1944 Bretton Woods meetings established the International Monetary Fund (IMF), which

³¹Latham, *The Right Kind of Revolution: Modernization, Development, and U.S. Foreign Policy from the Cold War to the Present*, see n. 29, 17.

³²For Ford's rubber plantations, see Ralf Barkemeyer and Frank Frigge, "Fordlandia: Corporate Citizenship or Corporate Colonialism?" *Corporate Social Responsibility and Environmental Management* 19 (2012): 69–78; for United Fruit, see Peter Chapman, *Bananas: How the United Fruit Company Shaped the World* (Canongate, 2007).

³³Barkemeyer and Frigge, see n. 32; Gerald Davis, *Managed By the Markets: How Finance Re-Shaped America* (New York: Cambridge University Press, 2009); A 1969 study of vertical integration of U.S. manufacturing over the previous half-century found that backwards integration (integrating the extraction and processing of raw materials, in contrast to forward integration, which integrates distribution and sales) was most prevalent in firms relying on overseas materials. Harold C. Livesay and Patrick G. Porter, "Vertical Integration in American Manufacturing, 1899-1948," *The Journal of Economic History* 29, no. 3 (1969): 494–500.

³⁴Richard H. Immerman, *Empire For Liberty: A History of American Imperialism from Benjamin Franklin to Paul Wolfowitz* (Princeton: Princeton University Press, 2010); Julian Go, "Entangle Empires and Informal Imperialism: The Rise of the US in the Mid-Twentieth Century" (n.d.), URL: http://www.upf.edu/iuhjvv/_pdf/jgo-empires.pdf (accessed 06/15/2014); Latham, *The Right Kind of Revolution: Modernization, Development, and U.S. Foreign Policy from the Cold War to the Present*, see n. 29.

managed fixed exchange rates for global currencies based on the gold-backed U.S. dollar, and the International Bank for Reconstruction and Development (World Bank), which aimed to finance reconstruction in Europe and Japan and the economic development of the global south. The reconstruction of industry in Western Europe and Japan were key aims of U.S. foreign policy, with economic growth produced by private industry expected to provide a bulwark against the spread of communism. To support this reconstruction, the U.S. provided direct grants to Europe and Asia under the Marshall Plan, much of which was used to convert energy systems in Europe from coal to oil, thereby creating new markets for the U.S. oil industry, which played a pivotal role in keeping dollars circulating through the global economy.³⁵

Rebuilding and expanding industry in Western Europe and Japan, however, required steady access to colonial materials, labor, and markets. In the immediate postwar period, therefore, despite the anticolonial rhetoric of the 1941 Atlantic Charter, U.S. policymakers supported the maintenance of European empires. In return for this support, European imperial powers granted U.S. corporations preferential access to colonial materials and markets and allowed the U.S. military to install bases in strategic locations.³⁶ U.S. manufacturers purchased raw materials from European colonies, colonies used the dollars they acquired through this trade to purchase manufactured products from Europe and Japan, giving these countries the dollars they needed to buy oil and repay wartime debts to the U.S. The U.S. government, in turn, used this income to pay private companies to build infrastructure in the U.S. — such as airports and the Interstate Highway system — and to fill contracts for the military equipment necessitated by the new competition with the U.S.S.R. for global hegemony. Protected access to raw materials in the global south both increased industrial profits and ensured uninterrupted production of the military equipment the U.S. ultimately relied upon to enforce policies in other countries favorable to the U.S. military-industrial complex.

³⁵Mitchell, *Carbon Democracy: Political Power in the Age of Oil*, see n. 90, 29-30.

³⁶Go, see n. 34.

Official U.S. support for the maintenance of European empires did not last much beyond the end of the 1940s.³⁷ Anticolonial nationalist movements throughout Asia and Africa had grown in power during the first half of the twentieth century, and the new United Nations nominally recognized self-determination as a universal right. After World War II, the U.S.S.R. began to offer economic and military support to nationalist movements throughout the world, not only threatening Europe with the loss of direct political control of its colonies but also threatening the preferential access of the U.S. military-industrial complex to materials and strategic outposts. President Truman's Point Four program indicated a shift in U.S. foreign policy from support for continued European imperial control of Asia and Africa to support for decolonization and modernization. However, the development programs promoted by the U.S. and by such international agencies as the World Bank and IMF were very different from those proposed by Notestein and Davis in 1944–1945. As had become apparent in Mexico at the beginning of the century, in Turkey between the world wars, and in Iran in 1951, modernization did not necessarily need to occur in ways that would benefit North American, European, and Japanese industry; it could also involve nationalization of natural resources, expropriation of foreign-owned land, and state ownership of industry and transportation. The experience of the two global conflagrations during the first half of the century suggested to scientists and policy makers that population growth would increase both the desire for local control over the extraction and distribution of resources and the physical and military power necessary to exert such control.³⁸

In 1944–1945, Notestein and Davis had proposed a program of modernization that involved decolonization and local control over natural resources and infrastructure. Over the next four years, however, they separately abandoned this anticolonial stance, adapting demographic transition theory in subtle but powerful ways that opened space for population

³⁷Go, see n. 34; Latham, *The Right Kind of Revolution: Modernization, Development, and U.S. Foreign Policy from the Cold War to the Present*, see n. 29.

³⁸Prior to and during World War II, for example, aggressor nations had pointed to growing populations to demand access to more territory and had used population growth as a strategy for seizing control over new territory. Thompson, *Danger Spots in World Population*, see n. 196; Bashford, see n. 10.

control — the “repressive” strategy that Notestein had rejected in 1944 — in U.S.-led decolonization and modernization programs in the global south.

The Cold War Adaptation of Demographic Transition Theory

Notestein presented his new take on colonial population growth at the 1947 Milbank Memorial Fund roundtable on global population.³⁹ While he still attributed population growth in colonial territories to the mortality reductions resulting from imperial rule, he now attributed poverty in the global south not to economic exploitation, but rather to population growth. In his earlier explanation, colonial and quasi-colonial economic relationships between countries in the global north and those in the global south produced poverty by preventing the structural changes — industrialization, urbanization, and the establishment of financial infrastructure — that would have promoted both equitable economic growth and lower fertility. In his 1947 explanation, *population growth* produced poverty and prevented the structural changes that would have promoted economic development while reducing fertility. This seemingly slight theoretical adaptation naturalized poverty as the result of a biological process — population growth — eliding the social, economic, and political factors that, in his earlier analysis, underpinned both poverty and population growth.

In contrast to his 1944 proposal for structural changes that would have alleviated poverty and accommodated population growth — though at the potential cost of undermining U.S. access to colonial materials, labor and markets and to strategic locations for military bases — in 1947 Notestein proposed a solution that did not threaten the existing geopolitical and geoeconomic order: the provision of contraceptive technologies so easy to use that they would be widely adopted even in agrarian societies, where children were still economic assets and the best bet for old-age security. That is, between 1944 and 1947, Notestein redefined population growth from an economic problem with a political and economic solution to a biological problem with a bio-technological solution, albeit one that did not yet exist; in

³⁹Published as Frank W. Notestein, “Summary of the Demographic Background of Problems of Undeveloped Areas,” *Milbank Memorial Fund Quarterly* 26, no. 3 (1948): 249–255.

1947, as in 1944, available contraceptive techniques were still limited to abstinence, withdrawal, and the more cumbersome technologies of barriers and spermicidal compounds. Yet, in contrast to his 1944 argument that contraceptives would be ineffective without the socioeconomic structures and institutions that motivated their use, in 1947 Notestein argued that population growth prevented the socioeconomic changes that he advocated in 1944 and contended that the adoption of contraceptives in the global south was a prerequisite for economic growth. This argument reversed the relationship between socioeconomic individuation and fertility decline at the heart of demographic transition theory. In Notestein's 1944 version of the theory, socioeconomic structures and institutions that privileged the individual over the family — as had emerged in Western Europe and North America over the previous 150 years in tandem with industrialization, urbanization, and professionalization — triggered demographic transition; in the 1947 version, demographic transition triggered economic development and consequent changes in socioeconomic structures and institutions.

Historically-oriented demographers such as Dennis Hodgson and Simon Szreter have noted the shift in Notestein and Davis's conceptualization of the relationship between demographic transition and socioeconomic individuation, and have attributed this theoretical adaptation to causes both internal and external to demography.⁴⁰ Hodgson and Szreter describe this theoretical adaptation as a gradual evolution, occurring between 1945 and 1955 in response to various challenges posed to classic demographic transition theory: Notestein's 1948 tour of East Asia with Rockefeller Foundation officers Marshall Balfour and Roger Evans, China's 1949 communist revolution, and economic and demographic studies of the 1950s and 1960s (described in detail below) that challenged the causal relationship between socioeconomic transformation and fertility decline. John Sharpless adds to this list demographers' desire to help solve the postwar crisis of impending overpopulation.⁴¹ Comparison of

⁴⁰Hodgson includes empirical research in the internal category and the Cold War and foundation support for family planning in the external category. Hodgson, "Orthodoxy and Revisionism in American Demography," see n. 20; Szreter, "The Idea of Demographic Transition and the Study of Fertility Change: A Critical Intellectual History," see n. 20.

⁴¹Sharpless, see n. 1.

Notestein's 1944 and 1947 Milbank presentations, however, suggests that his adaptation of demographic theory occurred much earlier and more decisively than other scholars have suggested, prior to most of the causes Hodgson and Szreter cite, preceded only by the beginning of the Cold War and by Rockefeller investment in his research. I argue that this theoretical adaptation was not a response to the postwar crisis of impending overpopulation, as Sharpless has suggested. Rather, I contend that it helped to produce the crisis demographers later worked to solve.

Philanthropy and Demography

The Rockefeller Foundation made its first grants to academic research in demography in 1944, allocating just over \$17,000 to the Scripps Foundation for a study “of the influence of population factors upon labor market problems” and \$200,000 to OPR to cover its research and training program over the next ten years.⁴² This funding dwarfed the support OPR received from the Milbank Memorial Fund (\$10,000 per year) and was supplemented by additional Rockefeller Foundation grants for specific projects. As discussed in Chapter Two, private foundations were the largest funders of the social sciences prior to World War II. The foundations with the largest investments in this field in the first half of the century were the Russell Sage Foundation, established in 1907 by Margaret Olivia Slocum Sage, who had inherited the banking and railroad wealth of her husband Russell; the Carnegie Corporation, established by steel magnate Andrew Carnegie in 1911; and the Rockefeller Foundation, established by John D. Rockefeller, creator of Standard Oil, and his only son, John D. Jr., in 1913.⁴³ Henry Ford created the Ford Foundation in 1936, which also began

⁴²“The Rockefeller Foundation: Annual Report,” 1944, URL: <http://www.rockefellerfoundation.org/uploads/files/d336704a-253d-45da-8572-5c98bcd65801-1944.pdf> (accessed 06/21/2014), URL: <http://www.rockefellerfoundation.org/uploads/files/d336704a-253d-45da-8572-5c98bcd65801-1944.pdf> (accessed 06/21/2014), 187-189.

⁴³For the Russell Sage Foundation, see O'Connor, *Social Science for What? Philanthropy and the Social Question in a World Turned Rightside Up*, see n. 72; for the Carnegie Corporation, see Lagemann, see n. 72; for the Rockefeller Foundation and its related organizations, see Martin Bulmer and Joan Bulmer, “Philanthropy and Social Science in the 1920s: Beardsley Ruml and the Laura Spelman Rockefeller Memorial, 1922-1929,” *Minerva* 19, no. 3 (1981): 347-407.

funding the social sciences after World War II.⁴⁴ These organizations were among the first general-purpose foundations in the United States, established with the aim of improving human well-being worldwide. Funded by industrial profits, they sought to apply corporate organizational principles to the amelioration of poverty both in the U.S. and abroad.⁴⁵

Though the initial motivation for their establishment may have been Christian charity or *noblesse oblige*, general-purpose foundations created from industrial wealth also served the industries that endowed them. The ratification of the Sixteenth Amendment to the U.S. Constitution in 1913, which gave the federal government the power to tax the income of individuals and corporations, was quickly followed by the establishment of the charitable exemption to individual and corporate income tax, turning philanthropy into a method of reducing both individual and corporate tax burdens, though such burdens remained miniscule until the passage of the 1935 Tax Act.⁴⁶ Withholding this revenue from the government reduced the state's power to regulate industry and ameliorate industrial poverty and allowed industrialists to direct welfare to the areas that suited their interests without democratic oversight. The work of many industrially-funded philanthropic organizations aimed to alleviate some of the poverty and suffering that had accompanied industrialization and urbanization, thereby relieving some of the labor-related political tensions that, in the first decades of the twentieth century, large employers feared would lead to stricter government regulation of industry and the development of welfare state provisions similar to those appearing in Europe.⁴⁷ These organizations portrayed themselves as helping those too weak to thrive under free-market capitalism, thereby attributing poverty to individual failure rather than systemic inequality.⁴⁸ Endowed with stock in their parent corporations (Standard Oil, Ford Motor Company, etc.), foundation budgets throughout much of the twentieth century de-

⁴⁴Dwight MacDonald, *The Ford Foundation: The Men and the Millions* (New Brunswick: Transaction, 2011 [1955]).

⁴⁵Zunz, see n. 72; Sealander, see n. 72; Rodgers, see n. 64.

⁴⁶Sealander, see n. 72; Zunz, see n. 72.

⁴⁷Andrea Tone, *The Business of Benevolence: Industrial Paternalism in Progressive America* (Ithaca: Cornell University Press, 1997).

⁴⁸Robin W. Winks, *Laurance S. Rockefeller: Catalyst for Conservation* (Washington, D.C.: Island Press, 1997), 8.

pended on rising industrial profits and stock values, incentivizing activities that ameliorated poverty without undercutting corporate revenues.

Funding scientific and social scientific research gave general-purpose foundations control not only over how poverty would be alleviated but also over how its causes would be understood.⁴⁹ Making grants for research always involves validating certain programs and the worldviews they reflect in preference to others.⁵⁰ Knowledge of poverty and other social issues produced by the social sciences also influenced policy interventions.⁵¹ The National Academy of Sciences (NAS) and its National Research Council (NRC), private organizations that provide research services to the federal government to guide policy, owe their prominence and even their continued existence to generous funding from the Carnegie Corporation and Rockefeller Foundation throughout the twentieth century, and these funders in turn influenced the staffing of NAS/NRC panels and committees and the issues they studied.⁵² As Ellen Condliffe Lagemann has written of the Carnegie Corporation, the “self-imposed mandate to define, develop, and distribute knowledge was, in a sense, a franchise to govern, in important indirect ways.”⁵³

As industrial philanthropy expanded over the first decades of the twentieth century, the powerful men who ran the country’s largest industrial corporations also sat on the boards of directors of the largest philanthropies, and these philanthropic directorates interlocked tightly with one another and with those of the corporations that funded them. Although their day-to-day operations were overseen and executed by a new professional group of nonprofit managers and administrators, their directors and trustees came from some of the country’s wealthiest and most powerful families, the members of which rotated through the worlds of business, government, and philanthropy. John Davison Rockefeller, for example, had

⁴⁹O’Connor, *Social Science for What? Philanthropy and the Social Question in a World Turned Rightside Up*, see n. 72; Fisher, see n. 72.

⁵⁰Lagemann, see n. 72, 30-31.

⁵¹Winks, see n. 48, 8; Sealander, see n. 72.

⁵²Lagemann, see n. 72.

⁵³Lagemann, see n. 72, 6; Sealander also discusses the policy role played by private philanthropic foundations in the first decades of the twentieth century. Sealander, see n. 72.

established Standard Oil in 1870 and the Rockefeller Foundation in 1913, with several other philanthropic ventures in between, including the University of Chicago, which he founded in 1890. His only son, John D. Jr., born in 1874, inherited the directorship of both Standard Oil and the Rockefeller Foundation. He also funded philanthropic ventures in birth control and conservation, which will become relevant later in the story. His six children well illustrate the tight familial and professional relationships between industry, philanthropy, and government in the twentieth-century United States. His daughter Abby and eldest son John D. III became philanthropists, with John D. III becoming chairman of the Rockefeller Foundation in 1952. Laurance and David went into business; Laurance became a venture capitalist and David a banker. Both also pursued philanthropy, with Laurance playing a major role in conservation groups. Nelson and Winthrop became state governors, and Nelson served as Vice President of the U.S. under Gerald Ford.⁵⁴ Lewis Strauss, financial advisor to several members of the Rockefeller family, was a partner in the investment bank Kuhn, Loeb & Company and one of the first commissioners of the U.S. Atomic Energy Commission, established by President Truman in 1947.⁵⁵ John Foster Dulles, international lawyer and financier between the wars (clients included J.P. Morgan & Company, United Railways of Central America, and United Fruit), served as chairman of the Rockefeller Foundation from 1935 to 1952, before becoming President Eisenhower's Secretary of State in 1953. His brother Allen became director of the CIA in the same year, and together they helped build the U.S. postwar anticolonial empire.⁵⁶

The Cold War version of demographic transition theory emerged shortly after the Rockefeller Foundation's first grant to OPR. This grant was, by no means, the only factor contributing to the theoretical adaptation, but it may have played a role. Between 1945 and 1947, no new empirical evidence had emerged regarding the relationship between population growth and economic development, suggesting that the Rockefeller grant — along with the Cold War

⁵⁴John Ensor Harr and Peter J. Johnson, *The Rockefeller Conscience: An American Family in Public and in Private* (New York: Scribner, 1991).

⁵⁵Richard Pfau, *No Sacrifice Too Great: The Life of Lewis L. Strauss* (Charlottesville: University Press of Virginia, 1984).

⁵⁶Immerman, see n. 34.

itself — may have helped to precipitate this theoretical adaptation. When the Foundation made its first grant to OPR, it established a long-term relationship in which the Foundation not only became OPR’s main patron but also became a client and, as such, reserved the right to offer advice and direction to OPR in work that might inform the Foundation’s operations.⁵⁷ The Foundation, through the NRC’s Committee on Research on Problems of Sex, had already invested heavily in the development of contraceptive technologies suitable for use in the global south (including systemic methods and spermicidal compounds that were stable at high temperatures), and the Cold War version of demographic transition theory supported the spread of these technologies as a way to stimulate economic development, whereas the interwar version had not. In 1948, John D. Rockefeller III organized a tour of East Asia for Frank Notestein and Irene Taeuber so that they could witness firsthand the population growth Rockefeller feared would undermine his family’s philanthropic efforts in the region.⁵⁸

This new version of demographic transition theory was more compatible with modernization theory than the interwar version had been, as it placed demographic transition on an equal plane with political democratization, economic development, and the emergence of civil society, positing that any one could trigger the other three. Whereas interwar demographic transition theory had understood demographic transition as a response to political, social, and economic modernization, the Cold War version saw demographic transition as a potential stimulus to political, social, and economic modernization. In a sense, we might say that the theoretical adaptation of demographic transition theory “modernized” it, as it made demographic transition a tool of modernization. If demographic transition were simply a response to modernization, the field of demography had no role in the Cold War U.S. project of promoting capitalist modernization in the global south to secure U.S. global

⁵⁷Willits, see n. 59; Frank W. Notestein to Joe Willits, Dec. 12, 1944, box A82, series 200s, record group 1.1.

⁵⁸This trip, reminiscent of Scripps and Thompson’s 1922 tour of East Asia, resulted in the publication of Marshall C. Balfour, *Public Health and Demography in the Far East: Report of a Survey Trip, September 13 - December 13, 1948* (New York: Rockefeller Foundation, 1950).

hegemony. If, however, demographic transition could be engineered, and if engineering demographic transition could stimulate modernization, then demography had a fundamental role in the Cold War modernization project.⁵⁹

Tellingly, Kingsley Davis, who left OPR in 1948 for Columbia University, never accepted the contention that modern contraceptives could reduce fertility in the global south in the absence of structural change. He continued to focus on structural factors in his explanations of population growth and in his recommended solutions.⁶⁰ Yet a new concern also emerged in Davis's work, reflecting his new sources of funding. By the end of the decade, Davis had begun to warn about the environmental consequences of population growth, echoing the arguments of two prominent and highly influential books published in 1948: *Road to Survival* by William Vogt, an ornithologist and chief conservator of the Pan-American Union, and *Our Plundered Planet* by Fairfield Osborn, Frederick Osborn's cousin, director of the Bronx Zoo, and son of Henry Fairfield Osborn, former president of the American Museum of Natural History and a founding member of the American Eugenics Society.

Vogt and Osborn's books picked up on the theme of population and carrying capacity that Raymond Pearl and Edward East had engaged with between the wars, as discussed in Chapter One, but added a new twist: according to Osborn and Vogt, not only was the Earth's capacity to support life limited, but attempts to stretch subsistence beyond this fixed carrying capacity would actually reduce future carrying capacity by degrading the ecosystems on which human life depended.⁶¹ In essence, Vogt and Osborn added the idea of sustainability — the ability to support human life in the long term — to Pearl and East's concept of carrying capacity.

The Osborn cousins, Fairfield and Frederick, had been frequent guests in the home of John

⁵⁹Sharpless, see n. 1.

⁶⁰See, for example: Kingsley Davis, "Population and Change in Backward Areas," *Columbia Journal of International Affairs* 4, no. 2 (1950): 43–49; Kingsley Davis and Judith Blake, "Social Structure and Fertility: An Analytic Framework," *Economic Development and Cultural Change* (1956): 211–235.

⁶¹While some historians have viewed these books as signaling the transition from interwar conservationism to postwar environmentalism, others have emphasized continuities between these works and the interwar ecological visions of such scientists as H.G. Wells and Julian Huxley. For rupture, see Robertson, see n. 12, 37; for continuity, see Bashford, see n. 10.

D. Rockefeller Jr. while the third generation of Rockefellers — Abby, John D. III, Nelson, Winthrop, Laurance, and David — were growing up. The Osborns piqued the interest of John D. III in world population growth and Laurance in conservation. Laurance, born in 1910, became a member of the board of Fairfield Osborn’s New York Zoological Society in 1935. He served as environmental advisor to every president from Dwight D. Eisenhower to George W. Bush.⁶² In 1948, Fairfield Osborn and Laurance Rockefeller established the Conservation Foundation, an organization dedicated to preserving the environment through limiting population growth.⁶³

The Conservation Foundation promoted Osborn’s view that global population control was necessary to protect the Earth’s ecosystem and funded Davis’s research beginning in 1948, when he left OPR to join the Department of Sociology at Columbia University.⁶⁴ Over the next decade, the Conservation Foundation would also support the research of Davis’s most prominent students, including Judith Blake and Joe Mayone Stycos. This new source of funding became apparent almost immediately in Davis’s publications, which began to echo Osborn and Vogt’s arguments — previously dismissed as “alarmist propaganda” by several members of the PAA — that efforts to increase food production and expand economies to keep up with rising population would deplete resources, break the ecosystem, and reduce the planet’s long-term carrying capacity.⁶⁵ While Davis continued to focus on structural determinants of fertility, his research never examined the structural determinants of environmental degradation, instead tacitly assuming a linear relationship between population growth on the one side and pollution and resource depletion on the other, promoting the

⁶²Laurance died in 2004 at age 94 Michael T. Kaufman, “Laurance S. Rockefeller, Passionate Conservationist and Investor, Is Dead at 94,” *The New York Times*, July 12, 2004; in 1991, he received the Congressional Gold Medal for this conservation efforts Winks, see n. 48, 1-2.

⁶³For more detailed discussion of the relationship between Osborn and Rockefeller, see Winks, see n. 48, 41-42.

⁶⁴Donald H. McLean Jr. to Lewis L. Strauss, Apr. 3, 1952, John D. Rockefeller III Papers, Rockefeller Archive Center, Sleepy Hollow, NY, folder 674, box 81, sub-series 5, series 1, record group 5.

⁶⁵See, for example, Kingsley Davis, “Population and Resources in the Americas,” in *Proceedings*, Inter-American Conference on Conservation of Renewable Natural Resources, Denver, by the United States Department of State (1948); for an example of demographers’ views of Vogt and Osborn’s work, see n. 118, 31.

view that environmental degradation was an inevitable byproduct of population increase and economic growth. Beginning in the 1950s, he regularly published articles about population and the environment in *The New York Times*, warning that population growth — in both the U.S. and abroad — threatened supplies of natural resources. In 1955, Davis co-authored two articles with Fairfield Osborn in *The Wall Street Journal*. The first, titled “Food and People: U.S. Farm Surpluses are No Answer to the World’s Food Shortages,” provided a Malthusian response to the popular contention that U.S. farm surpluses should be transferred to countries facing a food production deficit, arguing that such provision would only promote further population growth. Osborn and Davis attributed food deficits to population growth (rather than to issues of land allocation or food distribution) and argued that, “if people in such countries are relieved from the consequences of their irresponsibility, there is little reason to anticipate they would change their social and family habits regarding child-bearing.”⁶⁶ The second article, “Space and People: Migration to U.S. Cannot Relieve World’s Overcrowding,” argued against allowing more immigrants into the U.S. as a tactic to relieve population pressure on food supplies in the global south, contending that such a “tidal wave” of immigration would be impossible to assimilate and would overwhelm U.S. resources while promoting continued high fertility in the sending countries.⁶⁷ Together, these articles signal Davis’s adoption of the view that population growth caused global poverty, and that only direct methods of population control could provide a sustainable solution.

In both Notestein and Davis’s post-1945 writings, the causal relationship between population growth on the one hand and poverty and pollution on the other was the starting point for analysis, not its result. Neither demographer examined the alleged connections between population growth, poverty, and pollution, and neither presented empirical evidence to support the purported relationship. Instead, with support from their new funders, Notestein and Davis turned from examining the causes of poverty and considering how resources could

⁶⁶Fairfield Osborn and Kingsley Davis, “Food and People: U.S. Farm Surpluses are No Answer to the World’s Food Shortages,” *The Wall Street Journal*, Apr. 7, 1955.

⁶⁷Fairfield Osborn and Kingsley Davis, “Space and People: Migration to U.S. Cannot Relieve World’s Overcrowding,” *The Wall Street Journal*, Apr. 8, 1955.

be developed to meet the needs of growing populations to assessing how population growth could be reduced in poor agrarian societies.

In addition to modernization theory and new sources of funding for their work, the Cold War itself and the chilling effect it had on intellectual freedom also seems to have influenced demography's mid-century theoretical adaptation. Given the political context in which they were working, a sustained critique of global capitalism and economic imperialism from within U.S. institutions was likely impossible. With the onset of the Cold War, any hint of such critique came under investigation by the House Un-American Activities Committee (HUAC), which had the potential to destroy careers. Demographers, perhaps because of their enthusiasm for and involvement in the New Deal during the 1930s, came under particular suspicion at the beginning of the Cold War. Stories of investigations or delays in acquiring security clearance for government jobs appear frequently in the interviews of the PAA Oral History Project. Most notably, Chicago demographer Philip Hauser was investigated by HUAC while serving as the U.S. delegate to the U.N. Population Commission in 1950, and Hope Eldridge was removed by the U.S. government from her position the U.N.'s Food and Agriculture Organization (FAO) in the early 1950s for having supported Henry Wallace's 1948 presidential campaign.⁶⁸ When Conrad Taeuber was offered a job at the Census Bureau in 1951, his FBI security clearance took a particularly long time, which he later discovered was a result of the *American Sociological Review* having published a special issue on the U.S.S.R. during World War II, when Taeuber was managing editor of the journal.⁶⁹ Twentieth century demographers were well aware of Marx and Engels's nineteenth-century critiques of Malthusian theory, described in Chapter One, and understood that adherence to the Malthusian relationship between population growth and poverty was necessary to avoid suspicion of communist sympathy during the postwar period.⁷⁰

⁶⁸Hauser had also been a policy advisor to Wallace when Wallace was Secretary of Commerce. For information about Hauser's investigation, see: Philip M. Hauser to Frank W. Notestein, Apr. 11, 1950, folder 5, box 13; Frank W. Notestein, Apr. 15, 1950, folder 5, box 13; for Eldridge's story, see, see n. 116, 93-94; Margaret Hagood and Henry Shryock Jr. were also investigated by HUAC in the 1950s, see n. 116, 94.

⁶⁹See n. 118, 27.

⁷⁰Notestein demonstrated this understanding in his response to Hauser's investigation. Notestein, Apr. 15,

Notestein and Davis's late-1940s scholarship, influenced by the Cold War, by modernization theory, by new patrons and clients, and by the crisis of demographic authority described in Chapter Three, formed the scientific basis for the two distinct but intertwined discourses of overpopulation that emerged and gained enormous popular and political traction between 1945 and 1975, one economic and the other environmental. Each discourse had powerful and wealthy supporters. In many cases, the supporters were the same. For example, the Rockefeller brothers, the Osborn cousins, and the Ford Foundation (beginning in the 1950s) all funded scientific research, publicity, and the establishment of organizations to promote both economic and environmental understandings of population growth as a problem and for particular population control solutions (discussed in this and the following chapters). These interests also lobbied governments and intergovernmental organizations around the world for recognition of the population problems they championed and for financial and policy support for the solutions they proposed.

Both discourses drew on the Malthusian attribution of poverty, famine, and strife to the pressure of population on resources, and both discourses grew out of the interwar perception of differential population growth as a threat to the global political order. Proponents of each discourse frequently pointed to the other as further evidence of the malevolent effects of population growth. The two discourses differed, however, in their geographical emphasis — with the economic discourse placing greater weight on population growth in the global south and the environmental discourse placing greater weight on population growth in the global north — in the urgency they accorded the problem — with proponents of the environmental discourse speaking of population growth in nearly apocalyptic terms — and in the solutions they proposed — with proponents of the economic discourse promoting solutions based in the free market and individual autonomy and proponents of the environmental discourse promoting solutions based in regulation and legal compulsion.⁷¹ The following section de-

1950, see n. 68.

⁷¹Rockefeller Foundation, “Memorandum - The Population Problem: A Tentative Analysis,” Feb. 1, 1952, folder 667, box 80, sub-series 5, series 1, record group 5.

scribes the economic discourse, the individuals and organizations that supported it, and the forms of scholarship, intervention, and public policy to which it gave rise. I will return to the environmental discourse in Chapter Six.

4.2 The Economic Discourse of Overpopulation

Between the 1950s and the 1970s, the idea that population growth presented a barrier to economic development became so widely accepted as to seem “too obvious and straightforward to question,” as Timothy Mitchell has argued in his critique of the trope of overpopulation in the development literature on Egypt.⁷² This trope certainly had roots in the Malthusian attribution of poverty to the more rapid growth of population than agricultural produce, but also relied on the new concepts of “the economy” and “economic development” that emerged in the 1930s and 1940s. As discussed in Chapter Three, during the 1930s, the new practice of national income accounting contributed to the understanding of national economies as objects coterminous with states and populations, the size of which could be measured through the gross national product (GNP).⁷³ Economists and policy makers viewed GNP per capita as a measure of the well-being of a country’s citizens or subjects, and the stimulation of growth in per capita GNP a duty of governments. Population played a very important role in this equation. It represented both the people whose well-being was supposedly reflected in per capita GNP and the denominator of the calculation. In a very simplistic Malthusian sense, fewer people meant a smaller denominator and therefore a higher GNP per capita. Moreover, in order for per capita GNP to continue growing as population expanded — the sign of successful economic development and an assumed prerequisite of modernization — aggregate GNP had to grow more rapidly than population. The role of population in the calculation of GNP per capita cast doubt on previous understandings of population growth as a driver of economic dynamism, discussed in Chapters One and Two. This section examines

⁷²Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity*, see n. 5, 210.

⁷³Mitchell, *Carbon Democracy: Political Power in the Age of Oil*, see n. 90.

exactly how the common-sense understanding of population growth as a barrier to economic development in the global south emerged and gained support from the field of demography.

4.2.1 Planning Population Control at Colonial Williamsburg

By the time John D. Rockefeller III took over the chairmanship of the Rockefeller Foundation in 1952, he had become concerned that population growth in the global south would undermine his family's philanthropic efforts and the geopolitical and geoeconomic hegemony of the United States. Rockefeller had long supported the legalization and spread of birth control, having told his father as early as 1934 that he wanted to focus his philanthropic efforts in that area.⁷⁴ The Rockefeller Foundation had already devoted substantial resources to increasing the world's agricultural production — leading to the technological developments now known as the Green Revolution — but had not systematically investigated the possibility of population control, though it had contributed to contraceptive and eugenic research in the U.S. and the U.K. Leland DeVinney, head of the Rockefeller Foundation's social science division, had advised Rockefeller that “a private individual willing to do so can make an especially useful contribution” to the “limitation of population growth.” He warned, however, as birth control was still highly controversial in the U.S., that such efforts would encounter resistance and that “public discussion of the matter or attempts to formulate over-all general programs for wide adoption lead inescapably to bitter controversy and are not likely to be very effective.”⁷⁵ Rockefeller's financial advisor, Lewis Strauss, suggested that Rockefeller hold a small meeting of experts to explore the possibility of population control behind closed doors.

The meeting took place over three days in June 1952, at the Rockefeller-owned Colonial Williamsburg Inn under the auspices of the National Academy of Sciences (NAS). NAS

⁷⁴Rockefeller, John D. III, “Population Growth: The Role of the Developed World,” *Population and Development Review* 4, no. 3 (1978): 509–516.

⁷⁵Leland C. DeVinney, “Memorandum - Luncheon Conference with JDR III on February 13, 1952,” Feb. 15, 1952, folder 674, box 81, sub-series 5, series 1, record group 5.

president Detlev Bronk, who was soon to become the president of the Rockefeller Institute for Medical Research, chaired the meeting, which was paid for by the NAS through a direct grant from Rockefeller. Participants included Rockefeller associates and Foundation officers; natural scientists, including embryologist George Corner and Planned Parenthood Federation of America (PPFA) research director Paul Henshaw; University of Chicago economist Theodore Schultz, who had begun to establish the new field of development economics; Frederick and Fairfield Osborn; William Vogt, who was then national director of PPFA; and demographers Frank Notestein, Irene Taeuber, Dorothy Thomas, Lowell Reed, John Hajnal, Kingsley Davis, Warren Thompson, and Pascal Whelpon, who was then director of the U.N. Population Division.⁷⁶ Although the discussion focused mostly on population growth in the global south, all participants were Americans, with the exception of British demographer John Hajnal, who was then a research associate at OPR. Irene Taeuber and Dorothy Thomas were the only women present.

Despite the meeting's sponsorship by the NAS and the participation of well-known scientists, the meeting did not reflect general scientific concern about world population growth.⁷⁷ Other than in the nascent field of demography, scientists had shown little interest in world population growth and even less interest in controlling it. Those who were concerned with potential imbalances between population and resources caused by rapidly-declining mortality in the global south, such as economist Theodore Schultz and mathematician Warren Weaver (Weaver directed the natural sciences division of the Rockefeller Foundation from 1932 to 1955), advocated the development of natural, human, and industrial resources to meet the needs of growing populations, much as Notestein and Davis had recommended prior to 1947.⁷⁸

⁷⁶“Memorandum,” Mar. 28, 1952, folder 674, box 81, sub-series 5, series 1, record group 5.

⁷⁷Connelly, see n. 8, 155-156.

⁷⁸Schultz and Weaver presented these views at the meeting. See: National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — morning and evening sessions, 6/20/52,” June 20, 1952, folder 720, box 85, sub-series 5, series 1, record group 5; National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — morning session, 6/21/52,” June 21, 1952, folder 723, box 85, sub-series 5, series 1, record group 5; National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — afternoon session, 6/21/52,” June 21, 1952, folder 722, box 85, sub-series 5, series 1, record group 5; National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — evening session, 6/21/52,” June 21, 1952, folder 721, box 85,

Though he had no scientific training himself, Rockefeller intended for the 1952 meeting to produce a new consensus among leading scientists, businessmen, and philanthropists that population growth posed an insurmountable barrier to U.S. economic, strategic, and humanitarian aims in the global south and that population control through the spread of voluntary family planning would be necessary to effect peaceful decolonization and modernization.

The meeting began with most of the non-demographers pleading their ignorance of population matters and expressing bewilderment at their invitation. They disagreed over what, exactly, “the population problem” was and what could be done about it. Participants also disagreed about *where* “the population problem” was: natural scientists expressed more concern about population growth in the United States, while demographers — who had already determined the baby boom to be “a temporary cycle, nothing permanent at all” — focused on the global south.⁷⁹

Possibly anticipating this lack of consensus, Rockefeller’s advisors had asked Hajnal, under Notestein’s supervision, to prepare a briefing book to inform participants about the causes and potential consequences of population growth in the global south.⁸⁰ Given that most participants had not previously considered population growth or its global economic, political, or environmental consequences, Hajnal’s briefing book — which promoted Notestein’s 1947 contentions that population growth was a source of poverty in the global south and could be slowed through the promotion of contraception — structured much of the discussion. The briefing book explained recent population growth in terms of demographic transition theory and argued that global rates of growth were likely to increase further: although fertility had fallen dramatically in Western Europe, Oceania, North America and Japan, it was still high in the rest of the world, though offset for the moment by high mortality. Hajnal warned,

sub-series 5, series 1, record group 5; National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — morning session, 6/22/52,” June 22, 1952, folder 721, box 85, sub-series 5, series 1, record group 5.

⁷⁹National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — morning and evening sessions, 6/20/52,” see n. 78, 81.

⁸⁰Donald H. McLean Jr. to John D. Rockefeller III and Lewis L. Strauss, Mar. 3, 1952, folder 674, box 81, sub-series 5, series 1, record group 5; John Hajnal, “Briefing Materials for Williamsburg Conference on Population,” 1952, folders 718-719, box 85, sub-series 5, series 1, record group 5.

however, that efforts to promote economic development in the global south would reduce mortality well before reducing fertility, stimulating population growth that could stymie development projects. He argued against attempts to increase food production, arguing that such strategies would further reduce mortality and thereby increase population and attendant nutrition requirements, while simultaneously promoting increasingly rapid soil erosion.⁸¹ Hajnal's conclusion that continued population growth was unsustainable from both economic and environmental perspectives formed the starting point for the Williamsburg discussions.

Participants accepted Hajnal's Malthusian contention that famine and malnutrition in the global south provided evidence of overpopulation. Hunger, malnutrition, and even famine were, indeed, real problems in the decades following World War II, but attributing those phenomena to population growth elided many other important factors, including the distribution of food and other resources, the use of land (often under foreign ownership) to grow cash crops for a global market rather than food for local consumption, the replacement of local diets with food manufactured or distributed by multinational corporations, and the replacement of local knowledge about nutrition with nutrition science that originated in the global north and often failed to recognize the value of foods grown in the global south.⁸² As economist Amartya Sen has argued, "starvation is the characteristic of some people not *having* enough food to eat. It is not the characteristic of there *being* not enough food to eat. While the latter can be a cause of the former, it is but one of many *possible* causes. Whether and how starvation relates to food supply is a matter for factual investigation."⁸³ People starve not because there is not enough food — or because there are too many people — but because they lack the exchange entitlement that would allow them to acquire food. Further,

⁸¹Hajnal, "Briefing Materials for Williamsburg Conference on Population," see n. 80, 33-34.

⁸²Henrietta L. Moore and Megan Vaughan, *Cutting Down Trees: Gender, Nutrition, and Agricultural Change in the Northern Province of Zambia, 1890-1990* (Portsmouth: Heinemann, 1994); Verena Raschke and Bobby Cheema, "Colonisation, the New World Order, and the Eradication of Traditional Food Habits in East Africa: Historical Perspective on the Nutrition Transition," *Public Health Nutrition* 11, no. 7 (2007): 662-674; Cynthia Brantley, "Kikuyu-Maasai Nutrition and Colonial Science: The Orr and Gilks Study in Late 1920s Kenya Revisited," *International Journal of African Historical Studies* 30, no. 1 (1997): 49-86.

⁸³Amartya Sen, *Poverty and Famines: An Essay on Entitlement and Deprivation* (Oxford: Clarendon, 1981), 1, emphasis in the original.

even if there is not enough food, it is not necessarily because there are too many people, but may also be a product of the global structure of food production and distribution. Rather than considering the cause of widespread hunger and malnutrition in the global south as a matter for investigation, as Sen recommends, those present at Williamsburg accepted the Malthusian attribution of hunger to overpopulation, eliding all other causes, many of which Notestein and Davis had recognized in 1944.

On the basis of Hajnal's text, the Williamsburg participants generally agreed that "the potentialities for growth implicit in extremely high birth rates" in the global south were "likely to prove a disadvantage to the peoples of those areas in seeking more rapid improvements of their wealth, health and material levels of living."⁸⁴ That is, they accepted the premise that population growth presented a challenge to economic development, which they understood as a growing economy or GNP per capita, as described above.

Those present at Williamsburg agreed that a stagnant or declining per capita GNP in the global south could disrupt the global and political order by increasing popular discontent and fueling nationalist and communist movements, which would be strengthened by growing populations. They accepted that, in order to keep GNP per capita from declining as populations grew (declining GNP per capita implied but did not necessarily constitute overall worsening of living standards, just as rising GNP per capita implied but did not necessarily produce overall improvement of living standards), economic growth would need to outpace population growth.⁸⁵ While some of the scientists at Williamsburg continued to recommend interventions aimed at increasing the portion of world resources available to the global south and continued to view equitable modernization as the best way to stimulate economic growth while ultimately reducing fertility, they conceded to the view of the majority that population control through family planning could facilitate these programs while protecting U.S. economic interests and containing the spread of communism.

⁸⁴National Academy of Sciences, "A Conference on Population Problems, Williamsburg, VA, Transcript — morning and evening sessions, 6/20/52," see n. 78, 86.

⁸⁵Ibid., 26.

There were only two problems with this consensus position, which those present at Williamsburg readily acknowledged: just as when Notestein presented the Cold War version of demographic transition theory in 1947, there was no empirical evidence demonstrating either that population growth prevented economic development or that the spread of contraceptive information or technology could reduce population growth in agrarian societies. Nonetheless, the Williamsburg group agreed that investment in the global south — whether in agriculture, transport, manufacturing, or education and whether by the U.S. government, the U.N., businesses, or philanthropies — would not produce the desired results (financial returns, whether to the investors or to the local economy) unless accompanied by a reduction in fertility.⁸⁶ While they acknowledged the dearth of empirical data, they concluded that, if they waited to act until more research had been done, “it will be too late to do anything about it [reducing fertility].”⁸⁷ The Cold War provided a further sense of urgency, and the Williamsburg participants discussed the need to combat “communist propagandists who are filtering into the villages” of the global south promising “other ways out of the problem” of poverty.⁸⁸ Specifically, communism offered state control of land and natural resources and the promise of directing industrialization to produce maximum benefit for workers, solutions that had the potential to support a growing population at higher standards of living but that threatened the prevailing geopolitical and geoeconomic order that benefited U.S. industry.

Those present at Williamsburg briefly discussed, and summarily dismissed, the idea of international migration as a means of relieving the pressure of population on resources in the global south, a solution Warren Thompson had promoted between the wars, as described in Chapter One. Demographic transition theory suggested that, even though population was growing rapidly in some parts of the global south, the world was not in danger of absolute overpopulation. Large tracts of land in Australia and the Americas were sparsely populated,

⁸⁶National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — morning and evening sessions, 6/20/52,” see n. 78.

⁸⁷National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — afternoon session, 6/21/52,” see n. 78.

⁸⁸Ibid.

and population growth in those areas was either already slowing or expected to slow soon. In fact, leaders of several countries in the global south — including Uruguay, Thailand, and Brazil — believed their countries too sparsely populated to adequately develop natural resources.⁸⁹ U.N. representatives from some of these countries advocated an international migration program to redistribute populations from more- to less-densely settled regions of the world. Yet neither the demographers nor any other participants at Williamsburg endorsed such a program, a reflection both of their own racism and of the racism they attributed to policymakers in the U.S. and Australia.

It is perhaps unsurprising that Frederick Osborn expressed anxiety that a scheme of international migration would result in the denizens of the global north being “engulfed by a great mass of people” who didn’t share their culture or values. Even Thompson abandoned his support for migration schemes, warning that “there is a very great danger of ruining our [economic] opportunities, if we have to compete with the populations which are going to grow rapidly.”⁹⁰ This statement reflected a global version of Thompson’s 1923 theory that immigrants to the U.S., because they had lower living standards and could thereby reproduce at a higher rate on a lower income, would “displace and supplant” the native born.⁹¹ Dorothy Thomas, in contrast, suggested that migration could benefit both sending and receiving countries, but argued that racist policy makers would block any proposal for such a scheme.⁹² The arguments of the Williamsburg group against facilitating migration from countries in the global south with rapidly-growing populations, either to the global north or to other parts of the global south, reveal their perception of two fundamentally opposed segments of the world’s population (the white and the non-white), their concern

⁸⁹National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — morning and evening sessions, 6/20/52,” see n. 78, 46-47; United Nations, *Yearbook of the United Nations, 1952* (New York: United Nations, 1952), 392.

⁹⁰National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — morning session, 6/21/52,” see n. 78.

⁹¹Thompson, “Standards of Living as They Affect the Growth of Competing Population Groups,” see n. 43, 57.

⁹²National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — evening session, 6/21/52,” see n. 78, 11.

with maintaining the political and economic superiority of the former over the latter, and their perception that the latter's growing numerical superiority posed a threat to the existing geopolitical and geoeconomic order.

The Williamsburg group agreed that population control in the global south would protect U.S. economic and political interests, even if it did not actually alleviate poverty or facilitate economic development. However, they also agreed that a program of population control would succeed only if it appeared to originate from within the countries in question rather than being imposed externally, as by a U.N. mandate or as a condition of U.S. foreign aid or World Bank loans. Economists and policymakers worldwide still viewed population growth as a source of economic, political, and military strength in the international arena, and pressure from the U.S. or an international agency to control population growth could appear as an attempt to reduce that strength. The U.N. Convention for the Prevention and Punishment of the Crime of Genocide, adopted by the General Assembly in 1948 and ratified by the requisite twenty member states in 1951, included in the definition of genocide "imposing measures intended to prevent births" when done "with intent to destroy, in whole or in part, a national, ethnical [sic], racial or religious group."⁹³ Although the Williamsburg participants did not explicitly voice this concern, as an attempt to reduce the size of specific national populations, their population control aims could easily have been construed as genocide.

Warren Weaver reminded the other meeting participants that the program of global population control they were beginning to formulate would likely generate considerable resistance, as it made sense only "from the point of view of Western Protestant philosophy," which was, "from the point of view of this planet, a minority point of view." He argued further that "there are thousands and millions of people on this planet whose basic ethical principles would lead them to totally different ideas about what was worth doing in this field of population and resources."⁹⁴ The group recognized that publics and heads of state would

⁹³United Nations, "Convention for the Prevention and Punishment of the Crime of Genocide" (1948), URL: [http://www.un.org/ga/search/view_doc.asp?symbol=a/res/260\(III\)](http://www.un.org/ga/search/view_doc.asp?symbol=a/res/260(III)).

⁹⁴National Academy of Sciences, "A Conference on Population Problems, Williamsburg, VA, Transcript — morning session, 6/22/52," see n. 78, 38.

support measures intended to control population growth only if they perceived population growth as more of a liability than an asset and if the intended users of family planning services expressed demand for them. Those present at Williamsburg reasoned that, if they could create popular demand for birth control and government support for family planning programs in the global south, technical assistance from U.S.-based organizations and U.S. government agencies would appear humanitarian rather than self-interested, and fertility could be reduced through the voluntary use of family planning services.⁹⁵

William Vogt, the national director of Planned Parenthood, suggested that family planning clinics would enjoy greater acceptance and popularity, both in the U.S. and overseas, if they were promoted as maternal health clinics. Vogt's comment suggests that Planned Parenthood's primary agenda had narrowed mainly to population control at the expense of reproductive health. Moreover, the description by Planned Parenthood research director Henshaw of his investigation of uterine parasites as a potential method of contraception for women in the global south dramatically underscores the organization's privileging of contraception over reproductive health. While histories of population control often conflate the population control and birth control movements, each promoted a different locus of control.⁹⁶ Birth control aimed to empower potential parents to choose the number of children they would have and when they would have them, while population control aimed to give scientific or political authorities control over the size and composition of populations.

As discussed in Chapter One, Margaret Sanger, the founder of Planned Parenthood, had advocated the legalization of contraception by promoting it as a more humane mechanism for eugenics than sterilization, and had strengthened her movement for female reproductive health and autonomy by enlisting the support of eugenicist and neo-Malthusian doctors and scientists. Yet population control movements also derived authority from the personal autonomy associated with the birth control movement, particularly as authoritarian popu-

⁹⁵Hajnal, "Briefing Materials for Williamsburg Conference on Population," see n. 80, 81.

⁹⁶For an exception to this generalization about the literature, see Linda Gordon, "The Politics of Population: Birth Control and the Eugenics Movement," *Radical America* 8, no. 4 (1974): 61–98.

lation control programs became increasingly distasteful in the 1930s and 1940s. In his free market eugenics program, described in Chapter Two, Frederick Osborn had advocated not just contraception (the technological means of preventing pregnancy), but also birth control (the ability of couples to choose the number of children they would have) as a strategy for improving the “quality” of the U.S. population. He argued that, as long as the social environment encouraged couples to choose the “correct” number of children based on their level of genetic “fitness,” a eugenic distribution of births could be achieved by making contraceptives freely and universally available. That is, Osborn promoted a behaviorist approach to eugenics, whereby engineering the social environment in which couples made decisions about childbearing would lead them to unconsciously make the “correct” decisions from a eugenic standpoint.⁹⁷ Universalizing the use of contraception was critical to his program, as he theorized that the most dysgenic distribution of births occurred when only elites in a given society had access to birth control.⁹⁸ The Williamsburg participants agreed that population control programs could only succeed if they worked through voluntary family planning programs, paralleling Osborn’s interwar eugenics programs. By suggesting that population control advocates in the U.S. emphasize family planning clinics as agents of reproductive health, Vogt was suggesting that, depending on their audience, advocates of population control could emphasize either the voluntary family planning portion of their program or the social control portion, which aimed to create a context in which family planning would produce population control.

4.2.2 The Population Council

Over the course of the meeting, those present at Williamsburg developed a strategy that would become the agenda of the Population Council, a nongovernmental organization established by John D. Rockefeller III and a subset of meeting participants later that year.

⁹⁷For a history of behavioral science in the U.S., see Lemov, see n. 82.

⁹⁸W. Parker Mauldin to Frederick Osborn and Dudley Kirk, Apr. 11, 1957, folder 40, box 4, record group IV3B4.2.

The strategy comprised three elements: funding demographic research and training, funding contraceptive research, and providing technical assistance to family planning programs in the global south. Each element aimed to support voluntary family planning as a vehicle for population control. Demographic research would demonstrate the need for population control, assess the possibility of fertility decline in agrarian societies, examine the factors that led couples to use birth control, and test approaches for promoting the adoption of family planning. Offering students from the global south training in demography would lead to indigenous analyses of population dynamics and local expert pressure on governments to enact population policies and provide family planning programs. As Taeuber put it at Williamsburg, such training would involve “the development of procedures whereby we can stimulate an interest. . . and whereby we can cooperate in the development and the policies that, shall we say, have to be indigenous in the areas.”⁹⁹ Contraceptive research would develop, in the words of Rockefeller Foundation officer Leland DeVinney, “a more effective, cheap, foolproof contraceptive device suitable for use among ignorant peasants in backward areas.”¹⁰⁰ Technical assistance would ensure that family planning programs in developing countries had the requisite supplies and expertise.

The Williamsburg group recognized that the work of the Population Council would be perceived and received much more favorably worldwide if the Council presented itself as an international organization without official connections to any government, especially the U.S. government. On the last day of the meeting, participants joked quite seriously about how they might create this appearance. Bronk echoed Strauss’s suggestion that the Council hold its first official meeting abroad, stating that “there are simple devices whereby one can have one’s friends abroad take the initiative,” to which Strauss responded “we’ll write the invitations in Sanscrit [sic].” Davis continued, “you might give the money to a Frenchman, who would give it to a Yugoslav, who would eventually give it back to the Council.” Such

⁹⁹National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — morning session, 6/21/52,” see n. 78.

¹⁰⁰DeVinney, see n. 75.

suggestions indicate the desire of those present at Williamsburg to maintain control over the nascent Population Council while giving it the appearance of a multilateral organization. Despite his continued doubt about the international ethics of population control, Weaver conceded that he had considerable experience in “indirection,” that is, “having international things initiated without their being aware of it,” with “their” presumably referring to publics and policy makers, in both the U.S. and the countries in question.¹⁰¹ Such statements and the levity with which they were made indicate broad acceptance among those present at Williamsburg of the U.S. government and U.S.-based businesses and philanthropies acting in the world unilaterally under the guise of multilateralism.

In the months following Williamsburg, Rockefeller and his associates began to worry that making the Population Council an international body could hinder action rather than facilitate it. They feared “that the foreigners represented on the Council will be from different countries, that each will instinctively look at any given problem from the point of view of his own country and that no two national representatives will place the same emphasis on the same problem.”¹⁰² This international scope was what they believed prevented the U.N. Population Commission from taking effective action, and their concern that input from other countries would obstruct any actions the Population Council might take reveals their awareness that their agenda aimed to advance U.S. interests rather than those of the countries the Council purported to help.

When the Population Council formed officially later that year, it did so as a U.S.-based nongovernmental organization, with a board of trustees composed entirely of U.S. scientists, businessmen, and philanthropists. Many trustees had been present at Williamsburg — John D. Rockefeller III, Frederick Osborn, Frank Notestein, Detlev Bronk, Karl Compton, Thomas Parran, and Lewis Strauss. Frank Boudreau, executive director of the Milbank Memorial Fund, was the only trustee who had not participated in the Williamsburg meet-

¹⁰¹National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — morning session, 6/22/52,” see n. 78, 53.

¹⁰²Donald H. McLean Jr. to John D. Rockefeller III, July 28, 1952, folder 674, box 81, sub-series 5, series 1, record group 5.

ing. On Notestein's recommendation, Rockefeller appointed Osborn executive vice-president and hired Dudley Kirk, who had previously worked at OPR and for the U.S. Department of State, in the full-time position of Demographic Advisor.¹⁰³ When Brock Chisholm, a Canadian physician who had recently become the first director-general of the World Health Organization, declined Rockefeller's invitation to become the Council's president, Rockefeller asked Osborn to fill the post temporarily, which he did for the next eight years, until Notestein succeeded him.¹⁰⁴

Initial funds for the Population Council came from Rockefeller sources: the Rockefeller Foundation, the Rockefeller Brothers Fund, and individual members of the Rockefeller family. In 1954, the Ford Foundation became the Council's largest donor, with an initial grant of \$600,000 for three years, later increased to \$1 million.¹⁰⁵ By that time, the Ford Foundation had become the largest philanthropic foundation in the U.S.; in 1954 it spent four times as much as the Rockefeller Foundation and ten times as much as the Carnegie Corporation.¹⁰⁶ The Ford Foundation originally placed its population activities under its Program in Behavioral Sciences. According to Bernard Berelson, the Ford Foundation's director of behavioral sciences, the Foundation initially entered the population field in 1953 at the urging of board members whose wives supported Margaret Sanger's work; he described them as "Planned Parenthood nuts."¹⁰⁷ The Foundation's first population-specific grants, however, were not to Planned Parenthood, but rather to the Population Reference Bureau, a eugenically-oriented organization that interpreted demographic research for the media (discussed in greater detail below) and to the Population Council, suggesting that the Foundation's population work may

¹⁰³Frank W. Notestein to Frederick Osborn, Dec. 15, 1953, folder 1, box 10.

¹⁰⁴Rockefeller Foundation, "Frederick Osborn Interview Report," Sept. 4, 1969, folder 494, box 73, sub-series 4, series 3, record group 5.

¹⁰⁵Rockefeller Foundation, see n. 104; Sarah Mellon Scaife, niece of Andrew W. Mellon and one of the heirs to the Mellon banking, oil, steel, and aluminum fortune, and her daughter, Cordelia Scaife May, were also early and generous donors. Scaife was a friend of Margaret Sanger and May an environmentalist who would contribute to population control causes throughout her life, first emphasizing birth control and later immigration. May established the Laurel Foundation, a conservation organization that promoted population control, in 1951, and the Colcom Foundation, an anti-immigration organization, in 1996. "Late Heiress' Anti-Immigration Efforts Live On," *Los Angeles Times*, July 25, 2013.

¹⁰⁶MacDonald, see n. 44, 4.

¹⁰⁷Morrissey, see n. 235.

initially have been motivated by eugenic and Cold War concerns.¹⁰⁸ This suggestion gains further credence from the timing of the Foundation's entry into population, which occurred the year after it "became massively involved in Third World development programs."¹⁰⁹ When the Ford Foundation phased out its behavioral sciences program in 1957, population moved to the Program in Economic Development and Administration. The Population Council recruited Berelson to direct its communications program in 1962. He became president in 1968, and will become increasingly relevant to this story in later chapters.¹¹⁰ Between 1954 and 1994, the Ford Foundation provided the Population Council with a total of \$88 million, an average of about \$2.2 million per year.¹¹¹

The Population Council, Demography, and Eugenics

In addition to supporting the Population Council, the Rockefeller and Ford Foundations also directly funded programs of population research and action. To a large extent, the Population Council's staff coordinated the various Ford and Rockefeller population projects, which meant that most funding decisions were made, either directly or indirectly, by the Population Council.¹¹² Despite Matthew Connelly's description of the postwar population establishment as "a system without a brain,"¹¹³ there was actually a substantial degree of coordination, though much of it occurred unofficially and behind the scenes, through private communications between Dudley Kirk and Frederick Osborn (and later Frank Notestein, W. Parker Mauldin, and Bernard Berelson) at the Population Council, Oscar (Bud) Harkavy at the Ford Foundation, and Marshall Balfour at the Rockefeller Foundation. The leadership of the Population Council considered their organization the "retailer" and the Ford and

¹⁰⁸Oscar Harkavy, *Curbing Population Growth: An Insider's Perspective on the Population Movement* (New York: Plenum, 1995).

¹⁰⁹John Caldwell and Pat Caldwell, *Limiting Population Growth and the Ford Foundation Contribution* (London: Frances Pinter, 1986), 21.

¹¹⁰Harkavy, see n. 108, 13.

¹¹¹*Ibid.*, 13.

¹¹²Morrissey, see n. 235.

¹¹³Connelly, see n. 8, 276.

Rockefeller Foundations the “wholesaler” in the population field.¹¹⁴

As president of the Population Council, Osborn was able to insert his eugenic program into the Council’s broader program of population control. Osborn remained secretary of the American Eugenics Society (AES) for much of the second half of the twentieth century, and the AES shared office space with the Population Council at 230 Park Avenue in New York.¹¹⁵ Throughout the 1950s, the Council granted the AES \$4,000 annually.¹¹⁶ Osborn and others viewed the work of the two organizations as complementary: as one observer put it, “the Population Council appears to be oriented toward the frightfully urgent control of racial quantity, while the Eugenics Society serves as a sort of Committee on Racial Quality.”¹¹⁷ When the Council drafted its first mission statement, Osborn included the eugenic distribution of fertility as an action point: “the promotion of research and the application of existing knowledge to develop such changes in the attitudes, habits and environmental pressures affecting the life of human beings so that within every social and economic grouping parents who are above the average in intelligence, quality of personality and affection will tend to have larger than average families.”¹¹⁸ Thomas Parran Jr., former Surgeon General and a Population Council trustee, reported to Rockefeller that he was “sorely troubled” by this statement, which he feared “could readily be misunderstood as a Nazi master race philosophy.” Further, he argued that Osborn’s eugenic model of human heredity had been disproved by genetic research, reiterating Raymond Pearl’s interwar assertion, discussed in Chapter Two, that “the most talented, intelligent and otherwise socially useful citizens show very little likelihood of transmitting these traits to their off-spring to a degree significantly

¹¹⁴“Dudley Kirk, Interview with Jean Van Der Tak for the PAA Oral History Project,” Apr. 29, 1988, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1947-60.pdf, 122.

¹¹⁵Frederick Osborn to Dudley Kirk, Oct. 24, 1966, folder 1796, box 97, record group IV3B4.5.

¹¹⁶Dudley Kirk, “Proposals for Board of Trustees Meeting of May 13, 1959,” May 4, 1959, folder 42, box 4, record group IV3B4.2.

¹¹⁷P.S. Barrows to Frederick Osborn, Mar. 4, 1965, folder 1796, box 97, record group IV3B4.5.

¹¹⁸“Proposed Establishment of Population Council - Draft,” Oct. 7, 1952, folder 674, box 81, sub-series 5, series 1, record group 5.

greater than they will appear in the off-spring with what one might label average persons.”¹¹⁹ In response to Parran’s objections, Osborn toned down the language of this action point; in the final version he coded his eugenic aims as “research in both the quantitative and qualitative aspects of population in the United States in relation to potential material and cultural resources,”¹²⁰ a statement that strongly resembled the original mission statement of the Population Association of America (PAA), discussed in Chapter Two, which Osborn had also helped to craft.

The field of demography had maintained its close relationship with Osborn’s free market eugenics throughout the war, even as it distanced itself from the fascist population policies pursued in Europe. Notestein and other prominent demographers — including Kirk, Kiser, and Lorimer — served on the AES’s board of directors during the 1950s and 1960s, included eugenic analyses of population trends in their work, and published occasionally in *Eugenics Quarterly*, published by the AES beginning in 1954, and in *Marriage and Family Living*, edited by Paul Popenoe and published by the National Council on Family Relations, which was closely aligned with the AES (Popenoe served on the board of both organizations).¹²¹ Osborn, who during the war had served as a major general in the Army’s Information and Education Division, became vice president of the PAA in 1947, despite his lack of scientific credentials.

During and immediately after the war, as geneticists began to identify hereditary origins of certain diseases, Osborn promoted the incorporation of medical genetics into medical school curricula and promoted genetic counseling (including information about contraception and sterilization) for couples who had hereditary diseases or the genetic predisposition to them.¹²² He also used the authority and visibility he gained from his position as president

¹¹⁹Thomas Parran to John D. Rockefeller III, Oct. 28, 1952, folder 674, box 81, sub-series 5, series 1, record group 5.

¹²⁰“Proposed Establishment of Population Council - Draft,” Nov. 12, 1952, folder 674, box 81, sub-series 5, series 1, record group 5.

¹²¹See, for example, “Significance of Population Trends,” which examines the eugenic implications of socioeconomic fertility differentials. Notestein, “The Significance of Population Trends,” see n. 3, 44; for more on Popenoe, see Stern, see n. 60.

¹²²Frederick Osborn, “Eugenics: Retrospect and Prospect,” Mar. 26, 1959, “Osborn - Concerning Eugenics,”

of the Population Council to promote his free-market eugenics program. This program had not changed from the interwar period, but he presented new Cold War justifications for it, including competition with the U.S.S.R., the U.S.'s position of global leadership, and the need to fend off potential attack from the rapidly-growing nonwhite portion of the world's population.¹²³ Some other demographers, particularly those associated with the Population Council, Princeton, and the Milbank Memorial Fund, shared Osborn's views. In a 1989 interview, Kirk stated that he had always viewed population growth in the global south in eugenic terms, and

in a way I hate to go on record for saying this, but I think there's a real problem in the Western civilization in that we are approaching a stationary population and the rest of the world, the less developed world, is rapidly becoming an increasing proportion of the total population. Since I have a background in political science, I see that as a power problem too. Because as these countries get developed, and particularly as China gets developed, their large populations are going to be a tremendous asset. That's a debatable question, of course, but I think so. I think that sheer size is going to have a very great effect on our position. In the past, Western civilization was a rapidly expanding civilization in numbers, in population, as well as in technology. I see us having to face a major readjustment in which power is going to go to other countries. And maybe we'd be better off if we had more people.¹²⁴

Since the Council's population control program and Osborn's eugenic agenda both relied on voluntary family planning in a context of subtle social control, Osborn was readily able to promote both agendas simultaneously.

Although the Population Council did not form as an international organization, it maintained its focus on population growth in the global south and cast its population control efforts as a humanitarian initiative, rather than one that would advance U.S. interests. However, the Council faced a number of challenges. First, most scientists and policy makers, in both the U.S. and the global south, did not view population growth as a problem. Second, as

box 4.

¹²³See, for example: Frederick Osborn, "Population Quality - Speech at the Women's City Club," Apr. 1, 1955, "Frederick Osborn - Papers #14," box 17; Frederick Osborn, "Absolute Weapons - The American Reply," 1961, "Frederick Osborn - Papers #21," box 18.

¹²⁴See n. 114, 130.

Weaver had pointed out at Williamsburg, if population growth did threaten to outpace the production of food and other resources, there was much more popular support worldwide for efforts to increase resource production than for efforts to reduce population growth. Third, even if publics and policy makers accepted population control as a solution to the growing imbalance between population and resources, demographic transition theory held that couples in “traditional” agrarian societies would not voluntarily undertake measures to control their family size. The following section describes efforts of the Population Council and its allied organizations to bring population growth in the global south to the wider attention of scientists, publics, and policy makers in the U.S. and abroad, and to promote population control through voluntary family planning as a plausible solution.

4.3 Popularizing Overpopulation

When John D. Rockefeller III founded the Population Council in 1952, he believed that the organization could most effectively carry out its program if it did so quietly. For that reason, the Council’s press release announcing its establishment was vague about its agenda, describing its purpose as

to study the problems presented by the increasing population of the world; to encourage and support research and the advancement and diffusion of knowledge resulting from such research; to serve generally as a center for the collection and exchange of information on ideas and developments relating to population questions; to cooperate with individuals and institutions having similar interests and to take the initiative in the broad fields that constitute the population problem.¹²⁵

This statement described population growth as a problem that needed to be addressed, but gave readers no indication of what the problem was or how the Population Council intended to address it. Press reports described the board members as “educators” and their agenda as an “educational project,” which was mostly true: many board members had taught at

¹²⁵“New Group Sets Up Population Study: J.D. Rockefeller 3d Heads Educational Project,” *The New York Times*, Aug. 4, 1953.

one point in their careers and the Council intended to produce and disseminate knowledge about the dangers of population growth and the means of controlling it. Moreover, defining the organization's mission as education rather than advocacy was key to maintaining its tax-exempt status.¹²⁶ The Council did not establish its technical assistance division until 1965, though it did send staff to consult with governments in the global south about family planning programs as early as 1955. However, the press release offered no hint that the Population Council's research aimed to address the "relationship of the world's population to its material and cultural resources" by reducing population growth rather than by increasing resources or distributing them more equitably. In general, the Population Council tried to avoid publicity in its first decade, both to facilitate work in other countries and to avoid attracting the opposition of the Catholic Church. One of the Council's first activities was to establish an "Ad Hoc Philosophy committee" to explore the Catholic Church's stance on contraception, along with that of other possible religious objectors, and potential means of securing the support of religious leadership.¹²⁷ Birth control remained controversial enough in the U.S. throughout the 1950s that Nelson Rockefeller worried about the impact his older brother's activities would have on his political career.¹²⁸

The economic discourse had another strong proponent in the 1950s, one who drew much more public attention to the cause of population control than did the Population Council: businessman Hugh Moore, who had contributed to the invention of the Dixie cup nearly 50 years earlier. Moore had made his fortune as head of the Dixie Cup Company, which merged with the American Can Company in 1957. After reading Vogt's *Road to Survival* and the eugenicist text *Population Roads to War or Peace* (described below) in the late 1940s, Moore, a longtime proponent of world peace, began to pour his wealth into population control as a way to prevent future war and avert the spread of communism. Moore's approach to

¹²⁶Zunz, see n. 72.

¹²⁷For records of the Ad Hoc Philosophy Committee, see folders 3-17, boxes 1-2, record group IV3B4.2, Population Council Archives, Rockefeller Archive Center. In the book, I will explore further the Population Council's relationship with the Catholic Church and other religious entities.

¹²⁸Rockefeller Foundation, see n. 104.

population control was quite different than Rockefeller's. Whereas Rockefeller set up a private organization to research and intervene in population growth in the global south without attracting public attention, Moore established a series of organizations that had as their primary objective stimulating fear among the American public about population growth in the global south and its potential to fuel the spread of communism. He lobbied the U.S. government to make population control a component of foreign policy, and encouraged U.S. citizens to ask the same of their elected representatives. This section describes the ways in which Rockefeller and Moore's activities promoted specific forms of demographic research and interpretations of research findings in ways that encouraged public support for U.S. involvement in population control worldwide.

4.3.1 Hugh Moore's Population Bomb

In 1954, Moore and his associate Tom Griessemer drafted a pamphlet called "The Population Bomb" and mailed 1,000 copies to American labor leaders, businessmen, journalists and newspapers, physicians, lawyers, clergy, scientists, university presidents, and philanthropists. Moore's pamphlet was the first use of this now well-known phrase, which forcefully associated population growth with global conflagration. Drawing on demographic scholarship and demographic transition theory, the pamphlet explained that world population was growing faster than it ever had before, and that this growth was dangerous because it produced widespread poverty and hunger in the global south, making governments there vulnerable to communist revolution, which would cut U.S. manufacturers off from critical materials, labor, and markets, destabilize the global balance of power, and threaten U.S. national security. "The Population Bomb" encouraged readers to lobby the U.S. government to implement measures to limit population growth abroad, particularly in countries that received U.S. aid. Later editions included a forward by World Bank president Eugene Black.¹²⁹ By 1967, Moore

¹²⁹Frances E. Walter to Hugh E. Moore, Aug. 9, 1961, Hugh E. Moore Papers, Seeley G. Mudd Manuscript Library, Princeton University, Princeton, NJ, folder 2, box 17.

had printed 13 editions of his “Population Bomb,” circulating 1.5 million copies. Each edition generated considerable media attention. Some newspapers serialized the pamphlet and published it in its entirety, and excerpts appeared in a 1964 English composition textbook, *Ideas and Backgrounds II*. In 1958 Moore produced a miniature edition “at the request of a professor of sociology who wished to distribute copies to his classes and also at the suggestion of gynecologists, Protestant ministers, and others who wished to distribute the pamphlet.”¹³⁰ The pamphlet’s wide circulation and the credibility given it by the press helped make Moore’s contentions and the economic overpopulation discourse common knowledge.

Figure 4.1: Hugh Moore’s “Population Bomb” Pamphlet



The leaders of the Population Council found Moore’s strategy troubling because Moore presented population control as a program that would benefit the U.S. They feared that if

¹³⁰Hugh E. Moore to Frederick Osborn, June 24, 1958, folder 344, box 22, record group IV3B4.2.

the U.S. government implemented coercive policies toward other countries, such as making foreign aid conditional on their instituting population programs, as Moore recommended, those countries would reject population control altogether. Members of the Council's board also opposed Moore's explicit promotion of population control as a means of containing the spread of communism. They did not object to Moore's contention that population growth in the global south would facilitate the spread of communism or that population control would advance U.S. economic and strategic interests. Rather, they objected to the publicity Moore sought for these contentions, fearing that explicit calls to reduce population growth in the global south for the benefit of the U.S. would backfire, provoking resistance to family planning programs as well as nationalist and communist agitation. As board member Hermann Muller explained,

I quite agree that the population growth occurring in underdeveloped countries is one of the most menacing developments of our times and that it and the means of counteracting it should be given far more publicity than they have had. It is also true, as you point out, that the Communist movement is finding this situation profitable to themselves and may be able to use it to gain world dominance if we do not succeed in helping the underdeveloped countries to check their population growth. However, the misery caused by overpopulation should in itself provide sufficient argument for its control for the people in underdeveloped countries and their sympathizers elsewhere. Many of these people have already been aroused by the Communists to such antagonism against us that the mere suggestion of our wanting them to change their ways in order to give us an advantage relative to the Communists would tend to throw them still further towards the Communist camp. Thus very subtle questions of tactics are involved in the spread of information and propaganda on this subject... In a case of this kind I think we can combat World Communism much more effectively and also help the underdeveloped peoples more effectively by putting our prime emphasis on the direct detriment of population growth to themselves and to their plans for the future.¹³¹

Whelpton warned Moore that the image on the cover of his pamphlet — a bomb-shaped world teeming with population and scissors marked “Population Control” snipping off a

¹³¹H.J. Muller to Bruce Barton, Will Clayton, and Hugh Moore, Jan. 31, 1957, folder 344, box 22, record group IV3B4.2, Muller sent a copy of this letter to Robert Cook at the PRB, who forwarded it to Frederick Osborn at the Population Council, with the handwritten note “Please don't circulate too much!”

burning fuse, shown in Figure 4.1 — was misleading, as it implied both a much more dire situation than the reality, and also a much simpler solution. For Whelpton, who had served as director of the U.N. Population Division and was familiar with global population data, population growth was still slow enough so as not to require extreme measures, and a delicate enough matter of international relations that any efforts to reduce it had to be undertaken with extreme diplomacy.¹³² Even Osborn, one of Moore’s strongest supporters outside of his direct group of associates, warned that

for three years now we have had people working in India, Egypt, Japan and other countries and reporting to us on what can be done. They are all agreed that there is practically no hostility towards the idea of birth control or contraception in any of these countries, far less indeed than in the United States. But they all report that there is a feeling of extreme nationalism which makes it necessary that they appear to do everything themselves and on their own initiative. They may want our help but this is not something they want to admit publicly. Our efforts therefore and those of others in this field are most successful when they are carried forward quietly, and least successful when there is any publicity about them.¹³³

Notestein cautioned that coercive measures aimed at reducing fertility were likelier to produce revolutions against the governments that enacted them than to succeed in slowing population growth.¹³⁴

Nonetheless, Rockefeller, Osborn, and Kirk appreciated Moore’s efforts to draw the attention of the U.S. public and policy makers toward population growth in the global south, recognizing that government support for population control would bring with it access to vastly greater public funding than even Rockefeller and his fellow industrial philanthropists could hope to leverage.¹³⁵ As Rockefeller explained to Moore, “there is no difference between us as to our objectives in relation to population stabilization and family planning. We all agree as to the seriousness of the problem and the need for action more commensurate with its magnitude and urgency. Such differences as we have are entirely as to method and ap-

¹³²Pascal K. Whelpton to Hugh E. Moore, Jan. 10, 1955, folder 344, box 22, record group IV3B4.2.

¹³³Frederick Osborn to Hugh E. Moore, Sept. 13, 1955, folder 344, box 22, record group IV3B4.2.

¹³⁴See n. 88.

¹³⁵Rockefeller Prentice to Hugh E. Moore, Feb. 20, 1964, folder 18, box 2.

proach.”¹³⁶ Population Council staff members worked with Moore and his associates to tone down the language in the first edition of “The Population Bomb” to make it less potentially offensive to people in the global south and to weaken the emphasis on preventing the spread of communism.¹³⁷ Whelpton also offered his support, writing to Moore, “I hope that your program does not stop with the one pamphlet which has been issued but that it moves forward intelligently. If there is anything I can do personally to help in this connection, please let me know for I shall be glad to cooperate as much as is feasible.”¹³⁸ In the early 1960s, Osborn gratefully acknowledged that Moore’s work had “created the public climate that enabled the great foundations to push forward in the field.”¹³⁹

4.3.2 Empirical Support for Economic Overpopulation

In their correspondence with Moore, Council leaders emphasized that population control programs should originate in the countries of the global south and that U.S. support for them should — at least officially — be motivated by “the misery caused by overpopulation.”¹⁴⁰ However, there was no scientific or policy consensus as to what constituted overpopulation or whether population growth was the cause of the “misery” — often a gloss for poverty and its sequelae — that characterized the global south. When Eugene Black, president of the World Bank, asked Notestein in 1952 for a pamphlet he could distribute to loan-seeking countries explaining that rapid population growth could stymie their development efforts, Notestein responded that there was no empirical evidence for this contention, though he had been making the same contention for the last five years.¹⁴¹ Notestein’s former student, Harvey Leibenstein, had just completed a dissertation working out the theoretical basis for

¹³⁶John D. Rockefeller III to Hugh E. Moore, Jan. 2, 1968, folder 18, box 2.

¹³⁷Dudley Kirk to Frederick Osborn, Jan. 31, 1957, folder 344, box 22, record group IV3B4.2; “Confidential Memorandum on the Luncheon Discussion of ‘The Population Bomb’ at the Harvard Club in New York, March 10, 1955,” n.d., folder 344, box 22, record group IV3B4.2.

¹³⁸Whelpton to Moore, Jan. 10, 1955, see n. 132.

¹³⁹“Organizations in the Population Field,” 1966, folder 21, box 17.

¹⁴⁰Muller to Barton, Clayton, and Moore, Jan. 31, 1957, see n. 131.

¹⁴¹See n. 88.

what would come to be known as the “low-level equilibrium trap,” whereby high fertility directed household income into subsistence rather than savings, such that capital investment could not stay ahead of population growth, thereby preventing growth in per-capita income.¹⁴² In 1954, the Princeton University Press published Leibenstein’s work as part of its series on population change in the global south, sponsored by the Milbank Memorial Fund and the Rockefeller Foundation. Leibenstein’s work, however, was entirely theoretical, with no supporting empirical evidence: up to that point in time, all countries that had experienced large-scale industrialization, urbanization, and the other changes associated with modernization had done so in conjunction with rapid population growth.¹⁴³

When Notestein relayed this information to Black, Black offered World Bank funding for an empirical investigation of the relationship between population growth and economic development, to be carried out by Notestein’s OPR colleague and former student Ansley Coale in collaboration with World Bank economist Edgar Hoover. Titled *Population Growth and Economic Development in Low-Income Countries* and known informally as the Coale-Hoover Report, the project focused on India as a case study and used simulation to assess the effects of potential population growth on future economic development. Coale projected India’s population forward thirty years under three different fertility scenarios (all with the same mortality assumptions) and Hoover projected the economic growth that would accompany each fertility scenario. They found that a 50% reduction in fertility over the thirty-year period corresponded to a 40% increase in per-capita consumer income, Coale and Hoover’s metric of economic development.¹⁴⁴ As Coale acknowledged, these simulation results could not be empirically verified, as they assumed multiple simultaneous futures.¹⁴⁵

¹⁴²Harvey Leibenstein, *A Theory of Economic-Demographic Development* (Princeton: Princeton University Press, 1954); Warren O. Nelson, “Endocrinology – Achievement and Challenge,” *Endocrinology* 59, no. 1 (1956): 140–152.

¹⁴³Simon Kuznets, “Population and Economic Growth,” *Proceedings of the American Philosophical Society* 111, no. 3 (1967): 170–193.

¹⁴⁴Ansley J. Coale and Edgar M. Hoover, *Population Growth and Economic Development in Low-Income Countries: A Case Study of India’s Prospects* (Princeton: Princeton University Press, 1958).

¹⁴⁵Ansley J. Coale, *Ansley J. Coale: An Autobiography* (Philadelphia: American Philosophical Society, 2000), 38.

Nonetheless, the study was widely accepted as definitive evidence that “continued high fertility is an impediment if not a total barrier to economic and social development.”¹⁴⁶

For the next few decades, Coale and Hoover’s study was the only thing resembling empirical evidence for the relationship between fertility and economic growth in the global south, and it served as the foundation for numerous other studies. Building on Coale and Hoover’s conclusions, RAND economist Stephen Enke began to publish cost-benefit analyses of population control in 1960, arguing that paying cash incentives to men who had vasectomies or women who accepted IUDs would have a larger positive effect on economic growth than direct investment in such programs as land reclamation or urbanization.¹⁴⁷

The Coale-Hoover Report was hugely influential and proved pivotal for Coale’s career. Having served on the faculty of Princeton’s Department of Economics since 1947, Coale was denied tenure in 1953 due to a dearth of publications in major economics journals, indicating the marginal place demography still held within that field. The university gave him a terminal year to finish his projects, during which he carried out much of the research for the Coale-Hoover Report. On the basis of that research, Notestein convinced the department to revisit Coale’s case, at which point he was granted tenure.¹⁴⁸ Coale went on to become one of the most well-known and influential demographers of the twentieth century. In 1959, when Notestein left OPR to serve as president of the Population Council, Coale succeeded him as director of OPR; in 1961, Coale succeeded Kingsley Davis as U.S. representative to the U.N. Population Commission (Davis had succeeded Hauser in 1954).¹⁴⁹

Coale and Hoover emphasized that the study aimed not to predict what India’s future

¹⁴⁶Ansley J. Coale, “The Voluntary Control of Human Fertility,” *Proceedings of the American Philosophical Society* 111, no. 3 (1967): 164–169.

¹⁴⁷Incentives appeared more cost effective as the result of an accounting sleight of hand by which the incentives paid were not considered as part of the cost of the program. Paul Demeny, “The Economics of Government Payments to Limit Population: A Comment,” *Economic Development and Cultural Change* 9, no. 4 (1961): 642; for Enke’s original analysis and his response to Demeny, see: Stephen Enke, “The Economics of Government Payments to Limit Population,” *Economic Development and Cultural Change* 8 (1960): 339–348; Stephen Enke, “A Rejoinder to Comments on the Superior Effectiveness of Vasectomy-Bonus Schemes,” *Economic Development and Cultural Change* 9, no. 4 (1961): 645–647.

¹⁴⁸See n. 88.

¹⁴⁹Coale, *Ansley J. Coale: An Autobiography*, see n. 145.

population or per capita consumer income *would be* at any point in the future, but rather to demonstrate the relative effects of different rates of population growth on economic growth. For that reason, the study was often presented as proof that more population growth meant less economic growth — even though Coale and Hoover had demonstrated the non-linearity of the relationship — and that any population growth would have a negative impact on economic development. But this was not actually what the study demonstrated. As earlier chapters have discussed, projections are always overdetermined by their starting assumptions. The starting assumptions of the economic projections in Coale and Hoover’s study were those of Leibenstein’s theory of the low-level equilibrium trap: that higher fertility would reduce household savings and prevent capital accumulation without increasing effective demand.¹⁵⁰ According to this model, high fertility reduced per-capita consumer income both by increasing the denominator — the size of the population — and by decreasing the numerator, through the assumption that higher fertility translated into reduced savings, reduced capital investment, and reduced productivity. But even within the confines of those assumptions, Coale and Hoover predicted, as Coale himself stated in his 2000 autobiography, “significant prospective economic progress even with continued high fertility, and significant if somewhat modest additional progress should fertility be substantially reduced in the next generation.”¹⁵¹ That is, the study did not show that population growth would prevent economic growth, only that a reduction in population growth could enhance it.

4.3.3 Communicating the Results of the Coale-Hoover Report

Discussions, reviews, and citations of the study almost uniformly neglected the substantial economic growth Coale and Hoover predicted for India under continued high fertility in favor of the “significant if somewhat modest additional progress” they predicted under the reduced fertility scenario.¹⁵² Even today, the study is incorrectly described as having predicted falling

¹⁵⁰Coale and Hoover, see n. 144.

¹⁵¹Coale, *Ansley J. Coale: An Autobiography*, see n. 145, 37.

¹⁵²*Ibid.*, 37.

per-capita consumer income under the high fertility scenario,¹⁵³ which is not at all what Coale and Hoover found. Rather, they found that per-capita consumer income would increase by 38% under the high fertility scenario and by 95% under the low fertility scenario.¹⁵⁴ Harvard economist Simon Kuznets pointed out that the 40% difference in per-capita income Coale and Hoover found at the end of the thirty-year simulation period amounted to only about 1% per year compounded, and commented to Coale that it would be easy to produce that magnitude of increase through economic programs that did not require widespread changes in the sex life of the populace.¹⁵⁵ Nonetheless, demographers and other social and natural scientists — including Walt Whitman Rostow, who cited the Coale-Hoover Report in his classic work on modernization theory, *The Stages of Economic Growth* (1960) — used this study to argue that fertility reduction was a necessary prerequisite for economic development. This section examines how his reading of the Coale-Hoover Report became the predominant one, offering support to the economic overpopulation discourse.

The Population Council emphasized Coale and Hoover's finding that lower fertility produced higher economic growth to scholarly audiences throughout the world, sending copies of their book to population research centers and government statistical agencies in the global south, and the Population Reference Bureau (PRB) promoted it among popular and policy audiences. The PRB had been founded in 1929 by eugenicist Guy Irving Burch to bring demographic research to the public by publishing readily-understandable summaries of it for use by the media. In the 1930s, Burch served on the boards of both Margaret Sanger's National Committee for Federal Legislation for Birth Control and the American Eugenics Society. In his own words, the motivating factor behind all of his work was to prevent the native-born white population of the U.S. from "being replaced by alien or negro stock, whether it be by immigration or by overly high birth rates among others in this country."¹⁵⁶

¹⁵³Latham, *The Right Kind of Revolution: Modernization, Development, and U.S. Foreign Policy from the Cold War to the Present*, see n. 29.

¹⁵⁴Coale and Hoover, see n. 144, 280.

¹⁵⁵Coale, *Ansley J. Coale: An Autobiography*, see n. 145, 37.

¹⁵⁶Quoted in Ellen Chesler, *Woman of Valor: Margaret Sanger and the Birth Control Movement in America* (New York: Simon & Schuster, 1992), 343.

In 1945, Burch published his only book, *Population Roads to Peace or War*, coauthored with sociologist Elmer Pendell; it was republished in 1947 under the title *Human Breeding and Survival: Population Roads to Peace or War*. In it, Burch and Pendell argued that creating a lasting global peace would require both quantitative and “qualitative” (eugenic) engineering of the world’s population.¹⁵⁷ Drawing on a trope that was also a favorite of Osborn, they argued that “if civilized man nullifies nature’s hard methods of thinning out the population and ruthlessly destroying the weakling, civilized man also must substitute humane methods of limiting the population and of controlling the multiplication of incompetents.”¹⁵⁸ That is, they justified population control and eugenics as replacements for natural selection, which had been undermined by advances in medicine and public health. Burch and Pendell also favored stringent restrictions on immigration, arguing that “if the immigrants displace Americans. . . , *the Americans whom they displace are the children of our most accomplished citizens.*”¹⁵⁹ Burch’s work frequently cited Raymond Pearl and his logistic law of population growth, discussed in the previous chapters, even after Pearl himself had abandoned the logistic law.

Burch directed the PRB until the early 1950s, when he was succeeded by Robert C. Cook, author of *Human Fertility: The Modern Dilemma* (1951). Cook had little formal education, but had been tutored in the sciences by his father, a friend of eugenicist Alexander Graham Bell. Cook became editor of the *Journal of Heredity*, organ of the American Genetic Association, in 1922, and joined the PRB in 1932.¹⁶⁰ The American Genetics Association was a sometime competitor and sometime ally of the American Eugenics Society. Its membership tended to be more aligned with the racial thought of Charles Davenport, Paul Popenoe, and the Eugenics Record Office, discussed in Chapter One, whereas the American Eugenics Society in the 1930s began to promote Osborn’s free-market eugenics. Paul Popenoe had

¹⁵⁷Guy Irving Burch and Elmer Pendell, *Human Breeding and Survival: Population Roads to Peace and War* (New York: Penguin, 1947), 122-123.

¹⁵⁸*Ibid.*, 128.

¹⁵⁹*Ibid.*, 80, emphasis in the original.

¹⁶⁰Joan Cook, “Robert C. Cook, 92, A Longtime Scholar of Human Genetics,” *The New York Times*, Jan. 9, 1991.

preceded Cook as director of the *Journal of Heredity*, which in 1934 published Popenoe's "glowing review of the Nazi sterilization law."¹⁶¹ Under Cook's direction in the 1950s, the PRB's budget grew substantially through grants from the Ford Foundation, the Population Council, and other sources. These grants supported the publication of a newsletter, *The Population Bulletin*, eight times a year. The PRB also issued periodic press releases aimed at keeping its interpretation of population growth and demographic research in the media. *The Population Bulletin* had a wide readership in the U.S. and abroad among journalists, scientists, and other professionals, and the Bureau also promoted it as a classroom resource. During this period, biologist Clarence Cook Little, scientific director of the Tobacco Industry Research Committee, presided over the PRB's board of trustees, which also included demographers Pascal Whelpton, Kingsley Davis, and Joseph Spengler.

Frederick Osborn played an important role in securing funding for the PRB. In addition to providing small grants from the Population Council, he also facilitated Ford Foundation grants and solicited donations from other organizations and individuals. However, when Cook invited Osborn to join the PRB's board of trustees, Osborn declined, explaining to Cook that the leaders of the Population Council were "most anxious that the Council should enjoy the closest cooperation with the Population Reference Bureau and the several other organizations in which you and I are interested, but they think it better that the relationship be informal."¹⁶² This informal relationship gave the Population Council editorial oversight of the Bureau's publications, allowing the Council to influence how demographic research would be interpreted by the media and by policy makers. By the late 1960s the PRB had, with a grant from John D. Rockefeller III's sister, Abby Rockefeller Mauze, established an office in Bogota, Colombia, where it translated PRB press releases into Spanish and Portuguese and forwarded them to the popular press throughout Latin America.¹⁶³

The *Population Bulletin*'s summary of the Coale-Hoover Report inaccurately claimed

¹⁶¹Molly Ladd-Taylor, "Eugenics, Sterilisation and Modern Marriage in the USA: The Strange Career of Paul Popenoe," *Gender & History* 13, no. 2 (2001): 307.

¹⁶²Frederick Osborn to Robert C. Cook, Dec. 7, 1953, folder 382, box 25, record group IV3B4.2.

¹⁶³Hugh E. Moore, "Mobilizing Public Opinion for Population Control," Sept. 5, 1967, folder 23, box 21.

that if India's fertility levels were to continue unchanged, "economic development will be stifled by the sheer number of people, and India will not achieve that breakthrough to a better life for her people that her Five-Year Plans envision. Rather, she will be much more deeply engulfed in the morass of poverty and misery."¹⁶⁴ Thirty years later, Coale reflected that India's population growth had been close to his high projection and "their economic output was right on the button" of Hoover's projection. That is, per capita consumer income had grown by about 38% over the previous thirty years. Coale also discussed the ways in which his study had been misinterpreted, stating "it's not true that we foresaw a catastrophe — people imply we're Malthusians or something. We foresaw that India was going to do quite well, and just said that they would do still better if they reduced their fertility."¹⁶⁵ Though Coale later acknowledged that Hoover had predicted substantial economic growth even under his high fertility scenario, he never challenged the interpretation of his work that the Population Council and the Population Reference Bureau promoted throughout the 1960s.

The economic overpopulation discourse inspired, informed, and generated funding for Coale and Hoover's study of the relationship between population growth and economic development in India. I have argued here that it also overdetermined the way in which results of the study were interpreted, with the Population Council and the Population Reference Bureau publicizing to scientists and the public a reading of the results that emphasized the more rapid economic growth simulated in the low-fertility scenario rather than the fact that the study showed increasing per capita consumer income even with continued high fertility. The following section traces the influence of the economic overpopulation discourse — and particularly the role of demography within that discourse — on U.S. foreign policy.

¹⁶⁴Robert C. Cook, "India: High Cost of High Fertility – draft sent to Dudley Kirk," n.d., folder 381, box 25, record group IV3B4.2.

¹⁶⁵See n. 88.

4.4 Population Control and U.S. Foreign Policy

As discussed above, the Population Council and Hugh Moore both sought to achieve government support for their population control efforts, and the Coale-Hoover Report provided the cause with critical scientific legitimacy. This section follows the PRB's interpretation of the Coale-Hoover Report into government, where the economic overpopulation discourse gained further support from a study by the National Academy of Sciences and a historical project carried out at OPR in the 1960s.

4.4.1 Tracing the Coale-Hoover Report into the U.S. Government

The PRB's interpretation of Coale and Hoover's study came to the attention of the U.S. government in 1959 by way of General William Henry Draper Jr., chairman of a commission appointed by President Eisenhower in 1958 to study U.S. foreign aid programs and recommend improvements. On hearing of Draper's appointment, Moore — who was personally acquainted with Draper — sent him a copy of “The Population Bomb” and put him in touch with Cook at the PRB, who introduced Draper to Coale and Hoover's study. The Draper Commission's final report echoed much of the language of Moore's pamphlet and PRB publications, arguing that U.S. foreign aid would fail to realize its objectives if populations in the global south continued to expand, and recommending that the U.S. assist other countries in limiting their population growth. Upon receiving the report, President Eisenhower rejected its recommendations in regard to population control, stating “I cannot imagine anything more emphatically a subject that is not a proper political or governmental activity or function or responsibility.”¹⁶⁶ In his campaign for president in 1959 and 1960, John F. Kennedy recommended a policy of expanding resources and facilitating their distribution rather than controlling population.¹⁶⁷

¹⁶⁶Quoted in Robertson, see n. 12, 91.

¹⁶⁷Latham, *The Right Kind of Revolution: Modernization, Development, and U.S. Foreign Policy from the Cold War to the Present*, see n. 29.

After submitting his committee's report, Draper joined Moore in his efforts to raise money and public support for population control in the global south. In the late 1950s and early 1960s, Moore became the International Planned Parenthood Federation's most prolific fundraiser, not only contributing his own money, but also creating the World Population Emergency Campaign (WPEC) to solicit donations from others in the business-philanthropic community. WPEC merged with PPFA in 1961 to form Planned Parenthood - World Population, further moving the PPFA's activities and interests from women's reproductive health to global population control.¹⁶⁸

Under the auspices of the Hugh Moore Fund, Moore and Draper launched a strategy of printing full-page advertisements in prominent newspapers, such as *The New York Times*, *The Wall Street Journal*, and *The Washington Post*. Moore favored advertisements over earned media because "in paid space you can tell people what they should do, when they should do it and where."¹⁶⁹ Some of the ads appealed directly to the President (first Kennedy and then Johnson) to act on the threat of population growth in the global south and were signed by a long list of prominent Americans; others urged citizens to pressure the U.S. government to pursue population control in other countries along with — or even instead of — foreign aid. Their strategy, expressed by Rockefeller Prentice, cousin of John D. Rockefeller III and an associate of Hugh Moore, was to "get elected officials to realize that their stand on the population issue will mean their success or defeat at the polls. If and when we get this far, we will have men in office who can control policies as to birth control through clinics in this country and through foreign aid abroad, and implement such policies by the use of public funds of a magnitude that, admittedly, no single one of us could ever hope to match."¹⁷⁰ By raising public concern about global population growth, Moore and Draper sought to make support for population control an obligatory passage point for elected officials. Their ads were largely text-based, but also included graphs showing world population shooting upward

¹⁶⁸Critchlow, see n. 1, 32.

¹⁶⁹Moore, "Mobilizing Public Opinion for Population Control," see n. 163.

¹⁷⁰Rockefeller Prentice, Hugh E. Moore, Feb. 20, 1964, folder 2, box 17.

from 1 billion in 1830 to a projected 7 billion in 2000. One such ad, shown in Figure 4.2, featured a cartoon drawing of a stork delivering a large bundle of babies, outpacing a running U.S. taxpayer overburdened with a bag marked “foreign aid” and unable to keep up with the stork. The caption read “Population Explosion Nullifies Foreign Aid.”¹⁷¹ In addition to printing the advertisements in the newspapers, Moore sent them to prominent and influential Americans. These ads in turn stimulated individual letter-writing to policy makers, urging them to do something to contain the “population explosion.”¹⁷² Moore kept in regular contact with George Gallup at the American Institute of Public Opinion, who carried out surveys to assess the effects of Moore’s efforts on U.S. public opinion, and advised Moore on how to more effectively capture public attention.¹⁷³

Rockefeller and the trustees of the Population Council, also eager to enroll the U.S. government in their project of population control, took a more measured approach to stimulating government interest in overseas population control, one that relied more heavily on scientific authority. In 1962, George Kistiakowsky, a physicist who had worked on the Manhattan Project and former science advisor to President Eisenhower, then chair of the Committee on Science and Public Policy of the NAS, created a panel to assess existing research on global population growth and its consequences and to recommend policy approaches. Many of the scientists selected for the panel had ties either to the Rockefeller Foundation or to the Population Council, including Ansley Coale and Bernard Berelson.¹⁷⁴ The panel’s final report, published in 1963, rehearsed the findings of Coale and Hoover’s study as evidence that the current rate of world population growth was problematic and needed to be reduced, stating that “economic progress will be slower and more doubtful if less-developed areas wait for the supposedly inevitable impact of modernization on the birth rate.” Such an approach, the report argued, would “run the risk that rapid population growth and adverse age distribution

¹⁷¹Hugh E. Moore, “Population Explosion Nullifies Foreign Aid: An Appeal to the President of the United States,” advertisement, June 9, 1963, *The New York Times* p. 176.

¹⁷²See, for example, William L. Langer to President John F. Kennedy, Jan. 29, 1962, folder 2, box 17.

¹⁷³George Gallup, Hugh E. Moore, Aug. 14, 1963, folder 2, box 17.

¹⁷⁴National Research Council, *The Growth of World Population: Analysis of the Problems and Recommendations for Research and Training* (Washington, D.C.: National Academy of Sciences, 1963), vii.

Figure 4.2: Hugh Moore Newspaper Advertisement



POPULATION EXPLOSION NULLIFIES FOREIGN AID

An appeal to the President of the United States

We the undersigned citizens have supported the United States Foreign Aid program from its beginning for human better and political reasons; but recent experience in many of the developing countries has shown that such aid is not resulting in the absence of some control of their exploding populations.

During the past five years the United States has paid out over 15 billion dollars in economic foreign aid to improve living standards in Asia, Africa and Latin America. Yet, for and large these standards have not risen and there are now over 80 million more people than there were five years ago - most of them hungry.

In the next five year period more than 22 billion dollars will be required in the effort to maintain the present dangerously low level of living of the enlarged populations. And in the period after that still more money will be needed unless the flood of new people is arrested. American economic aid, instead of ameliorating, may actually be compounding the economic problems of many of the developing land countries receiving it.

ANOTHER ONE BILLION PEOPLE IN 15 YEARS

The population projection, as the chart shows, is appalling to contemplate. It took thousands of years from the time of the first man and woman to reach one billion people. That occurred about 1825. It required only one century to add the second billion - around 1925. It took less than 23 years to add the third billion.

In the next 15 short years there will be still another billion people if the present rate of increase continues - most of them in countries now receiving U.S. aid.

This crop of newcomers would be greater than the total number of people living today in all the countries of Europe and North and South America. 200 million more mouths to feed, babies to clothe and house, minds to educate!

The resulting human misery and social tensions, we submit, would inevitably lead to chaos and strife - to many more Cyprus and Haiti - to revolutions and wars, the dimensions of which it would be hard to predict. There would be no peace.

As for foreign aid in such a world, the question would appear to be at what point the U.S. - or for that matter the rest of the Great Powers of the West - will of necessity need

to withdraw from a game of such rapidly mounting stakes.

WE RECOMMEND

With this proposal in mind it is our recommendation, Mr. President, that our own aid be continued for the time being on a carefully administered basis as proposed to you by the Clay Committee, but at the same time, that the U.S. Government heretofore engage in a greatly accelerated program for limiting world population.

We support the National Academy of Sciences in its request that the Government vastly expand research in the bio-medical aspects of human reproduction and the social aspects of population control. We agree with the Academy that "this problem can be successfully attacked by developing new methods of fertility regulation, and implementing programs of voluntary family planning widely and equitably throughout the world," and that "the overall task is to achieve and avoid acceptance of the desirability of planning and controlling family size."

Mr. President, the politics you took at your press conference last April 23 was encouraging. Also encouraging was the support our Government gave the Swedish Resolution on population control in the U.N. last December. You have correctly said that "the magnitude of the problem is staggering."

We therefore recommend specifically that you employ immediately the vast resources at your disposal through the National Institutes of Health and other Federal Agencies looking to a solution.

HUMANITY'S GREAT DILEMMA

We believe that the problem of rapid population growth ranks with that of the mushroom atom as one of the two great dilemmas faced by modern man. At a time when the atom has progressed beyond the expenditure of \$8 billion for the Alliance for Progress, \$2.5 billion for space exploration and billions more for public health, it is tragic to contemplate the relatively trifling amount now devoted to a problem upon the successful solution of which the others may well depend.

We heartily agree with you, Mr. President, that the U.S. should not impose birth control on other nations; but we would take a hard look at any applicant for economic aid who completely disregards the population factor.

POPULATION AID DESIRED

Many governments receiving U.S. economic aid today are thoroughly aware of the problem of the mounting numbers of their people and would also happily accept aid from us in population control.

In conclusion, Mr. President, we make a judgment. It is our plain sense that the population problem demands your current preoccupations with Laos, Berlin and the Atlantic Alliance - important as they are - and we believe that every day lost in tackling this matter as a man's work will make the solution more difficult for you and your successors.



would themselves prevent the achievement of the very modernization that they count on to bring the birth rate down.”¹⁷⁵ The panel recommended that the U.S. government adopt the Population Council’s approach, concluding that “this problem can be successfully attacked

¹⁷⁵National Research Council, *The Growth of World Population: Analysis of the Problems and Recommendations for Research and Training*, see n. 174, 19.

by developing new methods of fertility regulation, and implementing programs of voluntary family planning widely and rapidly throughout the world.”¹⁷⁶

The 1963 NAS report on population growth shows the strong influence of Bernard Berelson, a behavioral scientist with no specific experience in demography, population, or family planning, who had just been hired as the Population Council’s communication director. During the war, he had served in the Foreign Broadcast Intelligence Service with renowned behaviorist Harold Lasswell, and worked with Paul Lazarsfeld on his well-known voting studies, *The People’s Choice* (1944) and *Voting* (1954).¹⁷⁷ Berelson shared Osborn’s faith that fertility in the global south could be reduced through the provision of family planning services, given a social environment in which effective educational and propaganda communications promoted their use. By the time he joined the Population Council in 1962, two highly effective systemic forms of contraception were available, the Pill and the IUD (these technologies will be discussed in greater detail in Chapter Five). What Berelson and the Council lacked, however, was empirical evidence that couples in “traditional” agrarian societies would adopt such technologies on a scale large enough to substantially reduce fertility rates. During the 1960s, the Population Council funded two research programs that produced such evidence: fertility surveys and the Princeton European Fertility Project (PEFP), a large-scale study in European historical demography. Chapter Five explores fertility surveys in detail; here, I will briefly discuss the PEFP.

4.4.2 The Princeton European Fertility Project

Coale launched the PEFP in 1963, the same year that the NAS population panel published its final report. Between 1963 and 1975, Coale and several former students and colleagues

¹⁷⁶By “new methods of fertility regulation,” they likely meant IUDs and other methods that they still hoped to develop, as the pill had already been on the market in the U.S. for three years. National Research Council, *The Growth of World Population: Analysis of the Problems and Recommendations for Research and Training*, see n. 174, 1.

¹⁷⁷John Durham Peters and Peter Simonson, eds., *Mass Communication and American Social Thought: Key Texts 1919-1968* (Oxford: Rowman & Littlefield, 2004), 254.

based in the U.S. and in Europe analyzed the relationship between economic development and fertility in Europe between 1850 and 1950 at the province level, using historical government statistical reports.¹⁷⁸ The project resulted in a series of monographs detailing the historical fertility decline of each country, and a set of cross-national analyses that attempted to identify universal patterns. At the outset, Coale expressed his “hope that through a better understanding of the decline in fertility in the different parts of Europe, we will come to a better understanding of the prospects for changing fertility in the underdeveloped areas where the social and economic changes that cause a decline in the birth rate have not yet occurred.”¹⁷⁹ The project therefore aimed to universalize the European experience in two ways: first by studying European history as a model for the present and future of the rest of the world, and second by figuring out how to reproduce the European historical experience in the global south. While the Princeton European Fertility Project is often heralded as one of the first studies in the field of historical demography,¹⁸⁰ it was explicitly forward looking, treating historical Europe as “a unique statistical laboratory in which to investigate the conditions under which a population undertakes the voluntary restriction of fertility.”¹⁸¹ Coale received hundreds of thousands of dollars in funding for this project, initially from the Rockefeller Foundation and the Population Council and later from NIH and NSF, after the U.S. government began funding population research (discussed below).¹⁸²

The PEFP’s research design linked aggregate fertility rates to the social and economic conditions of provinces or other subnational administrative units, using ecological regression (regression with aggregate units of analysis) to test the contention of demographic transition theory that people living in places that are more “modern” have smaller families. As a result of inconsistencies in the data across space and over time, the only socioeconomic variables

¹⁷⁸ Ansley J. Coale, “Form letter to European demographers and statistical offices,” 1963, folder 11, box 10.
¹⁷⁹ Ibid.

¹⁸⁰ See, for example, Merchant and Hacker, see n. 17.

¹⁸¹ Ansley J. Coale, “The Decline of Fertility in Europe from the French Revolution to World War II,” in *Fertility and Family Planning: A World View*, ed. S.J. Behrman, Leslie Corsa Jr., and Ronald Freedman (Ann Arbor: University of Michigan Press, 1969).

¹⁸² Ansley J. Coale to Allen Sinigalli, July 24, 1978, folder 1, box 2.

used in the project's cross-national analyses were measures of industrialization, urbanization, and literacy. With these measures, Coale and his colleagues found no consistent international correlation between modernization and fertility, a result that they and others interpreted as evidence that economic development was neither necessary nor sufficient to explain historical fertility decline in Europe and was therefore neither necessary nor sufficient to reduce fertility in the global south.¹⁸³

On the basis of his results, Coale rejected economic development as a structural precondition for fertility decline, instead presenting three individual-level preconditions: first, couples must believe that it is possible and acceptable to plan their fertility (in terms of quantity, timing, or both); second, couples must perceive an advantage (material or otherwise) in reducing their fertility; third, they must have access to effective techniques of contraception.¹⁸⁴ The formulation of preconditions at the individual level reflects the adoption of individual surveys as a tool of fertility research. By the 1960s, fertility surveys following the model of the Indianapolis Study described in Chapter Two were being carried out all over the world, as will be discussed in Chapter Five. These studies, like the Indianapolis Study, aimed to correlate family size with individual attitudes and characteristics — mainly the socioeconomic characteristics identified by the Indianapolis Study — rather than structural characteristics of the societies in which individuals lived. However, the demographers who carried out the PEFPP had no data regarding either fertility change at the individual level or individual attitudes associated with fertility. These preconditions did not arise from the actual findings of the PEFPP, but rather from the PEFPP's inability to identify a structural relationship between fertility decline and industrialization, urbanization, or literacy. While the classic model of demographic transition had theorized that fertility would decline sponta-

¹⁸³Etienne van de Walle and John Knodel, "Demographic Transition and Fertility Decline: The European Case," in *Proceedings*, Meeting of the International Union for the Scientific Study of Population (1967); Ansley J. Coale, "Factors Associated with the Development of Low Fertility, An Historic Summary," in *Fertility, Family Planning, Mortality*, World Population Conference 1965, Belgrade, by the United Nations (1965); Constance Holden, "World Population: U.N. on the Move but Grounds for Optimism are Scant," *Science* 183, no. 4127 (1974): 833–836.

¹⁸⁴Ansley J. Coale, "The Demographic Transition," in *Proceedings*, Meeting of the International Union for the Scientific Study of Population, Liège (1973), 65.

neously when socioeconomic conditions disincentivized large families, the model formulated by Coale and his colleagues in the Princeton European Fertility Project suggested that fertility decline resulted from the diffusion of the three preconditions — through communication and technology transfer — independent of socioeconomic conditions.

Project participants developed and exhibited this diffusion model through the use of maps as tools of both analysis and presentation, illustrated in Figure 4.3.¹⁸⁵ Although mapping was not a new technique in the social sciences — Charles Booth’s 1891 maps of poverty in London and the 1895 *Hull House Maps and Papers* are just two prominent nineteenth-century examples¹⁸⁶ — the Princeton European Fertility Project may have been the first use of choropleth maps — maps in which the shading represents the value of the thing being measured in the given territory — to illustrate social change moving across space over time.¹⁸⁷ Mapping levels of fertility and the timing of fertility decline allowed Coale and his colleagues to identify spatial patterns that may have gone unnoticed if they had arranged their data only in alphabetic tables. The maps demonstrated that the boundaries between fertility regimes corresponded closely to linguistic and religious boundaries. Within regions united by common language and/or culture, neighboring provinces tended to have similar levels of fertility and experienced fertility decline around the same time, even if they had differing values of the socioeconomic indicators, while provinces divided from their neighbors by language tended to have different levels of fertility, even if they had similar values of the socioeconomic indicators. Coale suggested that linguistic, religious, or cultural “boundaries may serve as firebreaks that temporarily confine a spread of controlled fertility. . . both because regions with different cultures are differentially resistant to the prerequisites of decline, and because a region defined by a common language and culture is a natural unit within which diffusion occurs.”¹⁸⁸

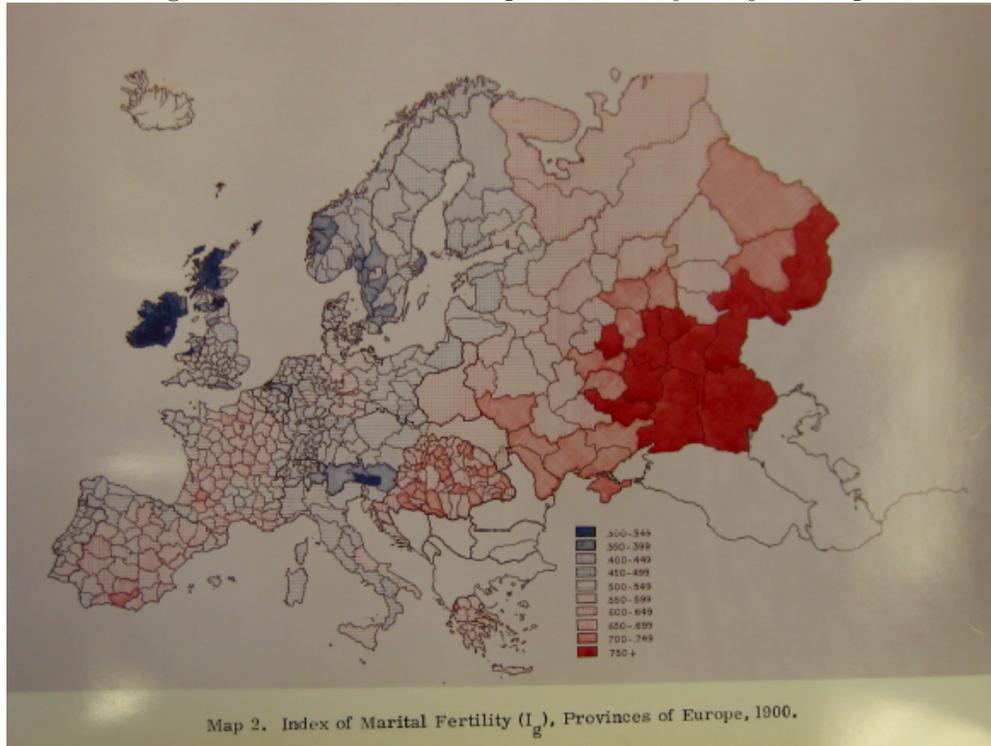
¹⁸⁵Ansley J. Coale, “Map 2. Index of Marital Fertility, Provinces of Europe, 1900,” n.d., folder 17, box 10.

¹⁸⁶Kathryn Kish Sklar, “Hull House Maps and Papers: Social Science as Women’s Work in the 1890s,” in *The Social Survey in Historical Perspective, 1880-1940* (New York: Cambridge University Press, 1991).

¹⁸⁷Myron P. Gutmann et al., “Introduction,” in *Navigating Time and Space in Population Studies*, ed. Myron P. Gutmann et al. (2011).

¹⁸⁸Coale, “The Demographic Transition,” see n. 184, 67.

Figure 4.3: Princeton European Fertility Project Map



In addition to the maps, project participants also pursued more formal tests of the spatial relationships they posited by including distance measures and indicators of physical barriers in their regression models. Though their results were not always statistically significant, those that were suggested that the fertility transition may have occurred through the spread — from place to place and from early adopters to later adopters within each place — not just of contraceptive knowledge and technology (precondition #3), but also of the very idea that the number and timing of births could be planned (precondition #1) and that doing so would be advantageous (precondition #2). The maps, which were included in several of the project’s publications, became both illustrations and demonstrations of the new diffusion model.

Upon finding that Europeans had adopted family planning at varying levels of socioeconomic development and that fertility change seemed to follow cultural or linguistic boundaries, Coale and his colleagues argued that “there is no convincing basis for asserting that a program of indoctrination in the advantages in health and welfare from reduced fertility

would inevitably be a failure in a rural poorly educated population.”¹⁸⁹ Coale even argued that the three preconditions for fertility decline were also prerequisites for “achiev[ing] the conspicuous material gains from modernization,” thereby suggesting that by instilling these prerequisites, family planning programs could stimulate either modernization or the “conspicuous material gains” associated with it.¹⁹⁰

By the time Coale announced this conclusion at the 1973 meeting of the International Union for the Scientific Study of Population, the Population Council was already engaged in just the kind of propaganda effort he recommended to spread what Arland Thornton has described as “developmental idealism,” the idea that small families and economic development are mutually constitutive.¹⁹¹ Coale’s results therefore did not form the basis for the Council’s program of technical assistance, which it officially launched in 1965, but rather provided intellectual justification after the fact. Indeed, Coale and his funders may have known in advance that the results of the project would validate the Council’s family planning efforts. Pilot work by OPR graduate students John Knodel and Nathaniel Iskandar had demonstrated varying levels of socioeconomic indicators at the onset of fertility decline in different parts of Europe, and a third graduate student, William Leasure, had used the mapping technique in his dissertation on the historical fertility decline in Spain, demonstrating that fertility decline had correlated with language rather than with any indicator of socioeconomic development.¹⁹² Although Coale framed the project as a search for the socioeconomic correlates of fertility transition, he also knew at the outset that “the decline appears to have taken place under quite diverse circumstances” as well as “at quite different times.”¹⁹³ It seems that he may have expected ultimately to reject the causal link between fertility decline and socioeconomic development, and instead provide support for population control efforts even in the absence of economic development.

¹⁸⁹Coale, “The Demographic Transition,” see n. 184, 69.

¹⁹⁰Ibid., 69.

¹⁹¹Thornton, see n. 191.

¹⁹²See n. 88; William Leasure, “Factors Involved in the Decline of Fertility in Spain 1900-1950” (Ph.D. diss., Princeton University, 1962).

¹⁹³Coale, “Form letter to European demographers and statistical offices,” see n. 178.

Other demographers questioned Coale's rejection of socioeconomic variables as predictive of fertility decline. Berkeley demographer Judith Blake, then-wife and former student of Kingsley Davis, suggested that such conclusions exemplified the "particularistic fallacy," which occurs "when one turns one's attention entirely to the association between particular variables — urbanization, education social mobility — and declining family-size goals, instead of utilizing the associations to trace out the basic and more general mechanisms involved." Blake argued that, instead of looking for consistent relationships between particular variables, demographers should be concerned more broadly "with factors making children less and less useful to parents and increasingly expensive," and should recognize that "the exact nature of these factors will necessarily vary between historical periods and among societies."¹⁹⁴ In other words, fertility decline could still depend on economic development even if the same socioeconomic variables were not always associated with it. Similarly, University of Pennsylvania demographer Richard Easterlin, a former student of Dorothy Thomas, proposed an alternative model in which parents always had a target number of offspring in mind but only began to exercise control over their fertility when the supply of children began to exceed demand for them (either through an increase in supply resulting from shortened breastfeeding or reduced infant mortality or through a decrease in demand resulting from a rise in the cost of childbearing). He argued that, while the target number of children may be culturally determined, fertility control only appeared in response to socioeconomic shifts that disrupted the equilibrium between supply and demand, though the specific trigger would likely vary from place to place and time to time, and the timing of fertility decline would depend on the intersection between cultural family size preferences and shifts in supply and demand.¹⁹⁵ Blake and Easterlin both argued that the lack of *consistent* socioeconomic correlates of fertility did not mean that socioeconomic factors did not affect or even determine fertility. Blake and Easterlin's critiques, though they questioned

¹⁹⁴Judith Blake, "Demographic Science and the Redirection of Population Policy," *Journal of Chronic Disease* 18 (1965): 1181–1200.

¹⁹⁵Richard Easterlin, "Toward the Cumulation of Demographic Knowledge," *Sociological Forum* 2, no. 4 (1987): 835–842.

the efficacy of family planning programs in agrarian societies, accepted the economic terms in which demographers were increasingly couching their theories about fertility and family planning. As discussed in Chapter Two, demographers had begun to view childbearing decisions as consumer choices, a perspective encouraged by the results of the Indianapolis Study and embedded in the postwar fertility studies and family planning interventions that will be described at greater length in Chapter Five.

Blake and Easterlin's models were actually quite consistent with the findings of the PEFP. Although the project failed to produce a grand synthesis, in which the same socioeconomic variables predicted the same levels of fertility across space and time, it did not find that socioeconomic factors were uncorrelated with fertility. Rather, it found that "because of a different culture based on a different language and different history, Basques with a certain number of years of schooling and a given occupation are different from Catalonians with the same qualifications, Germans from Frenchmen and Southern Italians from Northern Italians."¹⁹⁶ By highlighting the ways in which socioeconomic variables could function differently depending on time and place, the PEFP exemplified an enduring tension in the emergent field of historical demography: that between historical social science, which uses historical data to identify natural laws of society that are independent of time and place, and social scientific history, which uses quantitative analysis to reveal information about particular societies in the past, and to identify their unique elements or contingencies in their historical experiences.¹⁹⁷

While the PEFP is widely regarded as having demonstrated the importance of cultural factors in the study of fertility and the adoption of family planning, it focused mainly on the socioeconomic correlates of fertility decline, which could be measured quantitatively, rather than the cultural correlates, most of which could not. Ron Lesthaeghe, who wrote the monograph for Belgium, complained that, because the project was a quantitative one, he and his fellow participants were "forced, whether we like it or not, to treat these [cultural]

¹⁹⁶Coale, "The Demographic Transition," see n. 184, 67.

¹⁹⁷Merchant and Hacker, see n. 17.

variables in one lumped, residual category, where, in fact, they do not belong.”¹⁹⁸ The socioeconomic variables therefore remained the main explanators of fertility change, and any variation in fertility for which they could not account was ascribed to “unmeasured traditions and habits of mind,” which presumably could be altered through education and propaganda.¹⁹⁹ However, Lesthaeghe and Massimo Livi-Bacci, who wrote the monograph for Italy, demonstrated that mentalities were not independent of socioeconomic conditions. Both demographers included in their analyses a measure of secularization as a proxy for the adoption of a rational outlook, operationalizing it as the level of support for non-Catholic political parties. Although they found this variable to have an independent effect on fertility, secularization was itself a result of such socioeconomic processes as industrialization and urbanization. Moreover, even with secularization/rationalization controlled for, Lesthaeghe found in Belgium that “on the whole, the relationship between industrialization-urbanization and the marital fertility decline cannot be denied.”²⁰⁰

The PEFP’s subnational units of analysis allowed for the comparison of provinces within the same countries whose denizens spoke different languages or followed different religions. However, because the project analyzed fertility at the aggregate level, participants could draw only limited conclusions about the effects of even the few cultural factors they could include without succumbing to the ecological fallacy. Livi-Bacci described the project’s aggregate analysis as “always a very imperfect substitute for individual data that can be regrouped to present information about persons classified according to their individual characteristics.”²⁰¹ This statement suggests that, despite its aggregate design, the project aimed to identify the characteristics of couples that would make them more receptive to family planning programs, rather than to identify the characteristics of societies that correlated with low aggregate fertility or might precipitate aggregate fertility decline. Livi-Bacci’s statement

¹⁹⁸Ron J. Lesthaeghe, *The Decline of Belgian Fertility, 1800-1970* (Princeton: Princeton University Press, 1977), 41.

¹⁹⁹Coale, “The Demographic Transition,” see n. 184, 67.

²⁰⁰Lesthaeghe, see n. 198, 164.

²⁰¹Massimo Livi-Bacci, *A History of Italian Fertility During the Last Two Centuries* (Princeton: Princeton University Press, 1977), 139.

also indicates that project participants were aware of the ecological fallacy, which Barbara Anderson described particularly well in the project's summary volume. Anderson argued that the finding that a *province* with a large proportion of group X has higher aggregate fertility than a province with a large proportion of group Y does not mean that *members* of group X necessarily have higher fertility than members of group Y; it could also be that members of both groups have higher fertility when group X is in the majority than when group Y is in the majority.²⁰² Coale's preconditions for fertility decline, however, operated at the individual level, and therefore could not be tested with aggregate analysis of the type performed by the PEFP. In fact, no causal inference of any kind could be drawn simply from the type of cross-sectional data analysis that comprised the project. As Lesthaeghe acknowledged, "using non-experimental data, no statistical procedure is capable of proving or disproving that a relationship is solely asymmetric or causal." Therefore, "results from regression analysis can be given a causal interpretation only when one is willing to accept the existence of a theoretical causal model on *a priori* grounds."²⁰³ The analyses performed by project participants could identify correlations, but turning those correlations into statements about causation required theory, in this case Cold War demographic transition theory.

4.4.3 U.S. Government Response

As with the Coale-Hoover Report, what Coale and others said about the PEFP carried more weight in terms of public opinion and policy than did the contents of the project's publications. While critiques of the project have provided ample fodder for debate within the field of demography, they were largely overlooked by the philanthropists and policy makers who pointed to the study as intellectual support for the project of reducing population growth in the global south through the provision of family planning clinics. The Population Council

²⁰²Paraphrased from Barbara A. Anderson, "Regional and Cultural Factors in the Decline of Marital Fertility in Western Europe," in *The Decline of Fertility in Europe: The Revised Proceedings of a Conference on the Princeton European Fertility Project*, ed. Ansley J. Coale and Susan Cotts Watkins (Princeton: Princeton University Press, 1986).

²⁰³Lesthaeghe, see n. 198, 152.

had launched this strategy unofficially in 1955, prior to the initiation of research for the PEFPP and, by the time the project started, the Council, together with Moore and Draper's group, had enrolled the U.S. government in the project of global population control. By that time, the Population Council and Moore and Draper's group had developed allies within the State Department and the Agency for International Development (USAID), who worked diligently and incrementally to shift U.S. policy toward providing family planning assistance as part of overseas aid and development programs. In 1958, Senator J. William Fulbright, chairman of the Foreign Relations Committee, who had worked with Draper on the Marshall Plan a decade earlier, told foreign aid officials in India that "they certainly should be doing something about population growth even if they did not report it to Congress."²⁰⁴ In 1962, Sweden announced that it would begin providing birth control as part of its foreign aid programs, creating a climate in which the U.S. could do the same without appearing to be acting out of self-interest.²⁰⁵ The same year, the U.S. Department of State hired Robert W. Barnett to oversee population matters, on which he consulted with Hugh Moore, William Draper, and Robert Cook.²⁰⁶ In 1963, following the publication of the NAS report on global population growth, the Senate Foreign Relations Committee added an amendment to the 1961 Foreign Aid Bill proposed by Senator Fulbright authorizing "research into the problems of controlling population growth" and "technical assistance to cooperating countries in carrying out programs of population control."²⁰⁷ Also in 1963, President Kennedy approved a \$500,000 grant to the World Health Organization for research on human reproduction.²⁰⁸

In 1964, Moore and Draper established the Population Crisis Committee (PCC) to formally carry out their project of securing public support for population control and lobbying policy makers.²⁰⁹ They explicitly decried their aim as "promot[ing] governmental action of large proportion instead of private aid which, welcome as it is, can never be enough to have

²⁰⁴Piotrow, see n. 1, 76.

²⁰⁵Ibid., 71.

²⁰⁶Hugh E. Moore, "State Department Visit," Mar. 13, 1962, folder 2, box 17.

²⁰⁷Quoted in Piotrow, see n. 1, 78.

²⁰⁸Caldwell and Caldwell, see n. 109, 77.

²⁰⁹Moore, "Mobilizing Public Opinion for Population Control," see n. 163.

an effective impact upon the world population problem.”²¹⁰ Rockefeller, Osborn, Draper, and Moore saw the 1964 presidential election as an opportunity to bring their concerns to the Johnson administration, in hopes that he would devote further resources to their cause. By that time, population control had gained broad support from across the political spectrum, with former presidents Eisenhower and Truman both agreeing to serve as honorary chairmen of Planned Parenthood, each on the condition that the other also agreed.²¹¹ Following the election, Rockefeller and Draper organized a delegation, headed by Dean Acheson, the former Secretary of State who had attributed the success of China’s communist revolution to overpopulation, to visit the President and explain to him the dangers of population growth in the global south, but Johnson refused to see them.²¹² With continued pressure from advocates of the Population Council and the Population Crisis Committee both inside and outside of the government, Johnson was convinced to address population in his 1965 State of the Union speech, where he promised to “seek new ways to use our knowledge to help deal with the explosion in world population and the growing scarcity in world resources.”²¹³ His use of the phrase “explosion in world population” suggests Moore’s influence.

Over the course of the year, Johnson became more explicit about his support for family planning as a way to promote economic development in the global south and to reduce poverty in the U.S. In June, at the U.N.’s twentieth anniversary celebration, he urged his fellow heads of state to “act on the fact that less than five dollars invested in population control is worth hundreds of dollars invested in economic growth,” suggesting that he had been convinced by Enke’s work.²¹⁴ Later that year, the Office of Economic Opportunity began to finance Planned Parenthood projects to provide poor women in the U.S. with family planning services.²¹⁵ That same year, USAID inaugurated its first family planning program; it established an Office of Population in 1966.

²¹⁰Hugh E. Moore, “Population Crisis Committee,” n.d., folder 17, box 18.

²¹¹Piotrow, see n. 1, 88.

²¹²Hugh E. Moore to John D. Rockefeller III, Oct. 26, 1964, folder 18, box 2; Piotrow, see n. 1, 88.

²¹³Quoted in Piotrow, see n. 1, 89.

²¹⁴Quoted in Connelly, see n. 8, 213.

²¹⁵Piotrow, see n. 1, 91.

Also in 1965, Senator Ernest Gruening of Alaska, a physician who had long supported the legalization and promotion of birth control and was in frequent contact with Moore, launched a series of hearings that continued for the next three years about the consequences of global population growth and the potential for population control. The hearings included testimony from former President Eisenhower and his science advisor; Rockefeller, Draper, and other leaders of the Population Council, the Population Crisis Committee, Planned Parenthood, and other organizations that had emerged to promote population control; Dr. John Rock, one of the developers of the contraceptive pill, and Dr. Jack Lippes, developer of one of the new IUDs (Lippes Loop); and demographers, conservationists, and activists of various kinds.²¹⁶ Throughout the hearings, Gruening observed aloud that “this is entirely a matter of freedom of information and freedom of choice, without compulsion, . . . and it is merely a matter of making knowledge available,” echoing the rhetoric of voluntarism that the Population Council continued to promote.²¹⁷ Widespread publicity of these hearings further served to make the economic discourse of overpopulation common knowledge among the U.S. public. In 1967, the Department of State appointed a special assistant for population matters and Congress added Title X, “Programs Relating to Population Growth,” to the 1961 Foreign Assistance Act. This amendment explicitly earmarked foreign aid funds for population control activities, beginning with \$35 million in fiscal year 1968. This amount would expand considerably over the next few years as will be discussed in Chapter Six.²¹⁸ USAID’s population budget supported government-sponsored family planning programs in Asia, Africa, and Latin America, and supported U.S.-based family planning organizations that worked in those continents, including the Population Council, the International Planned Parenthood Federation, and the Pathfinder Fund, which supplied local family planning associations in target countries that did not allow direct U.S. population assistance.²¹⁹

²¹⁶Piotrow, see n. 1, 106.

²¹⁷Quoted in *ibid.*, 106.

²¹⁸The director of USAID initially objected to this large earmark for population activities, but Draper’s influence was stronger. Warwick, see n. 154, 46.

²¹⁹Warwick, see n. 154, 45-49; after the 1973 Helms Amendment to Title X, which prohibited the use of USAID funds to provide abortion services abroad, USAID increased funding to IPPF, which could continue

Conclusion

Most histories of demography or population control in the second half of the twentieth century assume that population growth presented a clear and unequivocal threat to economic development in the global south and efforts to overcome poverty in the U.S. They also assume that birth control provided an obvious solution, though one that required scientific research and had to overcome prudery and religious objections. This chapter has disrupted these assumptions by treating the postwar population crisis as an event that had to be discursively created, rather than one that occurred naturally.

Earlier chapters have demonstrated that, prior to World War II, demographers and policy makers viewed population growth as a source of national strength and economic vitality, and worried when the populations of other countries grew faster than the populations of their own countries. In this chapter, I showed that, as of 1944, demographers perceived population growth in the global south not as a barrier to economic development, but rather as a symptom of an economy that had been actively underdeveloped by colonial rule and economic exploitation. Their research suggested that only economic development could reduce population growth by creating a desire for smaller families.

Yet only a few short years later, these demographers had changed their analysis, suggesting that rapid population growth imperiled economic progress and environmental integrity, and that the diffusion of family planning programs could reduce fertility — even in agrarian societies — and thereby stimulate modernization. This chapter has suggested that demography's theoretical adaptation was influenced by the field's new patrons and clients, by the Cold War and its restriction of academic freedom, and by modernization theory, which emphasized multiple causality.

Demography's new patrons and clients incorporated the Cold War version of demographic transition theory into their own population-oriented agendas to control world population to advance the interests of U.S. philanthropy and business, as well as national security and to provide abortion services (though not directly with USAID funding) Warwick, see n. 154, 5.

political and economic hegemony. Recognizing that efforts from within the U.S. aimed at controlling population growth abroad would arouse resistance unless they were motivated by efforts to promote economic development and alleviate poverty, patrons funded research that would provide scientific legitimacy to the economic discourse of overpopulation — including the Coale-Hoover Report and Coale’s Princeton European Fertility Project. Even when these studies did not offer direct empirical evidence that population growth prevented economic development or that couples would use contraception in the absence of economic development, demography’s new clients — including the Population Reference Bureau and Hugh Moore and his associates — interpreted these studies in ways that nonetheless supported the economic overpopulation discourse, and publicized those interpretations through the mass media and personal connections to policy makers.

By the end of the 1960s, two small and interconnected groups of men — those associated with the Population Council, led by John D. Rockefeller III and Frederick Osborn, and those associated with the Population Crisis Committee, led by Hugh Moore and William Draper — had produced enough publicity for the economic discourse of overpopulation and enough support for their program both among the public and within the government to secure investment from the U.S. government in demographic research and global population control. The following chapter will explore the effects of those investments on the structure and content of demographic research in the 1950s and 1960s.

Chapter 5

The Postwar Expansion of Demography and Family Planning

The field of demography grew dramatically between 1950 and 1975, largely as a result of direct investment by the Population Council, the Ford Foundation, and the U.S. government. These organizations funded research on fertility throughout the global south by U.S. demographers, the establishment of population research centers at U.S. universities and in the global south (both within universities and free-standing), and the training of graduate students in demography from both the U.S. and the global south, who went on to careers as faculty members, government statisticians, and family planning administrators. This chapter traces the expansion of demography during this period, focusing on the ways in which the field's patrons influenced its growth and the ways its clients (often the same people and institutions as the patrons) utilized the findings of its research to promote global population control.

The first section describes the establishment of population research centers and the careers of some demographers in the U.S. and the global south. I argue that the institutional location of these interdisciplinary centers between rather than within traditional academic departments rendered them dependent on external funding, giving their patrons — first the Ford Foundation and the Population Council and then the U.S. government — substantial leverage over the research that would be carried out in these centers. I also demonstrate that the Ford Foundation and the Population Council funded the training of demographers from the global south to produce indigenous support for the economic overpopulation discourse and advocacy for the establishment of government family planning programs.

The second section explores the substance of demography research during this period,

first by examining the content of the two major English-language demography journals in the postwar period, and then by exploring two fertility surveys in depth, one in the mainland U.S. and the other in Puerto Rico. I argue that the influence of demography's funders focused its practitioners' research on fertility in the global south, promoted the use of quantitative methods, and encouraged an individual-level economic view of fertility that was tractable to analysis with quantitative methods. I demonstrate that, while the U.S. study aimed simply to assess childbearing intentions to improve population projection and planning *for* population, the Puerto Rico study also aimed to influence childbearing practices, specifically to promote the use of birth control to produce small families, thereby engaging in the planning *of* population.

The final section examines how the Population Council — both a patron and client of demography in this period — utilized the research it funded to secure international support and legitimacy for its population control project. I discuss the development of new systemic contraceptive methods at the end of the 1950s and the beginning of the 1960s, the Council's faith in these methods — particularly the IUD — as technologies that could stimulate modernization by reducing fertility — and the Council's use of a new survey program — Knowledge, Attitudes, and Practices (KAP) of Contraception — to lobby for government provision of family planning programs throughout the global south. In this section, however, I also demonstrate that the Population Council's individual-level economic view of “the population problem” and its solution was not monolithic, exploring an alternative vision proffered by Berkeley demographers Kingsley Davis and Judith Blake.

5.1 The Expansion of Demography in the U.S. and the Global South

In 1961, after some prompting from the staff of the Population Council, the Ford Foundation began making grants to establish population research and study centers at U.S. universities,

following the model of OPR. The focus of research at these centers was to be fertility, particularly its reduction in the global south. Recognizing that these centers would recruit an international body of students and produce research that would have an audience of international policymakers, the Ford Foundation placed them at some of the most prestigious U.S. research universities, beginning with the University of Pennsylvania, the University of Michigan, the University of Chicago, Cornell University, the University of North Carolina, the University of California at Berkeley, the Johns Hopkins University, and Harvard University.¹ By the end of the decade, when the U.S. government began to take over the funding of population research, the Ford Foundation had established 12 population research centers at U.S. universities (some universities, including the University of Chicago and the University of Michigan, boasted two centers) and about half that number at universities in the global south.² These centers trained an international cadre of population experts who published their findings in new demography journals, staffed government statistical offices, and oversaw family planning programs. Demography offered lucrative and exciting careers, and those who chose it provided critical scientific support and legitimacy to the economic overpopulation discourse and programs to control population growth worldwide.

5.1.1 Population Studies Centers and Demography Careers in the United States

Several of the U.S. universities at which the Ford Foundation established population studies centers already had strong programs in population research. Two of these, the University of Chicago and the University of Michigan, play a particularly prominent role in this chapter and in the broader history of demography. Frank Notestein, the first director of Princeton University's Office of Population Research, is often considered the father of demography;

¹Harkavy, see n. 108, 41; Caldwell and Caldwell, see n. 109, 69; Ronald Freedman, "The Program of the University of Michigan Population Studies Center," Sept. 1, 1961, folder 251, box 15, record group IV3B4.2.

²Caldwell and Caldwell, see n. 109, 2.

indeed, he is the first university faculty member to have held the title of demographer.³ However, the field's intellectual genealogy can be traced back to Franklin Giddings, one of the founders of sociology and a pioneer of quantitative social research (Notestein was a student of Giddings's student Walter Willcox). As discussed in Chapter Two, Giddings was the first full professor of sociology at Columbia University and in the United States, and trained many students who would go on to become demographers. One such student was William Fielding Ogburn, research director of the Recent Social Trends project described in Chapter Two, who became chair of the Department of Sociology at the University of Chicago in 1927. Ogburn's quantitative approach was at odds with the reigning "Chicago School of Sociology," which took a qualitative approach focused on urban ecology. Both traditions, however, provided foundations for demography.

Demographers trained at Chicago in the Giddings/Ogburn tradition included Philip Hauser, who would later become the director of the Ford-funded Population Research and Training Center at the University of Chicago, and Ronald Freedman and Otis Dudley Duncan, who would become the director and associate director of the Ford-funded Population Studies Center at the University of Michigan. Demographers trained in the urban ecology tradition also established Michigan connections, with Roderick McKenzie, a former student of Robert Park and Ernest W. Burgess at Chicago, becoming a professor of sociology at the University of Michigan in 1941. At Michigan, McKenzie trained urban ecologist Amos Hawley, who trained demographer Donald Bogue, who would later direct the University of Chicago's second Ford-funded population center, the Community and Family Studies Center. These intellectual lineages intersected one another: Bogue also studied with Ronald Freedman at the University of Michigan, and Duncan's work was heavily influenced by the Chicago School's urban ecology approach. The career trajectories of Hauser, Freedman, and Bogue illustrate typical paths through the field of demography at the time, as well as the in-

³Warren Thompson and Pascal Whelpton, demographers at the Scripps Foundation for Research in Population Problems, housed at Miami University in Ohio, were not faculty members and did not train students, though many students from the University of Chicago and the University of Michigan worked on Scripps projects as part of their training.

stitutional connections between academic population centers, government statistical offices, and the Ford Foundation and Population Council.

Born in Chicago in 1909, Hauser received all of his training in sociology at the University of Chicago, completing the Ph.D. in 1938. He worked at the U.S. Bureau of the Census from 1938 to 1947, forming part of the Census Bureau's legendary "Class of 1940," discussed in Chapter Two.⁴ While at the Census Bureau, Hauser helped to develop the Current Population Survey, which, along with the Census, has become an important source of social scientific data in the United States.⁵ In 1947, Hauser left the Census Bureau to become professor of sociology and director of the Chicago Community Inventory at the University of Chicago, which became the Population Research and Training Center when Hauser received a Ford Foundation grant in 1962. Hauser continued to address his work to popular and policy audiences, and became one of the few academic demographers to adopt Hugh Moore's phrase "the population explosion," introduced in Chapter Four. In 1960, Hauser gave a series of public lectures at the University of Puget Sound, later published as a book titled *Population Perspectives*, in which he argued that "the adverse effects of explosive population increase on the efforts of the underprivileged people of the world to achieve higher levels of living are producing explosive world political problems."⁶ In 1963, Moore proposed "The Population Explosion" as the theme for a meeting of the American Assembly, a program at Columbia University that periodically brought prominent Americans together with experts in various fields to discuss pressing social issues. On Moore's recommendation, Hauser was asked to prepare the steering materials for the meeting, which he solicited from prominent demographers — including Ansley Coale and Irene Taeuber at OPR and Frank Notestein and Dudley Kirk at the Population Council — and which were published afterward under the title *The Population Dilemma*. This meeting — which was funded by the Population

⁴The Census Bureau's "Class of 1940" included Henry Shryock, Jr., OPR's first research associate, and John Durand, OPR's first graduate fellow., see n. 116, 34; Henry Shryock, Jr., a fellow member of the "Class of 1940," attributes the professionalization of the Census Bureau to the Great Depression, when many statisticians and other social scientists were out of work., see n. 116, 84.

⁵See n. 116, 36.

⁶Philip M. Hauser, *Population Perspectives* (New Brunswick: Rutgers University Press, 1961), 4.

Council, the Ford Foundation, and the Laurel Foundation — helped to produce consensus among demographers, businessmen, policy makers, and the American public about the need for population control in the global south.⁷ Hauser remained at the University of Chicago until his retirement in 1979. During that time, he served as the first U.S. representative to the U.N. Population Commission and served as a consultant to the U.N. and the Population Council on population education and family planning programs throughout the global south, including Burma (Myanmar), Indonesia, Malaysia, the Philippines, Singapore, South Korea, and Thailand. Hauser served as president of the PAA in 1950-1951 and of the American Sociological Association in 1967-1968.⁸

Freedman was born in Canada in 1917, but raised largely in Waukegan, Illinois. He completed a B.A. in history and economics in 1939 and an M.A. in sociology, both at the University of Michigan. He completed his Ph.D. in sociology at the University of Chicago in 1947 (after serving in the military during World War II), and returned to the University of Michigan as a faculty member, where he remained until his retirement in 1987. In the late 1940s, he collaborated with Pascal Whelpton at the Scripps Foundation on analysis of data collected for the Indianapolis Study, discussed in Chapter Two. At the University of Michigan, Freedman was affiliated with the Survey Research Center, where he helped to establish the ongoing Detroit Area Study, and founded the Michigan Population Studies Center in 1961, with funding from the Ford Foundation. The Center carried out numerous fertility surveys and family planning studies overseas, with support from both the Ford Foundation and the Population Council. Through these studies, Freedman helped to promote demographic transition in Taiwan, as will be discussed later in this chapter.⁹ He served as president of the PAA in 1964-1965.

⁷The Laurel Foundation was established in 1951 by Cordelia Scaife May, one of the heirs to the Mellon fortune. May was an environmentalist and anti-immigrationist who also contributed generously to the Population Council and to Moore's organizations.

⁸See n. 116, 33.

⁹Ronald Freedman and John Y. Takeshita, *Family Planning in Taiwan: An Experiment in Social Change* (Princeton: Princeton University Press, 1969); Ronald Freedman, *Observing Taiwan's Demographic Transition: A Memoir* (Ann Arbor: Population Studies Center, University of Michigan, 1998).

Bogue completed a B.A. in sociology at the State University of Iowa in 1939 and an M.A. in sociology at Washington State College in 1940. He enrolled in the sociology Ph.D. program at the University of Michigan after serving in the military during World War II. While studying urban ecology under Amos Hawley, he also carried out demographic research as a research assistant at the Scripps Foundation, focusing on internal migration and metropolitan structure in the U.S. In 1953, Hauser recruited Bogue to be the Associate Director of the Chicago Community Inventory. Soon thereafter, Bogue spent a year at a U.N. population research and training center (funded by the Population Council - more below) in Chembur, India. While there, he came to accept the Population Council's explanation of poverty in the global south. As he described in a 1989 interview, "I saw the fertility problem in its stark reality and became intensely interested in it as a population problem and began working with the people of the Indian family planning association," believing that "the population problem" could be readily solved by establishing family planning clinics and convincing people to use them.¹⁰ When he returned to Chicago, Bogue began to study social psychological "theories of inducing behavior change — theories of persuasion, motivation, attitude change theory — trying to apply this to the problem of fertility control."¹¹ He took over the University of Chicago's Family Study Center (originally established by Ernest Burgess in 1947) with a grant from the Ford Foundation to turn it into the Community and Family Study Center, and focused the Center's research program on experiments in communication to stimulate the uptake of family planning, both in the global south and among the black and Latino residents of Chicago. Bogue continued to teach in the sociology department, but increasingly taught classes on communication, social psychology, and social change.¹²

Prior to the establishment of population studies centers, most courses on population

¹⁰"Donald J. Bogue, Interview with Jean Van Der Tak for the PAA Oral History Project," Mar. 30, 1989, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1961-76.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1961-76.pdf, 41.

¹¹Ibid., 41-42.

¹²Ibid., 43.

dynamics were taught in sociology or economics departments, and many dealt with U.S. issues, notably internal migration and labor market composition. Other than at Princeton, few graduate students in sociology or economics focused their research on population, and many of those who did went on to careers with the Census Bureau or the United Nations. Between 1931 and 1960, 26% of the PAA's presidents worked for the U.S. government or the U.N., as compared to 15% over the remainder of the century.¹³ The establishment of the population studies centers created more jobs for faculty with research interests in population, especially formal (mathematical) demography and fertility in the global south. Most universities never established demography departments, so population studies faculty continued to hold tenure in departments of sociology, economics, or epidemiology, though their offices were usually in a separate physical space. As a result, population studies faculty typically had more interaction with one another, even though they may have been from different departments, than they had with members of their own home departments.¹⁴

The University of California at Berkeley was the notable exception to this pattern, though its first department of demography was short lived.¹⁵ Kingsley Davis relocated from Columbia University to Berkeley in 1955 as a professor of sociology, accompanied by his wife and former student Judith Blake. In 1956, with funding from the Ford Foundation, Davis established Berkeley's International Population and Urban Research program, which housed research projects on urbanization and land and resource use worldwide.¹⁶ In 1965, Davis and Blake together created Berkeley's Graduate Group in Demography, which became the Department of Demography in 1967. The department disbanded in 1972 as a result of internal strife and

¹³<http://www.emilyklancher.com/digdemog/paa/paafields.html>.

¹⁴Greenhalgh, "The Social Construction of Population Science: An Intellectual, Institutional, and Political History of Twentieth-Century Demography," see n. 20.

¹⁵In the 1960s, the University of Pennsylvania developed a Ph.D. program in demography through its Population Studies Center, but never created a department of demography. Caldwell and Caldwell, see n. 109, 67.

¹⁶The grant for this center was separate from the Ford Foundation's population center program of the 1960s. Research focused on urbanization and resource use rather than fertility per se. "Kingsley Davis, Interview with Jean Van Der Tak for the PAA Oral History Project," May 1, 1989, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1961-76.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1961-76.pdf.

lack of funding.¹⁷ In a 1989 interview, Davis reported substantial animosity among fellow PAA members toward his department because “it wasn’t the way they’d done things. They all had Ph.D.s in some other field,” and worried that their credentials would be depreciated by the existence of Ph.D.s specifically in demography.¹⁸ Davis had a somewhat different intellectual background than the other demographers in his generation, having studied sociology at Harvard University with Talcott Parsons and Pitirim Sorokin, whose work focused on systemic and structural explanations of individual behavior. This training likely inspired Davis and Blake’s strong critiques of the Population Council’s individual-level approach to population control, which will be discussed in the final section of this chapter.

The new population research centers emphasized demography’s quantitative orientation. Contemporaries have described the physical space of a typical population research center as “characterized by its piles of questionnaires, its boxes of punched cards, its computing equipment, and its seminar room.”¹⁹ The expansion of the field coincided with the rise of computing in universities, and demographers — along with political scientists — were some of the first social scientists to use university mainframe computers for their research. Population studies centers were also known for large-scale collaborative research projects employing large technical staffs, such as the fertility surveys that will be discussed in the following section.

Demography’s quantitative focus protected the field from external critique, as training in the quantitative methods of population became a prerequisite for judging scholarship. It insulated the field from the changing theoretical orientations of the other social sciences, as demographic training focused on method rather than theory, and reinforced the idea that population growth was a biological problem with a technological solution.²⁰

¹⁷Very little information seems to be available on this. See: see n. 16; “Judith Blake, Interview with Jean Van Der Tak for the PAA Oral History Project,” May 4, 1989, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1977-93.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1977-93.pdf.

¹⁸See n. 16.

¹⁹Caldwell and Caldwell, see n. 109, 60.

²⁰Greenhalgh suggests that this may have been how demographers “missed the critiques of modernization theory that swept through development studies in the late 1960s and 1970s,” and argues that any critiques

While Susan Greenhalgh has described the highly quantitative nature of demography as a factor keeping would-be practitioners out of the field, interviews with past PAA presidents suggest that it also attracted many people into the field. Notestein and Coale, for instance, were drawn to demography because it was more mathematical at the time than other subfields of economics. As Notestein explained of his decision during graduate school to focus on population,

suddenly it dawned on me that births, deaths, movement of homes, marriage, these were vital events, that everything in the economy and society focused on it. And it had a central core of arithmetic, mathematical rigor... It was an exciting way of looking at the world. I'm afraid it wasn't from a reformist point of view that I got into it; just the sheer joy of watching the variables behave.²¹

While many demographers — including Notestein, Hauser, and Bogue — did aim to improve the world through their research, it was the satisfaction of working with data and models that originally drew them into the field. As a graduate student in sociology at Columbia, Judith Blake chose demography as her subfield because, compared to other areas of sociology, demography was “awash in data.”²² While Blake did go on to produce highly original and groundbreaking research, demographers in general have been described as having “conventional personalities” and feeling “most comfortable writing quantitative papers that make incremental contributions to previous literature,” contributing to conformity and consensus within the discipline.²³

The quantitative nature of demography seems in particular to have attracted women with strong mathematical backgrounds into the field. Some of the most prominent female demographers of the twentieth century had undergraduate or graduate degrees in mathematics or

that did make their way to demographers “might perhaps have been stifled by their close contacts with the family planning world, which held certain truths, in particular, its assessment of the seriousness of the global population problem and the correctness of the family planning solution to it, to be beyond question.” Greenhalgh, “The Social Construction of Population Science: An Intellectual, Institutional, and Political History of Twentieth-Century Demography,” see n. 20, 47.

²¹See n. 59, 15.

²²See n. 17, 95.

²³Avery Guest, “Gatekeeping Among the Demographers,” in *Editors as Gatekeepers: Getting Published in the Social Sciences*, ed. Rita J. Simon and James J. Fyfe (Rowman and Littlefield, 1994), 87.

biostatistics, including Mindel Sheps, Margaret Hagood, Jane Menken, Barbara Anderson, and Evelyn Kitagawa. Female demographers in academia faced the same discrimination as did women in other fields. Princeton did not admit women to its graduate programs until the late 1960s. In contrast to the University of Chicago, which had a longer history of admitting female graduate students, the first female OPR student to earn a Ph.D. was Leela Visaria in 1972, followed by Barbara Anderson and Hilary Page in 1973. Yet few of the women who completed Ph.D.s became faculty members during this period. Dorothy Thomas, who earned her Ph.D. at the London School of Economics in 1924, became the first female professor at the University of Pennsylvania's Wharton School in 1948, and became co-director of the University of Pennsylvania's Population Studies Center when it was established in 1962 with a grant from the Ford Foundation.²⁴ Judith Blake followed Davis to Berkeley, but lectured in the nursing school at U.C. San Francisco until she was able to get a faculty position at Berkeley, first in the School of Public Health in 1962 and then in the short-lived Department of Demography, which she helped to found in 1967. Several other female demographers, including Irene Taeuber, Jane Menken, Mindel Sheps, and Beverly Duncan, held research associate positions in academic population centers.²⁵ Others, including Margaret Hagood and Hope Eldridge, worked for the Census Bureau or the United Nations (or both, as in the case of Eldridge). Possibly because demography focused on large research projects and because there were ample job opportunities for demographers in government, where gender discrimination for research positions was less intense than in academia, women were able to participate in demography at higher rates than in other subfields of sociology, economics, and statistics. Between 1931 and 2006, 17% of PAA presidents were women, as compared to 9% of presidents of the American Sociological Association and the American Statistical Association, and 2.5% of presidents of the American Economic Association.²⁶

In addition to funding faculty posts, the Ford Foundation and the Population Council

²⁴Thomas had been married to Chicago School sociologist W.I. Thomas, another link to this intellectual tradition.

²⁵Menken became a lecturer at OPR in 1977 and a professor in 1980.

²⁶<http://www.emilyklancher.com/digdemog/paa/paaexp.html>.

also provided generous fellowships for graduate students studying demography, following the lead of the Milbank fellowship program described in Chapter Two and extending the model beyond Princeton. In its first five years, the Population Council provided fellowships to 69 students from 21 countries.²⁷ Princeton and the Universities of Michigan and Chicago were major hubs for Population Council fellows, and major loci of training for U.S. demographers who went on to work in academia, government, and nongovernmental organizations. Throughout the 1960s, there were more jobs available for demographers than there were people qualified to fill the positions, so graduate students in sociology or economics could be assured that studying population would both fund their education and lead to employment afterwards.²⁸ Although the Ford Foundation offered more financial support to university population studies centers and their students than did the Population Council, the influence of the Council went far beyond financial support and graduate fellowships. In 1971 demographer Paul Demeny, then director of the Population Institute at the East-West Center in Hawaii, and a former Population Council fellow, stated that his center received minimal funding from the Population Council. Nonetheless,

the Council's influence is present in every facet of our work from abundant use of Council publications in training to continuously encountering Council-supported programs and projects in our contacts in Asia. Former Council Fellows include not only the Director, but also the Assistant Director for Professional Study and Training, the Assistant Director for Institutional Cooperation, and two additional members of the Institute's research staff. Our support does not come from the Council, but without the Council our Institute would probably never have existed.²⁹

The reliance of population research centers — and the field of demography more broadly — on external funding from the Ford Foundation and Population Council gave these patrons

²⁷“Present Activities and Future Needs of the Demographic Division,” 1958, folder 40, box 4, record group IV3B4.2.

²⁸Ansley J. Coale, “Memo,” Oct. 26, 1964, box A82, series 200s, record group 1.1; “Notes on JDR's Memo: Population Council Program - New Items and Items for Increased Emphasis,” 1960, folder 41, box 4, record group IV3B4.2.

²⁹Paul Demeny to August Schou, Nov. 23, 1971, “Nobel Prize, September 1971 - 1973,” box AD25, accession 2.

considerable power to shape the research demographers would perform, as I will explore at greater length later in this chapter.

5.1.2 Population Studies Centers and Demography Careers in the Global South

As discussed in Chapter Four, the legitimacy of population control programs sponsored by U.S.-based organizations required that the citizens and governments of the countries in which they operated welcome those programs as the solution to a perceived problem of population growth. The final section of this chapter examines how the Population Council used fertility surveys to demonstrate a demand for family planning services among denizens of the global south. This section examines how the Population Council and the Ford Foundation, through funding the training of students from the global south at population research centers in the U.S. and establishing population research centers in the global south, created indigenous experts who could explain to their governments why population growth was a problem and how family planning programs could help.

The population research centers described in the previous part of this section recruited students from the global south, many of whom had already worked in government statistical agencies, and many of whom were supported by Population Council fellowships. After completing Ph.D.s in the United States — most studied at Princeton, Michigan, or Chicago — these fellows were expected to return home to staff government statistical agencies, administer family planning programs, or direct population studies centers that the Ford Foundation or Population Council established in local universities. When NIH and USAID began to fund demography research and training in the late 1960s, these agencies also supported the training of students from the global south.

The directors of Princeton's OPR, the University of Michigan's Population Studies Center, and the University of Chicago's Population Research and Training Center viewed the training of students from the global south as a critical part of their centers' missions. Hauser

reported that he began to recruit international students to his program because “what was clear was that the most severe population problems were in the Third World. But in the Third World there was practically nobody who could be called a demographer, who could begin to provide the basic data for policy, which they badly needed.”³⁰ He and his counterparts at Princeton and Michigan aimed to train students who would return to their home countries to serve as “a source of local authority on the population problems of each major country or region of the underdeveloped areas.”³¹ They expected that the students they trained would explain to policy makers in their countries of origin that population growth would prevent economic development, and that family planning programs could stimulate economic growth. Decades later, demographer John Caldwell argued that, through these research and training programs, the Ford Foundation and the Population Council “literally talked down the birthrate” in the global south by stimulating enough anxiety about population growth to lead to the establishment and promotion of family planning clinics, exactly what the participants at John D. Rockefeller III’s 1952 Williamsburg meeting had hoped to do.³²

Hauser’s most prominent international student was Mercedes Concepcion, now known as the “mother of Asian demography.”³³ Her career will serve as an example of demographers from the global south who trained at U.S. population research centers. Prior to studying demography, Concepcion, born in 1928, was a biostatistician at the U.N. Statistical Training Centre at the University of the Philippines. She first met Hauser in 1955, when he spoke on population at the Philippine Statistical Association. Later that year, the Director of the Statistical Training Centre, an American statistician who had previously worked at the U.S. Bureau of the Budget, recruited Concepcion to attend the U.N. Seminar on Population Problems in Asia and the Far East, held in Bandung, Indonesia and sponsored by the Popu-

³⁰See n. 116, 40.

³¹See n. 27.

³²Caldwell and Caldwell, see n. 109.

³³“Mercedes Concepcion, Interview with Rebecca Sharpless for the Population and Reproductive Health Oral History Project,” Aug. 17, 2004, Sophia Smith Collection, Smith College, Northampton, MA, URL: <http://www.smith.edu/libraries/libs/ssc/prh/transcripts/concepcion-trans.pdf>.

lation Council.³⁴ The seminar, which lasted ten days, included statisticians and economists from nearly every country in East Asia, who attended not because they believed population growth to be a problem in their countries, but rather to learn from U.S. demographers why population growth was problematic.³⁵ A few years later, Dudley Kirk, then Demographic Director of the Population Council, offered Concepcion a fellowship to study demography in the U.S. Because Princeton was not yet admitting women to Ph.D. programs, Concepcion went to the University of Chicago to study with Hauser.³⁶ After she finished her degree in 1964, the Ford Foundation, acting on the recommendation of Hauser, Kirk, and Oscar “Bud” Harkavy, director of the Ford Foundation’s population programs, established the Population Institute at the University of the Philippines and appointed Concepcion its director.³⁷

Concepcion’s career was exceptional but not unique. In the same year that the Ford Foundation established the Population Institute at the University of the Philippines, it also founded the College of Population Studies at Chulalongkorn University in Bangkok, under the direction of one of Bogue’s former Chicago students, Visid Prachuabmoh. Later in the 1960s, the Foundation established a population center at the University of Indonesia under the direction of Nathaniel Iskandar, who had studied demography with Ansley Coale at Princeton.³⁸ In the mid-1980s, Kirk reported that over a third of the “leading demographers in less developed countries” had attended graduate school in the U.S. as Population Council fellows.³⁹ In 1971, Coale reflected that, when he carried out his landmark study with Edgar Hoover on the relationship between population growth and economic development, “we found few expert demographers in India and Mexico and fewer social scientists in other disciplines who had an expert knowledge of population.” Since then, he continued, the field had grown immensely, and “an impressive fraction of the best of these [new] demographers — in the United States and in the less developed countries — were trained as Population Council

³⁴See n. 33, 5.

³⁵Ibid., 8.

³⁶Ibid., 6-7.

³⁷Ibid., 13.

³⁸See n. 33, 14; see n. 10, 41.

³⁹See n. 114, 120.

fellows.”⁴⁰

In the late 1960s, with the encouragement of the Ford Foundation, the NIH began to take over the funding of population centers at U.S. universities. At the international universities, the Ford Foundation made initial multi-year grants to establish population research centers, but made continuation grants dependent on matching funds from within the country, which further incentivized center directors and faculty to bring their work to the attention of local governments.⁴¹ Initially, the core faculty of population studies centers in the global south were educated in the global north — mostly in the U.S. — and taught largely from texts produced in the U.S. Demography students in the global south were therefore trained to analyze population through the theories, models, and ideologies developed by demographers and their funders in the global north, much as Marion Fourcade has described for the field of economics during the same period.⁴²

In addition to the university population centers funded by the Ford Foundation, the Population Council funded the establishment of demographic research and training centers under the aegis of the U.N., beginning in 1956 in Chembur, India, and continuing with centers in Santiago, Chile in 1957 and Cairo, Egypt in 1963.⁴³ These centers, which focused on training government demographers to promote and facilitate census taking and vital registration in the surrounding regions, hired local directors but included U.S.-based demographers (from both universities and government) as consultants.⁴⁴ The Population Council provided demography textbooks and monographs published in the U.S. to research centers and universities in the global south, sometimes translating them into local languages.⁴⁵

In general, both Ford and U.N. population centers in the global south seem to have met

⁴⁰Ansley J. Coale to August Schou, Oct. 29, 1971, “Nobel Prize, September 1971 - 1973,” box AD25, accession 2.

⁴¹See n. 33, 14.

⁴²Fourcade, see n. 134.

⁴³Caldwell and Caldwell, see n. 109, 47; “Principal Activities in India of the Demographic Division, The Population Council,” 1959, folder 40, box 4, record group IV3B4.2.

⁴⁴Bogue and Dorothy Thomas both served as consultants to the Chembur center in the 1950s., see n. 116, 86.

⁴⁵See n. 28.

the aims of their funders.⁴⁶ Mercedes Concepcion, as director of the population center at the University of the Philippines, organized conferences of prominent demographers and policy makers and placed articles about population growth in the local daily newspapers, leading to the formation in 1968 of a government committee to “study the population problem with the idea of recommending a policy to the president,” which Concepcion also directed. The influence of the Population Council is evident in the committee’s final report, which, as Concepcion described informally many years later, urged that “we need to undertake a program of family planning so that each Filipino could partake of the fruits of national progress.”⁴⁷ In 1971, President Ferdinand Marcos signed the proposed policy into law, creating family planning programs supported with funds from the U.S. Agency for International Development (USAID) and the U.N. Fund for Population Activities (UNFPA).⁴⁸ Frederick Osborn credited the research of Carmen Miró, a Panamanian demographer who studied in the U.S. as a Population Council fellow and became the first director of the *Centro Latinoamericano de Demografía* (CELADE), the U.N. population center in Santiago, with promoting the acceptance of birth control in Latin America and making the leaders of the Catholic Church receptive to consideration of population control measures.⁴⁹

Although demography never became a stand-alone discipline — even today, most people who identify as demographers have degrees in sociology, economics, or epidemiology — the system of population studies centers encouraged demographic scholarship to develop as a unique and identifiable interdiscipline.⁵⁰ However, the establishment of population research centers kept demography relatively insular, even as it expanded. It remained a close-knit field whose practitioners knew one another and whose patrons and clients attended its annual

⁴⁶See n. 27.

⁴⁷See n. 33, 16.

⁴⁸See n. 33, 17; As late as 2004, the majority of contraceptives in the Philippines came from USAID., see n. 33, 36.

⁴⁹Rockefeller Foundation, see n. 104, For the book, I will explore the writings of Miró and Concepcion in greater depth to examine how they countered Catholic opposition and how they both adopted and adapted demographic theory and overpopulation discourses from the United States.

⁵⁰Joe Mayone Stycos, who studied with Davis at Columbia, coined the word “interdiscipline” to refer to demography. J. Mayone Stycos, ed., *Demography as an Interdiscipline* (Transaction, 1989).

meetings. Between 1963 and 1979, all of PAA's 15 presidents had been trained in one of six population studies centers (two at Michigan, five at Chicago, two at Princeton, one at Wisconsin, four at the University of Pennsylvania, and one at North Carolina).⁵¹ Even today, PAA meetings have been described as “a big family reunion, with the different major demographic centers being various wings of the family, and most participants claiming some relationship to the major demographic centers.”⁵² The insularity of the field, its institutional concentration in a small number of population research centers, and its dependence on external funding – first from the Population Council and the Ford Foundation and then from the NIH and USAID — contributed to the field's focus on fertility in general and on family planning in the global south in particular, which will be described at greater length in the following section.

5.2 The Content of Postwar Demography

Under the influence of its postwar patrons, demography focused narrowly around questions of fertility, mainly how to reduce it in the global south. This section examines that research. I begin with an overview of the contents of demography's two major English-language journals, using topic modeling to assess the relative prevalence of fertility and other themes over this period. I demonstrate that demography focused increasingly on fertility research after the establishment of the Population Council. I then explore two prominent fertility surveys through examination of their data, documentation, and publications.

5.2.1 Demography's Journals

Demography's first journal, *Population*, published by the International Union for the Scientific Investigation of Population Problems (IUSIPP), was suspended when World War II began and never resumed publication. *Population Index*, published by the PAA begin-

⁵¹<http://www.emilyklancher.com/digdemog/paa/paafields.html>.

⁵²Guest, see n. 23, 88.

ning in 1935 (originally under the title *Population Literature*) was mainly a bibliography of population-related studies published elsewhere and a newsletter for the PAA. In the twenty years after World War II, three new population-oriented journals appeared. *Population*, a French-language journal, was established in 1946 by France's *Institut National d'Études Démographiques* (INED). In 1947, a grant from the Rockefeller Foundation allowed David Glass, director of Britain's Population Investigation Committee (PIC) to launch *Population Studies*.⁵³ Although it was based in the U.K., *Population Studies* was an explicitly international journal. Glass was chief editor, but recruited Frank Notestein of OPR, P.C. Mahalanobis of the Indian Statistical Institute, C.E. Quensel of Lund University in Sweden, and Alfred Sauvy of INED to serve as "foreign editors." The PAA established *Demography* in 1964 under Donald Bogue's editorship, with a grant from the Ford Foundation.

A comparison of the contents of *Population Studies* and *Demography* using topic modeling (latent dirichlet allocation) indicates some of the ways in which the emphasis of the field shifted in the early 1950s after the establishment of the Population Council in 1953 and the simultaneous involvement of the Ford Foundation in demography.⁵⁴ In its first ten years, *Population Studies* emphasized research on Europe, including historical research, and work on demographic transition and other social theories. During that period, the journal devoted less than 5% of its content to topics related to the global south and another 5% to fertility, suggesting that fertility — particularly in the global south — was not an emphasis of demographic research prior to the mid-1950s. After that point, the share of the journal devoted to fertility rose to a high of 28% in 1962. By contrast, mortality was confined to less than 10% of the journal's content until 2002, and the share devoted to migration fell from 9% in 1950 to 2% in 1985.⁵⁵ Established in 1964, *Demography* devoted roughly 20%

⁵³"The Rockefeller Foundation: Annual Report," 1944, URL: <http://www.rockefellerfoundation.org/uploads/files/5c0d2a57-e060-4898-8d8f-2bee553f867d-1949.pdf> (accessed 07/23/2014), URL: <http://www.rockefellerfoundation.org/uploads/files/5c0d2a57-e060-4898-8d8f-2bee553f867d-1949.pdf> (accessed 07/23/2014), 274-275.

⁵⁴The method and results are discussed in greater detail at <http://www.emilyklancher.com/digdemog/tmod/topicmod.html>.

⁵⁵<http://www.emilyklancher.com/digdemog/tmod/topjournal.html>.

of its content to fertility and family planning right from the start, with an additional 25% devoted to surveys (mainly fertility surveys) and censuses.⁵⁶ Migration never comprised more than 10% of the content of *Demography* and, prior to 1985, mortality never exceeded 5% of journal content. Between 1955 and 1983, *Population Studies* and *Demography* published more than twice as many articles concerning fertility as they did concerning mortality and migration combined. Yet, despite this focus on fertility, the field of demography largely eschewed research on gender and sexuality, even as these became legitimate areas of inquiry in demography's neighboring disciplines.⁵⁷

The share of space in the two journals devoted to mortality rose in the 1990s as population aging in the global north made mortality a more pressing concern, but only exceeded the share devoted to fertility in the early twenty-first century. Mortality was little discussed by demographers during the first few postwar decades because demographers and their funders perceived mortality as a problem that had largely been solved, giving rise to the new problem of rapid population growth. With the exception of internal migration within the U.S., which was much researched by both academic and government demographers during the 1940s and 1950s, migration has received little attention from demographers and its share of space in *Population Studies* and *Demography* has remained miniscule. In his 1960 address to the PAA, Dudley Kirk described migration as "the stepchild of demography," a revealing metaphor in a discipline that takes the family as a major object of analysis.⁵⁸ Sidney Goldstein, addressing the PAA as president in 1976, ten years after the United States re-opened its doors to large-scale immigration, suggested that this characterization was still valid.⁵⁹

⁵⁶<http://www.emilyklancher.com/digdemog/tmod/topjournal.html>.

⁵⁷Greenhalgh, "The Social Construction of Population Science: An Intellectual, Institutional, and Political History of Twentieth-Century Demography," see n. 20; Susan C. Watkins, "If All We Knew About Women Was What We Read in Demography, What Would We Know?" *Demography* 30, no. 4 (1993): 551–577.

⁵⁸Dudley Kirk, "Some Reflections on American Demography in the Nineteen Sixties," *Population Index* 26, no. 4 (1960): 307.

⁵⁹There are numerous reasons for the marginalization of migration within demography. To begin with, there was very little funding for migration research. The leadership of the Population Council and the Ford Foundation explicitly opposed considering immigration as a solution to the global "population problem," and concentrated their organizations' resources on research (and action) to control fertility. Data on migration were also notably sparse. Most countries do not gather statistics on emigration. While immigration is more commonly documented, it is only half of the story, and is also difficult to track, particularly in the

This content analysis suggests the role of the Population Council and the Ford Foundation in shaping the content of these two journals. However, the history of *Demography* also suggests that the influence of the journal's funders was limited. Donald Bogue, one of the founders of *Demography*, served as the journal's editor for its first four years. His final issue as editor was a special issue titled "Progress and Problems of Fertility Control Around the World," which included articles by Bud Harkavy, head of the Ford Foundation's population program, Frank Notestein, who was then president of the Population Council, and Reimert Ravenholt, director of USAID's recently-established Office of Population, in addition to articles assessing family planning programs in every region of the global south and among poor Americans. This issue produced considerable anxiety among PAA members, who feared that it indicated too much control of the field by its funders. Bogue was subsequently replaced as editor by Beverly Duncan, a University of Michigan demographer trained in urban ecology at the University of Chicago (and wife of Otis Dudley Duncan), and the PAA began to exercise greater control over the journal's content. Duncan's work was strongly quantitative and focused on urban demography and social inequality and mobility in the United States. Under her editorship, the proportion of articles using regression and other forms of multivariate analysis increased dramatically, as did the share of articles dealing with such U.S. social issues as race relations, educational attainment, urbanization and suburbanization, while the share dealing with fertility surveys in the global south (described in the following part of this section) declined considerably.⁶⁰

Even before Duncan took over as editor, *Demography* had a strongly quantitative emphasis, as did *Population Studies*, reflecting the quantitative orientation of the field as a whole and of the Ford-funded centers in particular, as described above. Since its establishment,

case of undocumented immigrants and those who overstay visas. Intercensal differences, once mortality is accounted for, offer an estimate of net migration between censuses, but this figure masks the actual volume of immigration and emigration, and renders circular migration invisible. For discussion of this method of estimating immigration, and the problems therein, see Brian Gratton and Emily R. Merchant, "Immigration, Repatriation, and Deportation: The Mexican-Origin Population in the United States, 1920-1950," *International Migration Review* 47, no. 4 (2013): 94-975; Sidney Goldstein, "Facets of Redistribution: Research Challenges and Opportunities," *Demography* 13, no. 4 (1976): 425.

⁶⁰<http://www.emilyklancher.com/digdemog/tmod/topjournal.html>.

Population Studies has devoted roughly 30% of journal space to the language of quantitative analysis; for *Demography* this figure is around 50%.⁶¹ A later editor of *Demography* has described the journal as being shaped by the field's dense social network of practitioners and reflective of a strong consensus within the field regarding what constituted important substantive issues and valid approaches. Even in the mid-1990s, he contended that it was well known among members of the PAA that "specific candidates for editor will only be selected if they view demography as fundamentally a scientific profession (and reject political activism in their professional roles)."⁶² During the period discussed here, "scientific" scholarship meant quantitative.

5.2.2 Fertility Surveys in the 1950s

Fertility was at the center of demography research in the 1950s and 1960s. With funding from the Population Council, the Ford Foundation, and USAID, U.S. demographers and demographers in the global south developed the fertility survey — first conducted in Indianapolis in 1941, as described in Chapter Two — into a routine tool of demographic research and fertility intervention. These surveys used questionnaires to examine fertility behavior and contraceptive attitudes worldwide, and experimental family planning interventions to directly reduce fertility in the global south and among poor and nonwhite Americans. These studies were largely designed by men, despite their focus on women's reproductive experiences, and — as will be argued below — largely sought to separate fertility from sexuality and the gendered division of power in families and societies.

Although fertility studies did not comprise the entirety of the field during this period, they garnered the majority of funding from the Population Council, the Ford Foundation, and USAID. It is in this period that historians of demography have most strongly recognized the field's policy orientation. Demographer Paul Demeny, for example, has characterized the

⁶¹<http://www.emilyklancher.com/digdemog/tmod/topjournal.html>.

⁶²Guest, see n. 23, 89.

population research funded by USAID as “industrial” and a “handmaiden in family planning programs.”⁶³ According to Susan Greenhalgh, in the late 1960s and early 1970s, USAID “put a high premium on research products that could be quantified, standardized, replicated, and packaged for use in countries around the world.”⁶⁴ She argues further that accepting foundation and government funding for their research required demographers to judge their scholarship and that of their colleagues by the funders’ criteria, which privileged measurable impacts over scientific process.⁶⁵ This section examines two fertility surveys in detail, one carried out in the mainland United States in 1955 and the other in Puerto Rico in 1953–1954. Using the publications of these studies as well as their raw data and documentation, I explore their scientific and policy aims, and interrogate the differences between the two studies.

Growth of American Families

In the early 1950s, Freedman, together with Pascal Whelpton at the Scripps Foundation, designed the Growth of American Families (GAF) study, the predecessor of today’s National Survey of Family Growth and the template for fertility surveys and family planning experiments in the global south.⁶⁶ GAF was the first nationally-representative fertility survey, and utilized the infrastructure of the University of Michigan’s Survey Research Center (SRC) to interview a representative sample of married U.S. women. SRC had been founded in 1948 by Rensis Likert, Leslie Kish, Angus Campbell, and several of their wartime colleagues from the U.S. Department of Agriculture’s Division of Program Surveys.⁶⁷ In 1949, SRC and the University of Michigan’s Research Center for Group Dynamics together formed the Institute for Social Research, which now houses the university’s Population Studies Center, as well as

⁶³Demeny, “Social Science and Population Policy,” see n. 23, 464, 466.

⁶⁴Greenhalgh, “The Social Construction of Population Science: An Intellectual, Institutional, and Political History of Twentieth-Century Demography,” see n. 20, 43.

⁶⁵Ibid., 44.

⁶⁶For the National Survey of Family Growth, see <http://www.cdc.gov/nchs/nsfg.htm> (accessed 4/6/2015).

⁶⁷Jean M. Converse, *Survey Research in the United States: Roots and Emergence 1890-1960* (Berkeley: University of California Press, 1987), 340-341.

its Center for Political Studies and the Inter-university Consortium for Political and Social Research.⁶⁸ Over the next few decades, Likert, Kish, Campbell, and their colleagues and students developed and tested the basic methods of survey research that are still used today, from sampling to response scales.⁶⁹ In the late 1940s, SRC researchers launched several ongoing nationally-representative survey programs, including the Consumer Finance Survey (now known as the Survey of Consumers) and the American National Election Study.⁷⁰

The first wave of GAF, carried out in 1955, was funded by the Rockefeller Foundation and the Population Council.⁷¹ GAF surveyed married U.S. women about their contraceptive practices and childbearing intentions to better understand the causes of the baby boom and to improve predictions of future fertility in the U.S. and thereby produce more accurate population projections.⁷² The baby boom and subsequent theoretical research on the mathematics of population size and structure had demonstrated to demographers that, in societies with very low mortality and little international migration — as in the postwar U.S. — fertility was the main factor contributing to population change. The baby boom had also revealed that the spread of contraception did not necessarily lead to uniformly small families, as families can be planned to be any size. The experience of the Great Depression and baby boom had suggested that the increasing availability of contraception allowed couples to adapt their childbearing plans to short-run economic fluctuations, and demographers warned that such practices meant that “‘bulges’ and ‘gaps’ may be created at the bottom of the age structure which seriously affect many aspects of the society as they move

⁶⁸Converse, see n. 67, 341.

⁶⁹Ibid., 367-373.

⁷⁰<http://home.isr.umich.edu/about/history/timeline/> (accessed 6/2/2014).

⁷¹Pascal K. Whelpton to Frederick Osborn, Oct. 7, 1955, folder 338, box 22, record group IV3B4.2, Freedman and Whelpton applied to the Population Council for funds with which to analyze the data they had collected, as they had expended the entirety of the Rockefeller Foundation grant (\$91,835) on data collection; “The Status of the Study of Growth of American Families,” Sept. 30, 1955, folder 338, box 22, record group IV3B4.2; the Population Council’s grant to GAF in the fall of 1955 amounted to \$8500 Ronald Freedman to Frederick Osborn, Oct. 30, 1955, folder 338, box 22, record group IV3B4.2, although the Population Council did not contribute funds to the study until after data were collected, the record of correspondence demonstrates that Population Council leaders, particularly Frederick Osborn and Dudley Kirk, played a substantial role in the design of the study.

⁷²Ronald Freedman, Pascal K. Whelpton, and Arthur A. Campbell, *Family Planning, Sterility and Population Growth* (New York: McGraw-Hill, 1959); Harkavy, see n. 108, 20.

inexorably up the pyramid of ages for the longer life expectancy of modern man.”⁷³ When Freedman typed these words in 1961, observers had already blamed the baby boom for the unexpected rise in the number of school-aged children that had caused overcrowded schools and teacher shortages in the 1950s.⁷⁴ More than forty years later, that “bulge” had begun to near retirement age, threatening to break both private and public pension systems.⁷⁵

Freedman and Whelpton intended that GAF be repeated every five years, generating an empirical basis with which to update U.S. population projections and improve their utility for planning purposes. The conceptualization and design of the 1955 wave shows no intention of influencing fertility behavior, only understanding and predicting it.⁷⁶ Interviewers were explicitly instructed to “maintain, as usual, an impartial attitude on controversial issues,” a category that still included birth control. The instructions distinguished between science and activism, informing interviewers that “we are seeking facts for a scientific study. We do not take a stand for or against family limitation, or for or against a desirable family size.”⁷⁷ In later waves, some questions suggested an effort to increase the acceptability of contraception to respondents, and simultaneous surveys outside the continental U.S. — such as the 1953–1954 study in Puerto Rico described in detail below — explicitly aimed to influence reproductive behavior.⁷⁸

In contrast to the Indianapolis Study, which employed psychological and socioeconomic factors to explain achieved family size, GAF and other postwar surveys focused specifically on socioeconomic factors and on women’s knowledge of and attitudes toward contraception. As discussed in Chapter Two, the psychological measures in the Indianapolis Study had not

⁷³Ronald Freedman, “The Sociology of Human Fertility: A Trend Report and Bibliography,” *Current Sociology* 10 (1961): 36.

⁷⁴“Teachers Needed,” *The New York Times* (Aug. 10, 1959).

⁷⁵Floyd Norris, “As Baby Boom Ages, Era of Guaranteed Retirement Income Fades,” *The New York Times*, Nov. 12, 2004, C1.

⁷⁶“A Memorandum on Population Research at the University of Michigan,” Mar. 2, 1954, folder 294, box 18, record group IV3B4.2; “Instruction Booklet: A Study of the Growth of American Families (Preliminary),” Nov. 5, 1954, folder 337, box 22, record group IV3B4.2.

⁷⁷See n. 76.

⁷⁸Reuben Hill, J. Mayone Stycos, and Kurt W. Back, *The Family and Population Control — A Puerto Rican Experiment in Social Change* (Chapel Hill: University of North Carolina Press, 1959).

yielded any promising results, and Whelpton and Kiser had recommended that future fertility surveys limit the number of covariates they included in order to reduce costs and facilitate analysis. GAF likely focused on socioeconomic factors because the Indianapolis Study had indicated that these factors had the most statistical power to explain variations in family size. The Indianapolis Study had suggested an analogy between childbearing decisions and purchasing decisions, and the design of postwar fertility surveys incorporated this analogy.

Initially, GAF was not truly nationally representative, as it was limited to white respondents (including Mexican American respondents, per U.S. Census classification), but the 1960 wave added nonwhite respondents.⁷⁹ Whelpton and Freedman initially confined the sample to women, citing cost-related limitations. Their intention to add men in later waves indicates recognition that both men and women make childbearing decisions and that, in the 1950s, available contraceptive methods required the cooperation of both partners. However, subsequent waves of the study were also confined to women, suggesting an increasing perception among scientists, their funders, and the public that women were the main agents of reproduction, a view that became more prevalent with the introduction of systemic methods of birth control that women could use without the cooperation or knowledge of their male partners.⁸⁰

In designing the study, Whelpton and Freedman decided not to make it longitudinal, which would have involved re-interviewing the same respondents every five years in addition to adding new women to replace those who aged out of the sample. Instead, they decided to draw an entirely new sample for each wave, so as to protect respondent confidentiality.⁸¹ As a result, what they measured was not whether couples achieved their fertility intentions but whether, on average, a sample of women at age x had the number of kids at time $t + 5$ that a different sample of women aged $x - 5$ had said at time t that they planned to have at time $t + 5$. Such an approach was expected to produce roughly equivalent results and pose

⁷⁹See n. 76.

⁸⁰Freedman, Whelpton, and Campbell, see n. 72, 11.

⁸¹Pascal K. Whelpton and Ronald Freedman, "A Study of the Growth of American Families," *American Journal of Sociology* 61, no. 6 (1956): 596.

less threat to respondents of having their confidentiality inadvertently violated.⁸²

In the early 1950s, respondent confidentiality was an important consideration because GAF asked women detailed questions about their experiences of marriage, childbearing, and contraceptive use, which was still highly controversial in the U.S. and even illegal in some states. Freedman and Whelpton worried that fear of disclosure would prevent respondents from providing truthful — and therefore scientifically valid — answers. By the time of the first wave in 1955, Americans had become accustomed to answering survey questions and to learning about themselves and their neighbors through published survey reports.⁸³ Gallup and Roper polls had begun to question Americans about their attitudes toward contraception in 1936, but had not asked about personal practices.⁸⁴ Sexual behavior had started to become a legitimate topic of survey research with the publication of the Kinsey Reports: *Sexual Behavior in the Human Male* in 1948 and *Sexual Behavior in the Human Female* in 1953. A brief discussion of the Kinsey studies will serve to locate GAF in the context of survey and sexuality research in the mid-century United States and demonstrate how GAF aimed to elicit information about fertility while eliding respondents' sexuality.

Growth of American Families and the Kinsey Reports

Indiana University biologist Alfred Kinsey was not the first scientist to survey American sexual behavior, but he was most well-known in the early 1950s.⁸⁵ His research program was funded by the Rockefeller Foundation through the National Research Committee for Research in Problems of Sex, the same committee through which the Foundation sponsored biomedical

⁸²By the early 1960s, reinterviewing the same respondents no longer seemed to pose the same social threat, and Freedman added a longitudinal study of family size preferences to the Detroit Area Study. "Ronald Freedman, Interview with Jean Van Der Tak for the PAA Oral History Project," June 12, 1989, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1961-76.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1961-76.pdf, 73.

⁸³Igo, see n. 143, 4.

⁸⁴See n. 76.

⁸⁵The earliest known survey of sexual attitudes and practices in the U.S. was carried out between 1892 and 1920 by Stanford University physician Clelia Mosher. Other early studies include *Factors in the Sex Lives of Twenty-Two Hundred Women*, published by Katharine B. Davis in 1929, and *A Thousand Marriages: A Medical Study of Sex*, published by Robert Latou Dickinson and Lura Beam in 1931. Clelia Mosher, *The Mosher Survey: Sexual Attitudes of 45 Victorian Women*, ed. James MaHood and Kristine Wenburg (New York: Arno, 1980); for more on Kinsey, see Igo, see n. 143, 194.

research on reproduction and contraception.⁸⁶ With his Reports, Kinsey aimed to document the full range of human sexual activity, a scientific field that was “more poorly established than the understanding of almost any other function of the human body.”⁸⁷ By reducing sexuality to a bodily function, he also sought to normalize all sexual activities. Kinsey explicitly aimed to make his work available to the general public, which — he felt — had the right to scientific information about sexuality that was not “biased by moral, philosophic, or social interpretation.”⁸⁸ GAF shared the scientific goals of the Kinsey studies, aiming to document the range and variability of childbearing attitudes and contraceptive practices among U.S. women, but also had an explicit policy goal that Kinsey’s studies lacked.⁸⁹ In the first wave, that goal was simply to accurately predict future population and thereby facilitate planning *for* population. In later waves, GAF and its successors also aimed to identify potential policies that would facilitate fertility reduction among some segments of the population: planning *of* population.

Both GAF and the Kinsey studies employed individual face-to-face interviews, with respondents assured complete confidentiality.⁹⁰ However, the different aims of the studies produced stark differences in methods of sampling and interviewing. These differences also corresponded to divergent concepts of representativeness and commensurability applied by the investigators. For GAF and later U.S. fertility surveys, the overriding concern was generalizability: survey results would only prove useful for population projection or policy formulation if they could be generalized to the U.S. as a whole. GAF therefore utilized

⁸⁶Adele E. Clarke, *Disciplining Reproduction: Modernity, American Life Sciences, and “The Problems of Sex”* (Berkeley: University of California Press, 1998); the Ford Foundation’s behavioral science program also recommended a grant to the Kinsey group in the early 1950s, but the Foundation’s board vetoed it, finding Kinsey’s research too controversial Morrissey, see n. 235.

⁸⁷Alfred C. Kinsey et al., *Sexual Behavior in the Human Female* (Philadelphia: W.B. Saunders, 1953), 5.

⁸⁸*Ibid.*, 5.

⁸⁹Kinsey’s studies may have had the implicit policy goal of reducing discrimination against individuals who engaged in non-normative sexual practices, but he proclaimed no explicit policy goals.

⁹⁰Interviewers for both studies recorded responses on paper during the interviews, but those with Kinsey’s team used a code that only the four members of the team could decipher. They found that showing respondents exactly what they were recording (which would have been unintelligible to the respondent him- or herself) helped inspire confidence and presumably elicited more truthful answers. Kinsey et al., see n. 87, 59-60; see n. 76.

the most current methods of probability sampling; its investigators boasted that the sample drawn could be generalized to the total U.S. population (of married white women aged 18–39) with a 95% level of confidence.

Kinsey, however, eschewed such sampling methods, arguing that, although his sample could not be generalized to the broader population, the results he obtained were a more accurate description of the sexual experience of his sample. Kinsey contended that drawing a probability sample for his study would be impossible, as such a sample would need to include sufficient numbers of subgroups representing the intersection of all of the variables that influenced sexual behavior: age, education, class, and religion, to name only a few.⁹¹ Kinsey further assumed that, even if such a sample could be drawn, “persons selected for study by the objective and impersonal processes of random sampling, and confronted by an investigator of whom they had never heard, would simply refuse to give information on as personal and emotional a subject as sex,” producing a high enough non-response rate to invalidate the sample.⁹² Instead, he used “group psychology” to recruit respondents, approaching them through existing social organizations, both formal (prisons, universities, churches) and informal (subcultures, friendship networks). Despite Kinsey’s assertion of greater validity achieved through his sampling method than through a probability sample (given the nature of his topic), his approach opened the study up to criticism by those who did not want to believe its results.⁹³

In designing GAF, Whelpton and Freedman sought to avoid such critiques and explicitly contrasted their sampling method to Kinsey’s. They pointed out in the introduction to the published volume of results that, although it would have been easier and less costly to

⁹¹Sampling methodology calls for sampling on the independent variables. That is, the sample should be drawn such that the factors that are expected to influence the outcome (in this case, sexual behavior) are distributed in the same way as in the population to which the sample will be generalized. Roger Sapsford, *Survey Research*, Second Edition (London: Sage, 2007), 51-81; Kinsey et al., see n. 87, 26.

⁹²Kinsey et al., see n. 87, 25.

⁹³However, a committee of statisticians appointed by the NRC Committee for Research on Problems of Sex found that, despite its limitations, Kinsey’s statistics on sexual behavior were the best available and far superior to the nine other sex studies the committee examined. Igo, see n. 143, 191-192; William G. Cochran, Frederick Mosteller, and John W. Tukey, “Statistical Problems of the Kinsey Report,” *Journal of the American Statistical Association* 48, no. 264 (1953): 673–716.

have “sought accessible and willing respondents,” the results would not have been generalizable to the larger population with quantifiable levels of confidence.⁹⁴ Such generalizability was important not only for scientific credibility, but also because Freedman and Whelpton planned to use the results to project future U.S. population. They also hoped the scientific nature of the sampling process would inspire confidence among respondents, who were told that “the addresses at which we interview are selected purely by chance and are an accurate cross-section of the nation. The results of all the hundreds of interviews are combined and published in a report which [sic] represents the country as a whole. The report is statistical, and no person is ever identified. Your interview is held in strictest confidence.”⁹⁵ This paragraph, in a letter from Angus Campbell, director of the SRC, to potential respondents identified by the sampling process, not only assured them that the study was not investigating them personally but also enlisted them in the scientific project, asking them to respond truthfully not just on their own behalf but also for those they statistically represented. Potential respondents also received letters from the study’s Medical Sponsoring Committee, which included well-known doctors associated with contraceptive and infertility research, such as Alan Guttmacher and John Rock, and the general Sponsoring Committee, which included Detlev Bronk, president of the National Academy of Sciences (NAS); Judge Learned Hand of the U.S. Circuit Court; Anna Lord Strauss, former president of the League of Women Voters; and Charles P. Taft, former president of the Federal Council of Churches of Christ in America.⁹⁶ These letters further emphasized confidentiality and the study’s importance for projecting and planning for future population growth.

GAF and the Kinsey studies both used standardized interviewing methods in order to

⁹⁴Freedman, Whelpton, and Campbell, see n. 72, 12.

⁹⁵University of Michigan Survey Research Center) Angus Campbell (director, “Form letter to potential respondents to the Growth of American Families Study,” Feb. 1955, folder 337, box 22, record group IV3B4.2.

⁹⁶Alan F. Guttmacher, “Form letter to potential respondents to the Growth of American Families Study,” Feb. 15, 1955, folder 337, box 22, record group IV3B4.2; Lowell J. Reed, “Form letter to potential respondents to the Growth of American Families Study,” Feb. 15, 1955, folder 337, box 22, record group IV3B4.2; Frederick Osborn declined Whelpton’s invitation to the Sponsoring Committee, stating that he, John D. Rockefeller III, and the Population Council wanted to avoid that level of publicity at that time Frederick Osborn to Pascal K. Whelpton, Jan. 12, 1955, folder 337, box 22, record group IV3B4.2.

ensure comparability between respondents, but the methods differed substantially between the two projects. GAF employed the existing SRC apparatus, which comprised field offices throughout the country staffed by trained interviewers. Freedman and Whelpton designed a questionnaire that they expected would elicit the information they sought and sent it out in the hands of 150 trained female interviewers.⁹⁷ Interviews took 75 minutes on average, but some lasted up to three hours. Kinsey took a rather different approach. Just as he had doubted the effectiveness of probability sampling, he also felt that “it is a mistake to believe that standard questions fed through diverse human machines can bring standard answers.”⁹⁸ Kinsey recognized that the way a question is asked will shape the response and, rather than using the exact same phrasing from interview to interview — the way GAF and other SRC studies attempted to standardize results — he instructed his staff to ask questions in whatever way was necessary for the respondent to give a truthful and accurate answer. For example, to determine the rate of syphilis among his respondents, he would ask whether a person had “bad blood” in regions where that euphemism was common and “syphilis” in other places or when his respondents had medical training.⁹⁹

To ensure that interviews elicited the same information from respondent to respondent, the number of interviewers in the Kinsey studies was quite limited. For the female study, only four members of the study staff, all with high levels of education (but not all women), carried out the interviews.¹⁰⁰ Kinsey interviews took 90 minutes to two hours on average, slightly longer than those for GAF, and were much less structured. Whereas Kinsey interviewers had the freedom to adapt their language and interviewing styles to establish rapport and ensure intelligibility, and could add or subtract questions to elicit the information they sought, GAF questionnaires included standard skip patterns and probes.¹⁰¹ Freedman and

⁹⁷Whelpton and Freedman recognized the importance of having women ask these intimate questions, but do not seem to have elicited female consultation on the study as a whole. Freedman, Whelpton, and Campbell, see n. 72, 14.

⁹⁸Kinsey et al., see n. 87, 61.

⁹⁹Ibid., 61.

¹⁰⁰Ibid., 58.

¹⁰¹See n. 76, A skip pattern indicates the path an interviewer should take through a questionnaire on the basis of the respondent’s answers. For example, GAF questionnaires instructed interviewers that, if a woman

Whelpton believed that respondents would give their opinions most readily and truthfully when interviewers did not express any personal opinions about the topic of the study, and saw the questionnaire as a technology that would control for interviewer variability.¹⁰² It is, however, impossible to know whether and the extent to which GAF interviewers departed from the rigid language and order of their survey instruments. Many questions in the survey were open-ended, with interviewers given a few lines to write the response. These were later coded into a standard set of answers to facilitate quantitative analysis.

Separating Fertility from Sexuality

Freedman and Whelpton shared Kinsey's concern that potential respondents would be reluctant to participate in a standard survey about sex conducted by strangers.¹⁰³ In contrast to Kinsey, who trained interviewers to establish rapport with respondents and who solicited subjects who were already familiar with the study and who had been recruited by other participants, Freedman and Whelpton dealt with the problem by removing discussion of sexual activity from their survey as much as possible. Their questionnaire asked detailed questions about women's childbearing intentions and contraceptive practices, but none about their sexual practices. Although Kinsey had found that almost half of his female respondents had experienced premarital sex, GAF only interviewed married women. The language of the questionnaire, though it asked women for the dates and outcomes of all pregnancies, did not imply any expectation that women would have had a need or desire for contraception outside the context of marriage.¹⁰⁴ GAF thereby effectively portrayed fertility as a consequence of marriage rather than a consequence of sexual activity.

The extreme delicacy with which GAF approached the sexuality of respondents is further reflected in the questionnaire's omission of the word "contraception," and its use of the phrase "birth control" only as a probe. GAF investigators designed the questionnaire

stated that she had never been pregnant, not to ask her to list the dates of her pregnancies or the ages of her children. A probe is an alternate wording for a question that an interviewer is to use if a respondent does not answer satisfactorily.

¹⁰²See n. 76.

¹⁰³Ibid.

¹⁰⁴Kinsey et al., see n. 87, 286; see n. 76.

so that questions about contraception would occupy only about 10% of interview time.¹⁰⁵ Interviewers never named specific contraceptive methods, and respondents were also given the opportunity to avoid naming them. Respondents were told that “many married couples do something to limit the size of their families and to control when their children come,” and asked “how do you feel about that?” Interviewers also asked, “how does your husband feel about married couples limiting family size and controlling when children come?” and finally, “in your own case, have you or your husband ever done anything to limit the number of your children or to keep from having them at certain times?”¹⁰⁶ If the respondent answered this question in the negative, the interviewer followed with a probe: “Some things couples do may not be considered birth control. Doctors and public health workers are interested in learning how many people use these methods. Have you ever made use of either of the methods on this card – you can tell me by the numbers on the card.” The interviewer would then hand the respondent a card listing, by number, safe period (rhythm) and douche.¹⁰⁷ If the respondent answered that she had “done something” to limit the number of children she had or to control when she had them, she was handed a different card, shown in Figure 5.1, which listed by number the methods of birth control then available.¹⁰⁸ Respondents were asked simply to give the number corresponding to the methods they had used. Freedman and Whelpton had decided on the card method of questioning after pretests, carried out in Detroit using the infrastructure of the Detroit Area Study, found that some respondents were reluctant to name contraceptive methods, and interviewers also reported that they preferred not having to name methods.¹⁰⁹ The card format also educated both respondents and interviewers about contraceptive techniques that they may not have known about previously. This effect was

¹⁰⁵Ronald Freedman to Frederick Osborn, Dec. 14, 1954, folder 337, box 22, record group IV3B4.2.

¹⁰⁶Ronald Freedman, Arthur A. Campbell, and Pascal K. Whelpton, “Growth of American Families, 1955 [machine-readable dataset],” Nov. 17, 2009, Inter-university Consortium for Political and Social Research, Ann Arbor, MI, ICPSR20000-v1, 147; “Growth of American Families Questionnaire,” Jan. 4, 1955, folder 338, box 22, record group IV3B4.2.

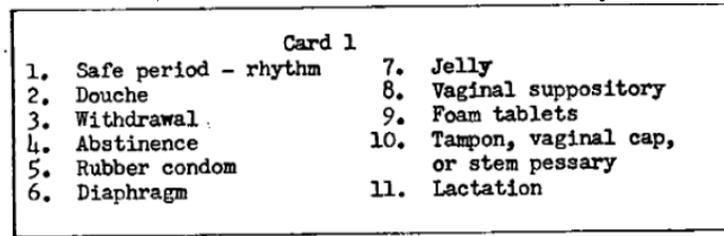
¹⁰⁷Freedman, Campbell, and Whelpton, see n. 106, 148; see n. 106.

¹⁰⁸Freedman, Campbell, and Whelpton, see n. 106.

¹⁰⁹Pascal K. Whelpton to Frederick Osborn, Jan. 4, 1955, folder 337, box 22, record group IV3B4.2; Freedman to Osborn, Dec. 14, 1954, see n. 105.

likely unintended, at least in the first wave, as GAF interviewers were advised that “we do not provide information or advice about birth control, health measures, or ethical problems about which a Respondent should see her physician, her minister, or seek other professional advice.”¹¹⁰ In later U.S. fertility studies and in international studies, it seems more evident that survey methods were consciously intended to influence contraceptive knowledge and behavior.¹¹¹

Figure 5.1: Card 1, Growth of American Families Questionnaire, 1955



GAF interviewers tried to elicit the number of children a woman considered ideal, the number she wanted, the number her husband wanted, the number her friends had, and the number she expected to have, as well as why she wanted and expected the numbers she gave. Women were also asked how many children they would have if they could live their entire reproductive lives over exactly as they wished. These questions were followed by a series of rather existential questions aimed at assessing whether a woman believed she could achieve her desired family size:

59. Some people feel that their lives have worked out just the way they wanted. Others feel that they've really had bad breaks. How do you feel about the way your life is turning out?

60. What do you think your chances are of living the kind of life you'd like to have. Do you think they are pretty good, not so good, or what?

61. Some people feel that they can make pretty definite plans for their lives for the next few years. Others feel they aren't in a position to plan ahead. How about you? Do you feel able to plan ahead or not?¹¹²

The investigators intended these questions to gauge “personal competence,” the extent to

¹¹⁰See n. 76.

¹¹¹Riedmann, see n. 97.

¹¹²Freedman, Campbell, and Whelpton, see n. 106, 152.

which the respondent either “feel[s] personally competent to control her environment” or “feel[s] helpless and at the mercy of forces beyond her control.”¹¹³

To their surprise and relief, Whelpton and Freedman found that most of the respondents selected for the 1955 wave of GAF participated enthusiastically, suggesting, perhaps, that married women were not as averse to discussing sex with strangers as they and Kinsey had feared. The response rate was 91%, in contrast to the 87% that was then typical for surveys on other topics. About half of the non-responders were unable to participate and the other half unwilling, with about half of the latter objecting to the nature of the survey and the other half simply unwilling to participate in any survey.¹¹⁴ Among the 2,713 women who did participate, only 10 refused to answer the questions about contraception.¹¹⁵ The investigators speculated that women were excited to be asked about their experiences and opinions on a topic they knew something about, and noted that “a few women who were willing to answer all our questions about family growth and family planning said that our questions about income were ‘too personal!’”¹¹⁶

The Three-Child Norm

Whelpton and Freedman found that completed family size had decreased from the late nineteenth century to the early twentieth century, with ever-married women born between 1871 and 1875 having 4.0 children on average and women born between 1906 and 1910 having only 2.4.¹¹⁷ However, results from the 1955 wave of GAF, in which 84% of respondents reported wanting between two and four children, suggested that completed family size would rise to an average of 3.0 for women born between 1931 and 1935.¹¹⁸ Whelpton and Freedman

¹¹³Ronald Freedman and Pascal K. Whelpton, “Tentative Outline of Objectives for a Study of the Growth of American Families,” July 9, 1954, folder 337, box 22, record group IV3B4.2.

¹¹⁴Freedman, Whelpton, and Campbell, see n. 72, 14.

¹¹⁵Interviewers classified 92% of respondents as having been “good” or “very good” participants. This percentage was higher among those who reported having used birth control than among those who had not, with 95% of users being classed as “good” or “very good” participants in contrast to 88% of non-users. Author’s analysis of Freedman, Campbell, and Whelpton, see n. 106; see n. 71.

¹¹⁶Freedman, Whelpton, and Campbell, see n. 72, 14; see n. 76.

¹¹⁷Freedman, Whelpton, and Campbell, see n. 72, 340.

¹¹⁸The three-child family seems to have become a norm to a greater extent even than it was a personal preference: while 93% of women stated 2–4 children as the ideal American family size, 25% of respondents wanted more children than the number they reported as ideal and 24% wanted fewer. Author’s analysis of

interpreted the 2–4 child range as a strong consensus about ideal family size among American women, while other observers pointed out that two- and four-child families were very different, with very different implications for long-term population growth.¹¹⁹

With no evidence for how this norm might change in future generations, the population projections Whelpton and Freedman made on the basis of GAF results assumed family size would remain constant for the rest of the century, producing a total U.S. population of 311,997,000 in the year 2000.¹²⁰ They issued the typical disclaimer along with their projection, reminding readers that “*such forecasts show only what would happen if immigration, mortality, and fertility were to follow specified trends which seem reasonable in the light of current knowledge.*”¹²¹ They expressed even more caution than they had in regard to past projections, as GAF had identified quite widespread use of contraception, and a strong desire among couples to limit childbearing in times of economic stress. The 1955 wave of GAF found that 70% of women surveyed had used some form of contraception and an additional 9% intended to do so in the near future.¹²² As a result of the widespread acceptance of family planning and the practice of limiting family size during economic downturns, the recent pattern of fertility had been cyclical rather than steadily falling, as predicted by demographic transition theory (described in Chapter Two). This finding suggested that post-transitional fertility was strongly tied to economic cycles, producing additional support for the analogy between childbearing and consumer behavior.¹²³

Freedman, Campbell, and Whelpton, see n. 106; Freedman, Whelpton, and Campbell, see n. 72, 340.

¹¹⁹Judith Blake, “Ideal Family Size Among White Americans: A Quarter of a Century’s Evidence,” *Demography* 3, no. 1 (1966): 163.

¹²⁰Freedman, Whelpton, and Campbell, see n. 72, 340. Actual U.S. population in the 2000 Census was 281,421,906.

¹²¹*Ibid.*, 377, emphasis in the original.

¹²²Most of those who had not already used contraception and did not plan to use it found it unnecessary because, either due to physiological factors or infrequency of sexual activity, they had discovered that they did not conceive as readily as other couples., see n. 71.

¹²³Freedman, Whelpton, and Campbell, see n. 72, 377.

Fertility Surveys and Family Planning Experiments in Puerto Rico

In the years just before the first wave of GAF, a different group of demographers carried out a similar fertility survey in Puerto Rico. This survey, directed by Joe Mayone Stycos, who was then a student of Kingsley Davis and a Population Council fellow at Columbia University, included a family planning experiment that aimed both to reduce fertility among participants and to identify the most effective means of doing so through voluntary family planning services. This study, funded by the Conservation Foundation and the Population Council, exhibited the influence of both the Council's individual-level economic framework for analyzing fertility and Kingsley Davis's structural approach, which will be discussed at greater length in the final section of the chapter.

Laura Briggs has described Puerto Rico as a laboratory for U.S. development policies in the global south after World War II, and Stycos's family planning experiment as a pilot for population control programs that would soon appear throughout the global south.¹²⁴ The Puerto Rico study, carried out in 1953–1954 and published in 1959 as *The Family and Population Control: A Puerto Rican Experiment in Social Change*, first examined childbearing desires and contraceptive use among a representative cross-sample of Puerto Rican couples, then tested educational methods of encouraging contraceptive use among the portion of the population least likely to use existing family planning services, the rural poor.¹²⁵ As the title indicates, the study was also an intervention, aimed at reducing the fertility of study participants and determining how family planning programs could attract more clients.

Birth control had long been available in Puerto Rico, first through feminist and socialist family planning programs connected to Margaret Sanger's organizations in the mainland United States, and later through government-sponsored public health programs that promoted birth control as a eugenicist and neo-Malthusian solution to insular poverty. However, the shift to government provision of family planning services also corresponded to the re-

¹²⁴Laura Briggs, *Reproducing Empire: Race, Sex, Science, and U.S. Imperialism in Puerto Rico* (Berkeley: University of California Press, 2002), 112.

¹²⁵See n. 28; Hill, Stycos, and Back, see n. 78.

placement of more-effective barrier methods with less-effective spermicidal compounds, as program administrators and consultants believed diaphragms and cervical caps too complicated for proper use by poor nonwhite women, a position also voiced by interwar demographer Raymond Pearl, as discussed in Chapter Two.¹²⁶ Stycos's study followed up on a previous study by Paul Hatt, published in 1952 as *Backgrounds of Human Fertility in Puerto Rico*, which had found that Puerto Rican parents tended to have more children than they desired as a result of "inadequate negative control of fertility."¹²⁷ Stycos and his colleagues therefore officially framed their study as investigating how to increase the ability of couples to achieve their desired family size, though even a cursory reading of study documentation or publications indicates that it also attempted to promote small family desires among its study subjects.

Stycos and his colleagues trained graduates of the University of Puerto Rico to serve as interviewers for the study, reflecting the Population Council's policy of utilizing local personnel and promoting local family planning initiatives. For the experimental phase, health educators were recruited from among graduate students in Health Education at the University's Medical School.¹²⁸ Investigators found that training graduate students in health education to serve as group leaders influenced their views favorably toward small families and family planning and increased their knowledge about birth control, which would continue to influence their later public health work.¹²⁹ Indeed, Briggs has attributed the widespread use of birth control in Puerto Rico in the 1960s to the fact that "a huge array of Puerto Rican modernizing middle-class professionals took up the banner of overpopulation, advocating the idea that familial poverty was caused by too many children, and through a combination of educating, cajoling, and pressuring working-class women, succeeding in raising the rate of birth control use."¹³⁰ This observation suggests that, by training local personnel in

¹²⁶Briggs, see n. 124; Pearl, "Contraception and Fertility in 2,000 Women," see n. 41.

¹²⁷Hill, Stycos, and Back, see n. 78, 2.

¹²⁸Ibid., 32-25.

¹²⁹Ibid., 267.

¹³⁰Briggs, see n. 124, 122.

the mechanics of family planning and the ideology of overpopulation, the study influenced interviewers as well as respondents, with effects lasting much longer than the study itself.

In contrast to GAF and to later fertility surveys in the global south (discussed in the following section), the Puerto Rico study aimed to discover the social and cultural context of childbearing, suggesting Davis's sociological influence.¹³¹ It notably included interviews with husbands as well as wives, indicating recognition by the investigators that both husbands and wives contributed to contraceptive decisions and fertility outcomes during this period, when available contraceptive methods required the participation of both members of a couple.¹³² In particular, the study sought to correlate non-use of birth control to a traditional culture of male dominance and female modesty. Interviewers asked women, "many husbands forbid their wives to do certain things, don't they? What happens in your case? Does your husband forbid you to..." followed by six items, including using make-up, going out alone, and dancing with other men at parties.¹³³ Men were also asked about things they prohibited their wives to do. To gauge modesty, interviewers asked women how embarrassed they would be listening to dirty jokes, undressing in front of their husbands, being examined by a doctor or a nurse, and talking with their husbands about menstruation or sex.¹³⁴ These questions refer back to colonial tropes that view male dominance and female subordination as a sign of the supposed "backwardness" of nonwhite people.¹³⁵ Nonetheless, they also suggest recognition that gender relations influenced childbearing, something that was rarely discussed in demography literature, but would become a critical component of Kingsley Davis's critique of the Population Council's family planning approach to population control, discussed in the final section of this chapter.

¹³¹Warwick, see n. 154.

¹³²The study included both legally married couples and "consensual unions." Hill, Stycos, and Back, see n. 78, 193.

¹³³Ibid., 434.

¹³⁴Ibid., 435.

¹³⁵See, for example, Philippa Levine, "What's British about Gender and Empire? The Problem of Exceptionalism," *Comparative Studies of South Asia, Africa, and the Middle East* 27, no. 2 (2007): 273-274; Antoinette M. Burton, *Burdens of History: British Feminists, Indian Women, and Imperial Culture, 1865-1915* (Chapel Hill: University of North Carolina Press, 1994).

Questions about birth control were much less abstract in the Puerto Rico study than in GAF, but were equally delicate. Puerto Rican respondents were asked to: “suppose there is a couple called María and José. They are poor and have six children. María does not want to have any more children but José does not care how many children they have.” Respondents were then asked if they thought María “should do something or not.”¹³⁶ Such questions reveal an *a priori* assumption that childbearing is burdensome to women but not men, and that it is therefore the woman’s responsibility to pursue contraceptive options. They also conceptually associated large families with poverty, implying that poor couples should limit their childbearing and that using birth control might alleviate their poverty. In contrast to GAF, in which neither interviewers nor respondents were required to name specific methods of contraception, interviewers in the Puerto Rico survey listed several types of birth control — sterilization, douche, jelly or cream, diaphragm, condom, withdrawal, rhythm, and abstinence — and asked respondents of both sexes whether they knew about each, whether they had used each and, if so, when and to what effect.¹³⁷ Both men and women were asked if they knew where to obtain family planning assistance and whether they had ever been to a government-sponsored family planning clinic. Whereas GAF interviewers had been explicitly cautioned not to give respondents information about birth control, interviewers for the Puerto Rico survey also served as liaisons to family planning clinics.

The experimental phase of the study focused on the segment of Puerto Rican society found in the interview phase to be least likely to use available family planning services: the rural poor who lacked education beyond the eighth grade.¹³⁸ The study tested the efficacy of two different educational programs aimed at increasing uptake of family planning services and reducing family size among the rural poor, examining how such programs could most cost-effectively stimulate contraceptive use among the largest number of people.¹³⁹ The success of the study was measured in terms of fertility decline rather than proportion of demand

¹³⁶Hill, Stycos, and Back, see n. 78, 432.

¹³⁷Ibid., 439.

¹³⁸Ibid., 258.

¹³⁹Ibid., viii.

met, belying the study's official goal of empowering families to achieve their desired family size. Whereas the interview phase exhibited Davis's influence, the experimental phase — on which Ronald Freedman served as a consultant — exhibited the influence of the Population Council.

For the experimental phase, respondents were divided into three groups: the first received invitations to a series of three educational meetings, the second received a series of three pamphlets, and the third — the control group — received neither. Investigators measured the success of these programs by comparing attitudes and practices between a pre-treatment interview and a post-treatment interview for treatment and control groups. The design of the educational program indicates awareness by the study's directors that respondents were not particularly interested in limiting the size of their families. Fearing that introducing the topic of family planning at early meetings would stimulate a boycott of later meetings, the study's directors designed the meetings such that family planning was not brought up until the third and final one. The first focused on planning in general (with clothes shopping presented as an example), and the second meeting included viewing a film produced by the U.S. Public Health Service and the Puerto Rico Department of Health, which contrasted an unhappy family with many children to a happy family with fewer children, promoting the idea that small families were superior.¹⁴⁰ In the third meeting, men and women were given separate lectures by physicians on the physiology of reproduction and different contraceptive options. The series of pamphlets paralleled the series of meetings, with the first one telling participants that “if things are planned, they end well,” and the second contrasting large and small families through an analogy to planting banana trees “as far apart as one can support.”¹⁴¹ The third pamphlet, titled “María Solves Her Problem,” told the story of a woman who “feels that she cannot have any more children and goes to the clinic.” As the doctor in the story explained various contraceptive options to María, readers learned about

¹⁴⁰Hill, Stycos, and Back, see n. 78, 263.

¹⁴¹Ibid., 263.

them along with her.¹⁴² However, even with sessions designed in this way, many respondents did boycott them: of those selected, only 59% of women and 40% of men attended at least one meeting, and only 16% of the women and 8% of the men attended all three. When asked why they did not attend, most respondents cited inconvenience rather than opposition to the material. Men in particular said they needed to work or look for work during meeting times, suggesting that they attributed their own financial circumstances to low wages or lack of work rather than family size.¹⁴³ Those who did attend typically arrived late, sometimes by up to an hour.¹⁴⁴

The Puerto Rico family planning experiment exemplifies a tension the Population Council and its representatives continued to encounter throughout their population control activities. On the one hand, they sought to frame their activities as helping couples achieve existing small family desires. On the other hand, they explicitly worked to instill small family desires among study participants. The leaders of the Population Council, including Notestein — its president from 1959 to 1968 — resolved that tension by insisting that small families were beneficial for couples in the global south, even if the couples themselves didn't realize it. Notestein compared the work of the Council to public health work in a hypothetical world in which

malaria were as welcome as children — if a majority of young couples felt that they had really not justified their existence until they had undergone four or five attacks of malaria, which, moreover, they thoroughly enjoyed; if their fathers, mothers, mothers-in-law, uncles and aunts were constantly urging them to become exposed to the disease as soon as possible; if each new onslaught were welcomed with approbation by the whole community; and if to avoid this attractive disease, each deviant couple had to spray its own home with DDT acquired somewhat furtively.¹⁴⁵

By comparing children to malaria, Notestein dismissed all of the social, economic, and cultural reasons for childbearing as superstition and irrationality, justifying the prevention of

¹⁴²Hill, Stycos, and Back, see n. 78, 263.

¹⁴³Ibid., 277.

¹⁴⁴Ibid., 278.

¹⁴⁵Quoted in Bernard Berelson, "On Family Planning Communication," *Demography* 1, no. 1 (1964): 95.

pregnancy as a service to the couple involved, regardless of how many children they actually wanted.

Although the interview component of the Puerto Rico study strongly resembled GAF, the two projects had very different goals. While GAF aimed to assess childbearing intentions and contraceptive practices in the mainland U.S. so as to project and plan *for* population, the Puerto Rico study aimed to assess how childbearing intentions and contraceptive practices in Puerto Rico could be manipulated so as to facilitate the planning *of* population through large-scale efforts to create a desire for small families and stimulate the uptake of available methods of birth control. Fertility surveys in the U.S. and family planning experiments in the global south changed after 1960, a result of the availability of new systemic birth control options and of the influence of Bernard Berelson, the former director of the Ford Foundation's population programs who joined the Population Council in 1962 and served as its president from 1968 to 1974. The new approach to both fertility surveys and population control is the subject of the next section.

5.3 Family Planning and Beyond

The Population Council's approach to population control changed dramatically in the 1960s, reflecting the influence of its new communications director, Bernard Berelson, who later became the Council's president. Whereas the Puerto Rico study had focused on the couples least likely to use birth control, providing them with educational programs aimed at creating among them a desire for a small family and the motivation to use birth control to achieve small families, fertility surveys sponsored by the Population Council in the 1960s — many of which were part of a new program, titled Knowledge, Attitudes, and Practices (KAP) of Contraception — aimed to change public opinion and shape policy regarding the government provision of family planning in the global south and assistance to those programs from the U.S. government and U.S.-based nongovernmental organizations. The intervention

components of those programs focused not on education, but on providing new birth control technologies to women who were already interested in using them, with the aim of creating a new social norm rather than influencing the family size desires of individual couples.

Bernard Berelson was a propaganda and behavioral science expert who joined the Population Council in 1962 to direct its propaganda programs, described by Council staff as “education” or “communication.” When the Council’s leaders first began to discuss recruiting a communications director in 1958, they were explicitly advised to select not a scientist but rather “an information specialist who can determine the best, surest and simplest way of getting a story across, particularly when you must reach a large number of illiterates or semi-literates.”¹⁴⁶ Berelson was just the man. He had earned his Ph.D. in library science at the University of Chicago in 1941 under the direction of Doug Waples, whose research focused on propaganda communication and was funded by the Rockefeller Foundation. Berelson’s first book, co-authored with Waples while a graduate student and titled *What Reading Does to People: A Summary of Evidence on the Social Effects of Reading and a Statement of Problems for Research* (1940), examined the influence of reading on behavior.¹⁴⁷ His dissertation analyzed data from a voting survey, attempting to explain why people vote as they do, and was published as part of Paul Lazarsfeld’s *The People’s Choice* (1948). During the war, Berelson served with renowned behavioral scientist Harold Lasswell in the Foreign Broadcast Intelligence Service, which analyzed enemy broadcasts and produced material for broadcast in the Americas. He returned to Chicago’s Graduate Library School after the war as a dean, taking a leave from 1951 to 1957 to develop the Ford Foundation’s behavioral science program, which initially housed the Foundation’s population activities.¹⁴⁸ Ultimately, the behavioral sciences program fell victim to McCarthy era censorship. Grants recommended by program officers for Kinsey’s sex research and for research on American Indian history

¹⁴⁶Francis A. Jamieson and Martha Dalrymple to John D. Rockefeller III, Dec. 11, 1958, folder 40, box 4, record group IV3B4.2.

¹⁴⁷Douglas Waples, Bernard Berelson, and Franklyn R. Bradshaw, *What Reading Does to People: A Summary of Evidence on the Social Effects of Reading and a Statement of Problems for Research* (Chicago: University of Chicago Press, 1940).

¹⁴⁸Morrissey, see n. 235.

and racial integration in St. Helena were vetoed by the board as too controversial, and the program dissolved in 1957.¹⁴⁹ Bud Harkavy took over the Ford Foundation's population program in 1959.¹⁵⁰ Berelson returned once again to the University of Chicago, this time to the Graduate School of Business, where he remained only a few years before moving on to Columbia University's Bureau of Applied Social Research in 1960 and then to the Population Council in 1962 to lead the Council's work on family planning communication.¹⁵¹

Berelson arrived at the Population Council just as the Council's investment in research to develop a more "foolproof" contraceptive that would facilitate population control in the global south was beginning to bear fruit. This section begins by describing how that research led to the development of the IUD in the early 1960s, and then discussed how a new survey program, funded by the Population Council and strongly influenced by Berelson, aimed to promote IUD use in the global south and thereby create a small-family norm. I argue, however, that these surveys were also intended to produce public and policy support for family planning programs in the U.S. and the global south, and for assistance by the U.S. government to such programs. In the final part of the section, I discuss critiques of the Population Council's approach to population control by Berkeley demographers Kingsley Davis and Judith Blake, and their proposals for an alternative, structural approach.

5.3.1 Toward a More Perfect Contraceptive

By the time Berelson joined the Population Council, contraceptive technology had changed dramatically. Prior to 1960, birth control options were limited to behavioral techniques (withdrawal, rhythm, abstinence), barriers (condoms, diaphragms, cervical caps), and spermicidal compounds (suppository tablets, jellies, powders, foams), all of which required the cooperation or at least the consent of both sexual partners and a degree of motivation

¹⁴⁹Morrissey, see n. 235.

¹⁵⁰Caldwell and Caldwell, see n. 109, 79.

¹⁵¹Isabel S. Grossner, "Bernard Berelson Interview for Carnegie Corporation Oral History Project," May 1, 1967, box AD25, accession 2.

and skill that experts in the global north believed were lacking in the global south. Demographers and population control activists inferred from the historical experience of the global north that a couple's degree of willingness to use birth control was the multiplicative product of its motivation to limit family size and the simplicity of available contraceptive techniques. Interwar research, described in Chapter Two, had shown that, with enough motivation, couples would use even the most onerous means of limiting their family size — abstinence, withdrawal, barriers, and compounds. Conversely, experts expected that, with a simple enough contraceptive technology, family size in the global south could be reduced with only the bare minimum of motivation.¹⁵² As Berelson put it, “the greater the interest, the more will effective contraception be practiced at a given level of technology. The better the technology (‘better’ for the given population in convenience, cost, effectiveness, safety, etc.), the more will effective contraception be practiced at a given level of interest.”¹⁵³ The leaders of the Population Council therefore believed that creating and disseminating simple contraceptives — the approach Notestein advocated in 1947¹⁵⁴ — would have the same effect on fertility, by reducing the requirement for motivation, as industrialization, urbanization, and education — the approach had Notestein advocated in 1944¹⁵⁵ — would have had by increasing motivation. In 1964, Berelson argued that family planning could precede other aspects of “the general modernization of society” because “the components [of modernization] are uneven and do not progress in any set pattern. So *something has to be in front, and why not family planning?*”¹⁵⁶ This statement suggested that, with the appropriate technology, family planning had the potential to stimulate other changes considered to be part of “modernization.”

¹⁵²National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — morning and evening sessions, 6/20/52,” see n. 78; Berelson, “On Family Planning Communication,” see n. 145, 97.

¹⁵³Bernard Berelson, “National Family Planning Programs: Where We Stand,” in *Fertility and Family Planning: A World View*, ed. S.J. Behrman, Leslie Corsa Jr., and Ronald Freedman (Ann Arbor: University of Michigan Press, 1969), 360.

¹⁵⁴Notestein, “Summary of the Demographic Background of Problems of Undeveloped Areas,” see n. 39.

¹⁵⁵Notestein, “Problems of Policy in Relation to Areas of Heavy Population Pressure,” see n. 227.

¹⁵⁶Berelson, “On Family Planning Communication,” see n. 145, 98, emphasis in the original.

In the early 1950s, manufacturers of spermicidal foaming powders began to package them in single-use tablets, which could be inserted into the vagina by hand and were better suited to conditions in the global south, as they were stable in hot climates and their use did not require access to running water. Factories in India and Japan soon began producing these tablets locally.¹⁵⁷ In 1955, the Population Council sent Frank Notestein and Leona Baumgartner, New York City's Commissioner of Health, to India to consult with the government's family planning program, which had been established in 1952. Baumgartner, whose husband was the director of Durex, manufacturer of Durafoam spermicidal tablets, enthusiastically endorsed foaming tablets as the ideal form of birth control for India.¹⁵⁸ With funding from the Rockefeller Foundation, Harvard University immediately launched a study of the efficacy of foaming spermicidal tablets, now known as the Khanna Study, in the Ludhiana district of Punjab. The study failed to find convincing evidence that the tablets could reduce aggregate birth rates, mainly because investigators were unable to distinguish between their acceptance by those to whom they were offered their subsequent use by those who accepted them. As Mahmood Mamdani argued in a critical examination of the study, most participants had little interest in birth control but accepted the tablets to be polite. In his own follow-up study, Mamdani was shown a sculpture that one man had made out of the tablets he accepted, rather than using them for their intended purpose.¹⁵⁹ Studies in the continental U.S. and Puerto Rico indicated that, even when used, foaming spermicidal tablets were not very effective.¹⁶⁰ These tablets, though available in the United States, were never very popular there, with less than 1% of GAF respondents in 1955 reporting having used them.¹⁶¹

Although spermicidal tablets were easy to use, they did not satisfy the most important criterion of the population establishment for contraceptive technology because they left too much agency in the hands of users, who could decide, with each act of sexual intercourse,

¹⁵⁷Ilana Löwy, "Defusing the Population Bomb in the 1950s: Foam Tablets in India," *Studies in History and Philosophy of Biological and Biomedical Sciences* 43 (2012): 584.

¹⁵⁸Ibid., 586.

¹⁵⁹Mamdani, see n. 97.

¹⁶⁰Löwy, see n. 157, 591.

¹⁶¹Author's analysis of Freedman, Campbell, and Whelpton, see n. 106.

whether or not to use them. At the same time, feminist activists in the U.S. sought even easier and more reliable birth control methods than barriers and spermicidal compounds. The demand for new contraceptive technologies by these two groups — population control activists and birth control activists — led to the development of two new systemic methods, the intrauterine contraceptive device (IUD) and the oral contraceptive pill (the Pill). Both were highly effective at preventing pregnancy and had the potential to increase the control of women and couples over their childbearing, but also required access to medical care. While women who received the Pill could decide when to discontinue it, removing an IUD required medical assistance.

The Pill and the IUD both depended on research in the field of endocrinology, which, prior to the 1940s, had received little institutional support because of its association with sex.¹⁶² In the 1940s, the Rockefeller Foundation began to fund endocrinological research through the National Research Committee for Research in Problems of Sex, the same committee that funded Kinsey's research. However, despite the growing interest among doctors and philanthropists in endocrinology, the impetus for the development of a pill women could take orally to prevent pregnancy came from feminist activists Margaret Sanger and Katharine McCormick.¹⁶³ In 1951, Sanger commissioned endocrinologist Gregory Pincus to develop the "magic pill" she had first envisioned in 1912.¹⁶⁴ Additional funds came from the Planned Parenthood Federation of America, at that time under the directorship of William Vogt.¹⁶⁵ In 1953, McCormick, a scientist and heir to the International Harvester fortune, pledged to cover any remaining costs.¹⁶⁶ Notably, the Population Council, though it funded other aspects of Pincus's work, did not contribute to the development of the oral contraceptive, as it did not meet the organization's criteria for an ideal contraceptive technology for the

¹⁶²James Reed, *From Private Vice to Public Virtue: The Birth Control Movement and American Society Since 1830* (New York: Basic Books, 1978), 283; Clarke, see n. 86.

¹⁶³Andrea Tone, *Devices and Desires: A History of Contraceptives in America* (New York: Hill and Wang, 2001), 204; Eig, see n. 64.

¹⁶⁴Tone, *Devices and Desires: A History of Contraceptives in America*, see n. 163, 209-211.

¹⁶⁵*Ibid.*, 212.

¹⁶⁶*Ibid.*, 214.

global south.¹⁶⁷

In 1954, the same year that Stycos carried out the experimental phase of his fertility study, Pincus chose Puerto Rico as the site for large-scale human testing of his new drug, utilizing the existing family planning infrastructure and the high level of knowledge local doctors had in contraceptive techniques, as well as the fact that Puerto Rico's colonial status meant easy access to potential research subjects who had little legal protection.¹⁶⁸ Nearly immediately, Pincus's team encountered local criticism of the use of Puerto Rico as a laboratory to test drugs intended for women in the mainland U.S.¹⁶⁹ For the developers of the pill, however, these critiques were countered by positive press in such magazines as *Science*, *Time*, *Fortune*, *Reader's Digest*, *The Saturday Evening Post*, and *The Ladies' Home Journal*, in response to which mainland American women wrote to Pincus offering themselves as test subjects.¹⁷⁰ Scientists and doctors involved in the development of the Pill also tested it on their wives and daughters.¹⁷¹ The FDA initially approved Enovid — the Pill's first brand name — in 1957 to treat menstrual disorders, but many doctors also prescribed it “off-label” to prevent pregnancy, a use for which the FDA approved it in 1960.¹⁷² At this time, thirty states still had laws restricting the advertisement and sale of contraceptives, and in Connecticut the use of contraceptives was entirely illegal.¹⁷³

In the first decade after FDA approval, the Pill — which soon came in multiple forms from various pharmaceutical companies — was lauded as a technology that had freed millions of women and their male partners throughout the world from the fear and burden of unintended pregnancy.¹⁷⁴ As the first medication designed to be taken daily by healthy individuals, the Pill produced enormous profits for pharmaceutical companies and became a model for new

¹⁶⁷Tone, *Devices and Desires: A History of Contraceptives in America*, see n. 163, 215.

¹⁶⁸Ibid., 221-222.

¹⁶⁹Ibid., 223.

¹⁷⁰Ibid., 225-226.

¹⁷¹Eig, see n. 64.

¹⁷²Tone, *Devices and Desires: A History of Contraceptives in America*, see n. 163, 226.

¹⁷³Ibid., 227-228.

¹⁷⁴In 1967 the Population Council estimated that 12.84 million women worldwide were taking oral contraceptives, with about half of those in the U.S. *ibid.*, 239.

types of pharmaceutical therapies.¹⁷⁵ While the development of the Pill has been criticized as further removing contraception from the direct control of women — as it required a prescription — there is also evidence that women’s demand for it influenced the way medicine was practiced, with patients beginning to ask doctors for specific prescriptions.¹⁷⁶

Despite the popularity of the Pill in the U.S. and Western Europe, the Population Council, whose leaders believed taking a daily pill to be too much responsibility for women in the global south and for poor and nonwhite women in the global north, continued to pursue research on methods that would require even less effort and allow for less agency among users.¹⁷⁷ That is, population control activists attributed large families in the global south and among poor and nonwhite couples in the global north not to a calculated choice but rather to an inability to effectively use available contraceptive techniques, calling on an older discourse that characterized the poor and nonwhite as unintelligent and sexually indiscriminant.¹⁷⁸ Accordingly, they sought a technology that would transfer — to the greatest extent possible — the responsibility for family limitation from couples to the method itself. In contrast to Sanger and McCormick, who sought a technology that would increase women’s control over their reproductive systems, population control activists — including those associated with Planned Parenthood — simply sought the cheapest and easiest method of reducing fertility in the global south. Research efforts during the 1950s indicate that the Population Council was interested in male methods as well as female methods,¹⁷⁹ and the discussion at John D. Rockefeller III’s 1952 Williamsburg meeting (see Chapter Four) of a uterine parasite that would render women infertile until they received an antidote from a doctor indicates that fertility control was considered a higher priority than health and that population control activists sought to place the control of fertility in the hands of doctors or family planning

¹⁷⁵Eig, see n. 64.

¹⁷⁶Tone, *Devices and Desires: A History of Contraceptives in America*, see n. 163, 240-241.

¹⁷⁷National Academy of Sciences, “A Conference on Population Problems, Williamsburg, VA, Transcript — morning and evening sessions, 6/20/52,” see n. 78.

¹⁷⁸See, for example, Pearl, “Contraception and Fertility in 2,000 Women,” see n. 41.

¹⁷⁹Nelson, see n. 142; Sheldon J. Segal, “Contraceptive Research: A Male Chauvenist Plot?” *Family Planning Perspectives* 4, no. 3 (1972): 21-25; see n. 27.

authorities rather than parents or potential parents.

The Population Council funded research on a number of potential contraceptive methods that required very little action on the user's part and therefore held the promise of population control. The most successful was the IUD, an ancient contraceptive technology that was manufactured commercially in the U.S. prior to the 1873 Comstock Act.¹⁸⁰ Yet when the medical profession began to endorse, supervise, and regulate contraception, doctors continued to treat the IUD as an illicit and inferior method. Its connection to endometriosis and infection, and the pain associated with insertion, did not help its reputation.¹⁸¹ Because IUDs protected women from pregnancy for years after insertion, however, they had potential as a tool of population control, and the Population Council began funding research in 1961 that led to the development of Gynekoil and the Lippes Loop, both of which became widely available in 1963.¹⁸² In 1962, the Population Council began to sponsor international conferences on intrauterine contraception to raise the profile of the method among the medical establishment. In 1963 the Council launched the journal *Studies in Family Planning* to report on field experiments with IUDs in the global south. By the time the journal's third issue was printed, over 50 such studies had been launched and IUDs had been placed in over 100,000 women.¹⁸³ The Population Council held the patent on the Lippes Loop and Gynekoil, licensing production at no cost in any country with a national family planning program. By 1967, IUDs were being manufactured in Egypt, Hong Kong, India, Pakistan, South Korea, Taiwan, and Turkey, and the Population Council had also provided molds and raw materials free of charge.¹⁸⁴

Berelson and Notestein held high hopes for the IUD as a population control device. Berelson expressed these hopes at the Population Council's second international IUD conference

¹⁸⁰Tone, *Devices and Desires: A History of Contraceptives in America*, see n. 163, 31.

¹⁸¹Ibid., 263-264.

¹⁸²Ibid., 265.

¹⁸³"Report on Intra-uterine Contraceptive Devices," *Studies in Family Planning* 2 (1 1964): 11; Bernard Berelson, "Application of Intra-Uterine Contraception in Family Planning Programs," in *Proceedings, Second International Conference on Intra-Uterine Contraception*, New York, by the Population Council (1964), 9.

¹⁸⁴Frank W. Notestein to Jan Myrdal, June 1, 1967, folder 1, box 20.

in 1964, where he argued that

in many environments this method may well signify the difference between success and failure in family planning programs and hence it represents, at least potentially, a tremendous contribution to the welfare of individual families and national communities, with all that this means for the economic prosperity, the political stability, and the freedom of mankind. Indeed, I believe that this simple device can and will change the history of the world.¹⁸⁵

Berelson's exuberance suggests that he viewed and promoted the IUD as a technology of modernization — a simple device that, without even requiring the ongoing consent of those who used it, would reduce fertility and thereby stimulate economic development.

The IUD was an ideal technology for the Population Council, as it cost pennies to produce and could be inserted by staff with only minimal training. Once in place, the Lippes Loop — the IUD of choice for the Population Council and later for USAID — would prevent conception indefinitely without any further action, and “acceptors” could not easily remove them or choose not to use them.¹⁸⁶ IUDs were convenient for women and couples who wanted to avoid conceiving for long periods of time, though they continued to carry the risk of infection, pain, and bleeding, and many women in the global south who developed these complications did not have easy access to medical care. Participants in the Population Council's IUD conferences recognized this problem. However, as J. Robert Willson, chair of obstetrics and gynecology at Temple University, reasoned to the other participants, “perhaps the individual patient is expendable in the general scheme of things, particularly if the infection she acquires is sterilizing but not lethal.”¹⁸⁷ Alan Guttmacher, a gynecologist who was then president of the American Planned Parenthood Federation and went on to found the Guttmacher Institute, acknowledged the power of the IUD not only to enable couples to achieve their desired small families but also to prevent them from achieving their desired larger families. As he put it, “once the damn thing is in the patient cannot change her mind.

¹⁸⁵Berelson, “Application of Intra-Uterine Contraception in Family Planning Programs,” see n. 183, 13.

¹⁸⁶Ian Angus and Simon Butler, *Too Many People? Population, Immigration, and the Environmental Crisis* (Chicago: Haymarket, 2011), 89.

¹⁸⁷Quoted in Connelly, see n. 8, 202-203.

In fact, we can hope she will forget it's there and perhaps in several months wonder why she has not conceived.”¹⁸⁸

5.3.2 Knowledge, Attitudes, and Practices of Contraception

Under Berelson's direction, in the 1960s the Population Council began to fund a new international fertility survey program, known as Knowledge, Attitudes, and Practices of Contraception (KAP), which followed a template devised by Berelson himself.¹⁸⁹ Though modeled on the fertility surveys of the 1950s, KAP studies aimed less to determine how to promote the uptake of family planning services among respondents — though they did encourage IUD acceptance — and more to demonstrate existing demand in the global south for government-sponsored family planning programs, and thereby shape public and official opinion in favor of family planning. That is, KAP studies were designed not primarily to answer research questions about respondent's knowledge, attitudes, and practices regarding contraception, but rather to produce evidence of demand for family planning services that the Population Council could use to pressure governments in the global south to accept help from the U.S. and the U.N. in providing such services to their citizens.

The Population Council recruited Ronald Freedman to help design these studies, sending him in 1960 to Hong Kong, India, Japan, and Thailand. In 1961, Freedman became co-director of the Taiwan Population Studies Center, established that year with a grant from the Population Council, and director of the University of Michigan's Population Studies Center, established the same year with a grant from the Ford Foundation.¹⁹⁰ In 1963, Freedman launched the first of a series of KAP surveys in Taiwan, in conjunction with a new family planning program that offered the IUD and the Pill. Over the next 23 years,

¹⁸⁸Quoted in Connelly, see n. 8, 205.

¹⁸⁹This template is detailed in an article published in the first issue of *Demography*. Berelson, “On Family Planning Communication,” see n. 145.

¹⁹⁰L.P. Chow, “A Programme to Control Fertility in Taiwan: Setting, Accomplishment and Evaluation,” *Population Studies* 19, no. 2 (1965): 157; Caldwell and Caldwell, see n. 109, 68; Frank W. Notestein, “Statement in Support of Application by University of Michigan Population Studies Center for NIH Grant for its Program of Research on Fertility and Family Planning in Taiwan,” Mar. 30, 1967, folder 1, box 20.

the Taiwan project became a kind of “overseas research laboratory” for the Michigan Population Studies Center, generating a wealth of data for student and faculty research, even though few University of Michigan students or faculty members actually traveled to Taiwan or participated in data collection.¹⁹¹ It also served as a pilot for KAP survey programs and family planning programs that would be established during the next decade in other parts of the global south.

Creating a Small-Family Norm

In contrast to the Puerto Rico study, which had attempted to stimulate contraceptive use among the segment of the population least likely to show interest, the KAP studies and the family planning experiments carried out in conjunction with them instead targeted those who already had as many children as they wanted or were otherwise receptive to the idea of family planning.¹⁹² Focusing efforts on this segment of the population gave investigators maximal return on minimal investment and allowed them to demonstrate substantial demand for family planning services among respondents surveyed. Furthermore, Berelson predicted that once the elites in a society — the “opinion leaders,” as he called them — began using contraception and having small families, the trend would soon spread to the rest of the population, as had occurred in the U.S.¹⁹³

KAP studies focused on creating new small family norms from the top down, rather than influencing the desires of individual families, as the Puerto Rico study had done. This approach allowed Freedman to state quite honestly that the survey program did not attempt to “persuade couples that they should want fewer children.”¹⁹⁴ Bogue wrote in 1968 that

¹⁹¹John Caldwell, “The Changing African Family Research Program,” 1973, box AD25, accession 2, 74; Greenhalgh, “The Social Construction of Population Science: An Intellectual, Institutional, and Political History of Twentieth-Century Demography,” see n. 20.

¹⁹²Berelson, “On Family Planning Communication,” see n. 145, 95.

¹⁹³Bernard Berelson, “KAP Studies on Fertility,” in *Family Planning and Population Programs: A Review of World Developments*, ed. Bernard Berelson (Chicago: University of Chicago Press, 1966), 659; Bogue questioned the effectiveness of this approach Donald Bogue, “Hypotheses for Family Planning Derived from Recent and Current Experience in Asia,” *Studies in Family Planning* 1, no. 3 (1964): 8.

¹⁹⁴Freedman and Takeshita, see n. 9, 353.

family planning programs and experiments funded by the Population Council “are not, as many believe, a passive pleading with individual couples to forego childbearing which they otherwise would wish to experience. Instead it is an aggressive campaign to *transform the cultural prescriptions* for childbearing all over the world.”¹⁹⁵ As an example, he cited a slogan that India’s government-sponsored family planning program was trying to popularize: “two or three children — that’s enough.”¹⁹⁶ Working toward this aim, Freedman’s program in Taiwan included posters displayed in public places that showed a grandmother gazing approvingly at her son, his wife, and their three children, with a caption noting “how healthy and happy they are” and instructing viewers to go to their nearest health station for more information.¹⁹⁷

In 1968, the Population Council teamed up with Disney to produce an animated film in which an artist, portrayed by Donald Duck, creates an “everyman” character, explicitly an amalgamation of the world’s peoples, and then contrasts the man’s socioeconomic status with a large family to that with a small family, implying that family planning produced individual prosperity and raised social status. The film described the recent mortality declines and resulting population growth in the global south, contending that the increase in the number of the world’s peoples was slowing the progress of man’s [sic] mastery over his surroundings. The small family, with three children, has plenty to eat and is able to sell the excess of its agricultural production and buy a radio; the children are healthy, happy, and educated. In contrast, the large family, with seven children, must consume all of the food it produces and therefore cannot afford a radio; the children are weak and hungry and the mother is overworked and exhausted. The film promoted family planning as a set of tools that allowed parents to have “only the children you want and only when you want them.” It informed audiences that family planning was safe and “acceptable,” and that many people were already using it, including “your neighbors.” It concluded by stating that “the real measure of a

¹⁹⁵Donald Bogue, “Progress and Problems of World Fertility Control,” *Demography* 5, no. 2 (1968): 539–540, 540, emphasis in the original.

¹⁹⁶*Ibid.*, 540.

¹⁹⁷Freedman and Takeshita, see n. 9, 117.

man is not how many children he can produce, but how well he takes care of them.”¹⁹⁸ This film encouraged parents to consider children as liabilities rather than assets, and to view childbearing as a consumer choice with desirable alternatives.

Contraceptive surveys also promoted the view of childbearing and material well-being as a trade-off, for example asking respondents whether they would rather have a(nother) child or such consumer goods as a radio or a television.¹⁹⁹ The surveys therefore became a vehicle for spreading the consumer approach to childbearing demographers associated with post-transitional societies and modernity. They clearly did not reach everyone, but the designers of the KAP studies expected that they would have spill-over effects, and even assessed the spill-over radius so that family planning programs could use their advertising budgets as cost-effectively as possible.²⁰⁰ In contrast to the randomized controlled trials that are popular today in development economics, and even the Puerto Rico study, which used a control group to disentangle the effects of the fertility intervention from other influences on fertility, KAP studies were not controlled in any way. Investigators did not examine whether the intervention actually reduced the fertility of those it targeted, or whether it benefited participants, either at the individual or aggregate level. Increased use of birth control at the individual level and reduced aggregate fertility were the only measures of the studies’ effects, and reduced fertility among non-study participants was still interpreted as evidence of success.

Producing Reproductive Subjects

Because they promoted the IUD as the preferred method of contraception, KAP studies focused on women, who could have an IUD inserted without the consent or even knowledge of their husbands. In Taiwan, respondents who seemed receptive to contraception were given 50% off coupons for IUD insertion and visited by family planning workers or sent to nearby

¹⁹⁸<http://www.youtube.com/watch?v=t2DkiceqmzU> (accessed 7/29/2014).

¹⁹⁹Riedmann, see n. 97.

²⁰⁰Bernard Berelson and Ronald Freedman, “A Study in Fertility Control,” *Scientific American* 210, no. 5 (1964): 29–37; Freedman and Takeshita, see n. 9.

clinics. Respondents were given the full range of contraceptive options, but the Pill was de-emphasized in favor of the IUD, which was considerably cheaper for users at 75 cents per IUD insertion compared to 75 cents per monthly pill cycle.²⁰¹ Investigators estimated the cost to the program of each IUD “acceptance” at \$4-\$8, which they deemed “far below the eventual economic value of each prevented birth, which has been estimated as being between one and two times the annual per capita income.”²⁰² Such analyses likely influenced President Johnson’s 1965 statement to the U.N. that “less than five dollars invested in population control is worth a hundred dollars invested in economic growth.”²⁰³ However, IUD programs were not without problems. By setting target levels of IUD acceptance and offering incentives to family planning workers who recruited IUD “acceptors,” family planning experiments created conditions rife for coercion. Moreover, because such programs emphasized large-scale campaigns to insert IUDs — often using mobile units and paramedical staff — many of the women who received them did not have sufficient access to medical care to deal with complications, such as bleeding and infection. By the late 1960s, the IUD had fallen into severe disrepute in India for just this reason.²⁰⁴

U.S. fertility surveys also continued to focus on women after the first wave of GAF, despite the original intentions of Freedman and Whelpton to add male respondents when funds permitted. When Freedman turned his attention to Taiwan, OPR demographers Charles Westoff and Norman Ryder took over GAF, carrying out the 1965, 1970, and 1975 waves under the title “National Fertility Survey” (NFS). Though the study was funded by the National Institutes of Health, the Population Council still exerted influence, with Berelson advising Westoff and Ryder. In these surveys, interviewers began to discuss the specifics of various birth control methods with respondents, emphasizing the pill and the IUD, and also

²⁰¹Freedman and Takeshita, see n. 9, 123.

²⁰²Berelson and Freedman, see n. 200, 37.

²⁰³Quoted in Connelly, see n. 8, 230. Connelly attributes the statement to the influence of the work of economist Stephen Enke, discussed in Chapter Four. Enke’s influence on Johnson is well-documented, but he was not the only scientist making cost-benefit analyses in favor of population programs.

²⁰⁴“Reimert Ravenholt, Interview with Rebecca Sharpless for the Population and Reproductive Health Oral History Project,” July 18, 2002, URL: <http://www.smith.edu/libraries/libs/ssc/prh/transcripts/ravenholt-trans.pdf>, 90-91. Richard Easterlin interview, 5/3/2012.

elicited opinions about the acceptability of abortion.

The Population Council also funded family planning experiments in the U.S. during the 1960s, through Bogue's Community and Family Study Center at the University of Chicago. These experiments employed mass communication techniques to promote contraceptive use among Chicago's poor black and Latino residents. Although the studies focused on communication techniques, based on the assumption that poor Chicagoans did not know about birth control or where to get it or how to use it, results indicated that they simply could not afford it. Bogue found that locating family planning clinics closer to the homes of prospective clients increased use of services, but many potential Pill takers could not afford its \$2.50 per-month cost.²⁰⁵ Other methods were not necessarily any cheaper: assuming that condoms cost roughly \$0.25 apiece, for couples who had sex twice a week on average, the cost would have been about the same. Such findings suggest that the \$4,000 spent on communications by the program might have been better spent in subsidies for contraceptive supplies, though Bogue and his colleagues continued to explain relatively low levels of contraceptive use among their study populations in terms of ignorance and carelessness.²⁰⁶ By the end of the decade, African American community leaders had begun to critique such efforts as genocidal, charging that they aimed to eliminate the black population rather than acceding to requests for civil rights. Although Bogue and his colleagues may have had the best of intentions, their premise that adopting contraception and reducing family size would alleviate poverty among black Americans rang hollow, particularly in the context of the continued enforcement of involuntary sterilization laws and *de jure* and *de facto* discrimination in jobs, housing, government programs, and public services.²⁰⁷

Systemic contraceptive methods and fertility surveys that focused on women identified women worldwide as the agents of reproduction, and women in the global south and poor

²⁰⁵John Ross, "United States: The Chicago Fertility Control Studies," *Studies in Family Planning* 1, no. 15 (1966): 3.

²⁰⁶*Ibid.*, 3.

²⁰⁷See Robert G. Weisbord, "Birth Control and the Black American: A Matter of Genocide?" *Demography* 10, no. 4 (1973): 571–590.

and nonwhite women in the U.S. as targets of population control. In contrast to the Puerto Rico study, few KAP studies examined the gender dynamics of fertility or the sexuality of its respondents; most simply focused on women's bodies as the point at which a technological intervention could be made, ideally through the insertion of an IUD. They therefore viewed the IUD and other systemic contraceptive methods as a technological solution to the problem of high fertility that could be implemented without altering the social, cultural, or economic context in which childbearing decisions were made.²⁰⁸

The association of reproduction with women might seem obvious, since reproduction occurs largely inside women's bodies and since reproductive rights have, since the 1960s, become a major focus women's rights activism. But that association was not at all obvious in the early 1950s. Although women are responsible for childbearing and in many places for childrearing, prior to 1960, available methods of contraception required the cooperation — or at least the consent — of both partners, giving men a critical measure of control over family size. However, models of population growth developed between the world wars required only a figure for female fertility rates — rather than the fertility of men or couples — to assess population growth and project population size and structure, as discussed in Chapter One. Demographers using the cohort component projection method calculated future population by subtracting expected deaths and adding expected births to the current population; expected births were calculated as the product of the number of women aged 15–49 and the female fertility rate. Therefore, if Freedman and Whelpton could determine how many children U.S. women planned to have on average, they could project future U.S. population growth.

In contrast to GAF, which aimed only to monitor childbearing intentions, the Puerto Rico study, which aimed to modify fertility, included men in both survey and intervention components, as the methods of contraception then available required their cooperation and consent. With the availability of the Pill or the IUD, however, only women needed to “ac-

²⁰⁸Warwick, see n. 154.

cept” family planning, and the Population Council — through the KAP survey program — began to approach women in the global south as partners in its population control project. Together, the female-centric nature of population models and fertility surveys and the development of contraceptive technologies that worked on women’s bodies turned women into two types of reproductive subjects: those who could be trusted to control their own fertility — middle-class white U.S. women — and those who needed the assistance and prodding of governments and non-governmental agencies — women in the global south and poor and nonwhite U.S. women.

Producing Policy Subjects and Objects

The Population Council continued to advise on the design of U.S. fertility surveys and, under Berelson’s influence, in 1965 the NFS added questions about perceptions of population growth as a policy issue, both in the U.S. and in other countries, asking respondents whether they considered U.S. or world population growth a serious problem and whether they approved of the federal government providing assistance to local or state family planning programs in the U.S. or to family planning programs in other countries. Such questions, by framing population growth as problematic, may have encouraged respondents to view U.S. and world population growth with greater trepidation and possibly to translate those views into their reproductive and political activities. Birth control was still a relatively controversial topic in the U.S. and, until 1965, still illegal in some states. With evidence from the NFS, the Population Council could point to widespread support among U.S. women for legalization of contraception and abortion in the U.S. and for government subsidies for family planning, both at home and abroad.

KAP surveys produced an object of knowledge and policy known as the “KAP-gap,” defined as the “significant (and measurable) fraction of women in Third World Countries who want no more children but who are not using contraception for one reason or another.”²⁰⁹

²⁰⁹Charles F. Westoff, “Is the KAP-Gap Real?” *Population and Development Review* 14, no. 2 (1988):

Berelson, Notestein, and other members of the population establishment pointed to KAP-gaps and to other evidence of demand for family planning services in KAP surveys to pressure governments in the global south to establish or expand family planning services and to accept assistance from the U.S. government or U.S.-based nongovernmental organizations, such as the Population Council and Planned Parenthood. For example, in Turkey, Berelson pointed to a KAP finding that 70% of men and 79% of women approved of the use of contraception, concluding that the “result is a striking mandate, virtually an instruction” and that the Turkish people “very strongly wish that the government would organize a program to inform them about family planning.”²¹⁰ In its analysis of KAP data, the Population Council interpreted *any* expressed interest in limiting family size or desire to have no more children as demand for family planning services, a practice Hauser compared unfavorably to a market study in which “a 70 percent affirmative response to a question of whether the respondent would like to have a jeep constituted a measurement of the market for jeeps.”²¹¹

In 1966, drawing on KAP findings, Berelson drafted a declaration on family planning, stating that “the majority of parents desire to have the knowledge and the means to plan their families; that the opportunities to decide the number and spacing of children is a basic right.”²¹² John D. Rockefeller III solicited the signatures of twelve heads of state (Colombia, Finland, India, Malaysia, Morocco, Nepal, Korea, Singapore, Sweden, Tunisia, the United Arab Republic, and Yugoslavia) and presented the declaration to U.N. Secretary-General U Thant on Human Rights Day, December 10, 1966. By the following year, thirty heads of state had signed on.²¹³ With this resolution, Berelson and Rockefeller transformed the Population

225.

²¹⁰Quoted in Anthony Marino, “Kap Surveys and the Politics of Family Planning,” *Concerned Demography* 3, no. 1 (1971): 48.

²¹¹Philip M. Hauser, “*Family Planning and Population Programs: A Book Review Article*,” *Demography* 4, no. 1 (1967): 404.

²¹²“Statement on Population by World Leaders,” Dec. 10, 1966, folder 5, box 4, series 857; John D. Rockefeller III to U Thant, Dec. 14, 1966, folder 5, box 4, series 857.

²¹³New signatories were Australia, Barbados, Denmark, Dominican Republic, Ghana, Indonesia, Iran, Japan, Jordan, the Netherlands, New Zealand, Norway, Pakistan, the Philippines, Thailand, Trinidad and Tobago, the U.K., and the U.S. “World Leaders Declaration on Population,” 1967, folder 9, box 19, series 288.

Council's activities from potentially genocidal — under the U.N. Convention for the Prevention of the Crime of Genocide, as discussed in Chapter Four — to humanitarian, and made the provision of family planning services — either by governments or by nongovernmental organizations — a prerequisite for membership in the international community.

Following the adoption of this resolution, John D. Rockefeller III headed a commission under the auspices of the United Nations Association of the United States of America to review U.N. population activities. Its final report recommended the establishment of a U.N. “Trust Fund for Population,” which was established in 1969 as the United Nations Fund for Population Activities (UNFPA). UNFPA initially received half of its funds from USAID and, in addition to supporting government-sponsored family planning programs worldwide, also supported many of the same U.S.-based family planning organizations funded by USAID, including the Population Council and the International Planned Parenthood Federation. Additional funding came from other countries in the global north, with the U.K., Japan, and Sweden making the largest contributions. Together, the NFS in the U.S. and KAP studies in the global south constructed white middle-class women in the U.S. as policy subjects who were concerned about population growth at home and abroad, approved of contraception and abortion, and wanted their government to do something about the dangerous fertility of women in the global south and poor and nonwhite women in the U.S., who were constructed by these studies as objects of policy intervention by the U.S., the U.N., and governments in the global south.

Making Populations Surveyable

Despite the political success of the KAP program, the conduct of the surveys garnered substantial criticism from demographers and other social scientists in the U.S. Many of these critiques turned on the validity of cross-cultural survey research, an issue that had become a topic of empirical investigation within the field of survey research, but had received

little attention from KAP investigators.²¹⁴ KAP surveys generally used the same methods of sampling and interviewing as GAF and NFS. Although samples were usually not nationally representative, they were selected according to procedures that had become standard in social survey research over the previous 20 years. Interviewers were recruited locally, trained thoroughly, and equipped with standard questionnaires, with which they were expected to elicit representative and commensurable information. However, critics of the KAP program argued that standard methods of survey research practiced in the U.S. would not produce valid results in other countries, particularly given the assumed cultural differences between the U.S. and most parts of the global south. This critique echoed Kinsey's contention that such methods don't produce reliable results for studies on sensitive topics.

In contrast to the women surveyed for GAF, most KAP respondents had no prior experience with survey research, so the roles of interviewer and respondent and the framework for their interactions were not part of local social repertoires.²¹⁵ Whereas survey interviewers in the United States could draw on the authority of science and of the survey as a familiar instrument of scientific authority, interviewers for KAP surveys tended to rely on the global power of the U.S. and on their own social status as well-educated and often bilingual elites to compel respondent participation.²¹⁶ Because of respondents' lack of familiarity with survey research in general and with the concept of family planning in particular, interviewers — who were usually recruited locally — found themselves “instruct[ing] the respondents concerning the meanings of the questions and...direct[ing] them to relevant responses.”²¹⁷ Critics of the KAP program pointed to inconsistencies in survey answers and to sensitivity analysis — which showed that small changes in the phrasing of a question produced substantial differences in results — to argue that respondents may not have been answering the questions

²¹⁴Robert Edward Mitchell, “Survey Material Collected in the Developing Countries: Sampling, Measurement, and Interviewing Obstacles to Intra- and International Comparisons,” *International Science Journal* 27, no. 4 (1965): 665–685, See, for example,

²¹⁵Harvey M. Choldin, A. Majeed Kahn, and B. Hosne Ara, “Cultural Complications in Fertility Interviewing,” *Demography* 4, no. 1 (1967): 244.

²¹⁶Riedmann, see n. 97.

²¹⁷Choldin, Kahn, and Ara, see n. 215, 247.

investigators thought they were asking.²¹⁸

Critics suggested that thinking about family in quantitative terms was a foreign practice for many KAP survey respondents; therefore, questions about ideal or desired family size were not eliciting long-held opinions, but rather answers respondents thought up on the spot, if they answered at all — KAP interviewers encountered considerable resistance to their questions. Many women refused to answer questions on their husbands' behalf, including questions about age, occupation, level of education, and previous marriages. Many respondents, suspicious that interviewers may be government employees, refused to provide specifics on their income in order to avoid taxation. In many places, women would not answer questions regarding marriage or sex in their husband's presence. Many women simply refused to answer questions about whether or not they wanted another child or to express a preference for a particular number of children.²¹⁹ Some lied outright and even ridiculed interviewers.²²⁰ Others may have supplied answers they knew the interviewers wanted to hear.²²¹ As Agnes Riedmann has pointed out, survey coding methods largely elided nonstandard answers, eliminating evidence of resistance to survey methods from the data and the historical record.²²²

In contrast to the Puerto Rico study, questions about contraception in KAP surveys were just as vague as they had been in the 1955 wave of GAF, mostly avoiding the specific terms “contraception,” “birth control,” and “family planning,” and instead asking respondents if they thought it was permissible to “do something” to prevent having “too many” children or having children “too often,” allowing respondents free reign to interpret those phrases.²²³ One contemporary critic described the KAP interview as follows:

poorly-trained interviewers are sent to question at a very high speed illiterate women on problems they have never heard about in a totally artificial setting

²¹⁸Hill, Stycos, and Back, see n. 78, 26; Marino, see n. 210, 42-43.

²¹⁹Choldin, Kahn, and Ara, see n. 215, 248-250.

²²⁰Riedmann, see n. 97.

²²¹Hauser, “*Family Planning and Population Programs: A Book Review Article*,” see n. 211, 403-404.

²²²Riedmann, see n. 97.

²²³Marino, see n. 210, 47.

(the interview situation) with questionnaires often composed by foreign experts who know little of the local culture, do not even speak the local language or dialects, and have often lived only a few weeks in the country. The results of such surveys tend to become self-fulfilling prophecies, as they nearly all show, in varying degrees, that the people interviewed have favorable opinions toward family planning.²²⁴

Whereas Whelpton and Freedman could be fairly confident that respondents to the GAF survey knew what interviewers meant when they asked about “doing something” to limit family size, critics charged that designers of KAP surveys deliberately used this vague language not to avoid offending respondents’ delicate sensibilities — as had been the case for GAF — but rather because they expected respondents to be more likely to agree if they didn’t know exactly what was being asked.

Critics charged that KAP surveys were designed to produce results that would justify the Council’s programs while making it impossible to test the efficacy of those programs in reducing population growth and spurring economic development.²²⁵ In the late 1960s and early 1970s, a small group of dissident graduate students (who will be discussed at greater length in Chapter Seven) harshly criticized their field, decrying the fact that

demographers are being used as administrators and public relations men for governmental family planning programs around the world. The pages of *Demography* and other population journals have been filled with glowing reports of family planning. To the layman, these reports have the ring of scholarly objectivity and truth. To many professionals, they have become the ultimate in slipshod methodology, half-baked interpretations, and outright lies.²²⁶

The funders and directors of KAP studies paid little attention to the validity issues raised by critics. It is even possible that Berelson recognized that his methods might be artificially increasing the size of the KAP-gap, which was also increased by the inclusion of women who were not at risk of pregnancy or stated that they did not want to use birth control,

²²⁴Quoted in Marino, see n. 210, 42.

²²⁵Marino, see n. 210, 65; Hauser, “*Family Planning and Population Programs: A Book Review Article*,” see n. 211, 407.

²²⁶Editors of *Concerned Demography* 1969, quoted in Greenhalgh, “The Social Construction of Population Science: An Intellectual, Institutional, and Political History of Twentieth-Century Demography,” see n. 20, 44.

but viewed this inflation as a benign exaggeration necessary to provide family planning services to clients who would begin to express demand once services were available and once the Population Council's educational communication programs had created a small-family norm. Berelson frequently pointed to parallels between family planning practices and intentions in the global south, as demonstrated by KAP surveys, and the historical experience of the global north, arguing that family planning programs in the former were replicating the endogenous fertility transition that had occurred in the latter, just as public health programs in the global south had stimulated a mortality transition similar to the one that had been produced through improved living standards in the global north in the nineteenth century, thereby suggesting that family planning was contributing to the natural path of progress described by demographic theory.²²⁷

Critiques of KAP studies, by questioning the validity of survey research conducted among respondents who were not familiar with the survey format, suggests a perhaps inchoate view among demographers that survey research in the U.S. produced valid results not as a function of the sampling and interviewing methods themselves, but rather because respondents had become accustomed to those methods and knew how to provide the expected information. In other words, through practice on a national scale, Americans had become "surveyable" in the sense that they knew how to provide information useful to social science. This critique suggests that KAP studies did much more than elicit the answers the Population Council sought: they also created a populace trained in the survey interaction and therefore surveyable by U.S.-based researchers, just as the sample censuses described in Chapter Three contributed to making populations in the global south enumerable by nascent government statistical agencies.²²⁸ Interviewers trained to administer a standardized questionnaire could easily be reassigned to another study and, with practice, respondents could more easily place themselves into such arbitrary social categories as age, race, ethnicity, and religion,

²²⁷See, for example, Berelson, "National Family Planning Programs: Where We Stand," see n. 153.

²²⁸These concepts are more specific forms of James C. Scott's concept of states rendering subjects "legible." Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, see n. 32.

thereby facilitating future social research. The KAP program of the 1960s was followed by the World Fertility Survey in the 1970s, and today USAID regularly collects information about marriage and fertility through the Demographic and Health Survey.²²⁹

5.3.3 Family Planning Debates

Berelson concluded from the results of the NFS and KAP studies and family planning experiments in the U.S. and in the global south that “if throughout the world unwanted children were not conceived, a large part of the ‘population problem’ would disappear.”²³⁰ He therefore argued that the provision of voluntary family planning services was rapidly solving the world’s “population problem.” By 1970, 22 countries had enacted policies or programs aimed at reducing population growth through the provision of family planning: Ceylon (Sri Lanka), China, Ghana, India, Indonesia, Iran, Jamaica, Kenya, Malaysia, Mauritius, Morocco, Nepal, Pakistan, the Philippines, Singapore, South Korea, Taiwan, Thailand, Trinidad and Tobago, Tunisia, Turkey, and the United Arab Republic (Egypt). Another 16 — Barbados, Chile, Colombia, Costa Rica, Cuba, Dahomey, the Dominican Republic, Ecuador, El Salvador, Gambia, Honduras, Hong Kong, Nicaragua, Nigeria, Panama, and Venezuela — welcomed the provision of family planning services by non-governmental organizations, such as the Population Council and the International Planned Parenthood Federation. In Pakistan, family planning programs employed more people than any other sector except the military and the railroad.²³¹ However, not all demographers agreed with Berelson’s assessment. This section explores the thought of two demographers: Donald Bogue, who enthusiastically agreed with Berelson, and Kingsley Davis, who — along with Judith Blake — questioned the ability of voluntary family planning programs to effectively limit population growth and challenged individual-level explanations of fertility and family size.

²²⁹<http://www.dhsprogram.com>.

²³⁰Berelson and Freedman, see n. 200, 31.

²³¹Bogue, “Progress and Problems of World Fertility Control,” see n. 195, 539.

Donald Bogue's "Contraception Adoption Explosion"

At the PAA's 1964 meeting, Bogue, then president of the Association, presented an address titled "The Demographic Breakthrough: From Projection to Control," in which he described the successes of KAP studies and family planning experiments carried out in 1963, including those in Ceylon (Sri Lanka), East Pakistan (Bangladesh), Hong Kong, India, Malaysia, Puerto Rico, Singapore, South Korea, Taiwan, and West Pakistan (Pakistan). He argued that results of these studies "left no doubt that by planned intervention they had induced a downward change in the birth rate in high-fertility populations."²³² He went on to qualify this assessment, acknowledging that the studies had not "clearly demonstrated that the birth rate of a population of major size in an underdeveloped nation has been genuinely slackened by a fertility-control program," but he suggested that such slackening probably had occurred, and "we merely lack the methodology to measure it quickly."²³³ Bogue predicted that "refinements [to family planning programs] that will be made in the next five to ten years, may well lead to social-engineering work that will have as great an impact upon the course of human history as any of the major inventions or discoveries in the physical sciences."²³⁴ With this statement, Bogue compared population control to other engineering and development projects: a dam to hold back the flood of humanity. He shared Berelson's faith that the IUD and other contraceptive technologies were technologies of modernization that, once adopted on a large enough scale, could trigger the modernization process.

By 1967, more than half of the denizens of the global south lived in countries with government-sponsored family planning programs explicitly intended to reduce birth rates.²³⁵ In that year, Bogue published an article in *Public Interest* titled "The End of the Population Explosion," in which he argued that the spread of intensive family planning programs throughout the global south would solve "the population problem," producing global pop-

²³²Bogue, "The Demographic Breakthrough: From Prediction to Control," see n. 182, 449.

²³³Ibid., 449.

²³⁴Ibid., 450.

²³⁵Frank W. Notestein, "The Population Crisis: Reasons for Hope," *Foreign Affairs* 46, no. 1 (1967): 171.

ulation stationarity by the end of the century.²³⁶ Bogue contended that existing population projections were misleading because they did not account for the results of KAP surveys that showed a desire for smaller families and openness to birth control as a means of producing them, support for family planning programs among heads of state in countries with high fertility, the development of family planning as a field of professional research with strong philanthropic support, a slowing of the progress of mortality decline, social and psychological change, and new contraceptive technologies. To describe the import of these factors, Bogue re-purposed the language of the “population explosion,” predicting that “the world is on the threshold of a ‘contraception adoption explosion,’” evidence of which, he argued, would be available as early as the censuses of 1970.²³⁷

Bogue contended that efforts by his Community and Family Study Center, by Freedman’s Population Studies Center, and by the Population Council and Ford Foundation to promote the provision and uptake of contraception in the global south had produced a “social revolution,” making past population dynamics — including Europe’s demographic transition, which had been unassisted by modern family planning programs — an invalid predictor of future population change. He dismissed all existing population projections, arguing that “demographers who continue to try to foresee the future of world population growth right now by carefully fitting curves to time series or to seek the roots of matrices summarizing masses of age-specific historical information in the search for hidden indicators of the future are making extrapolations from invalid premises.”²³⁸ While Bogue did not reject these methods absolutely, he contended that “in times of social revolution it often is fruitless to forecast the future on the basis of past experience.”²³⁹ Bogue presented an alternative projection of future world population that aimed to take this “social revolution” into account. But although he argued that social changes made it impossible to predict the future on the basis of the past,

²³⁶Donald Bogue, “The End of the Population Explosion,” *Public Interest* 7 (1967): 11–20.

²³⁷*Ibid.*, 19.

²³⁸Donald Bogue, “The Prospects for World Population Control,” in *Alternatives for Balancing World Food Production and Needs*, ed. Iowa State University Center for Agricultural and Economic Development (Ames: Iowa State University Press, 1967), 74.

²³⁹*Ibid.*, 74.

he did not propose any systematic way to use social or economic factors, or even rates of contraception uptake, to predict future vital rates. Instead, he simply assumed that the rate of world population growth had peaked in 1965 and that “from 1965 onward, therefore, the rate of world population growth may be expected to decline with each passing year. The rate of growth will slacken at such a pace that it will be zero or near zero at about the year 2000.”²⁴⁰ These assumptions produced a total world population of 5 billion in the year 2000, as compared to the 1963 U.N. projection of 6.1 billion, which was much closer to actual world population in the year 2000.²⁴¹ This projection, in both method and outcome, differed much less from other projections made at the time than Bogue’s rhetoric would lead one to expect. It preserved demographic transition theory’s faith that populations must eventually become stationary (that is, neither growing nor shrinking), and retained the dominant assumption of population projection that growth rates were on a downward trajectory toward zero that was caused by changes in social, economic, and political factors, but not formally correlated with them in the model. Bogue simply made that trajectory much more rapid than other demographers did, so that stationarity or near-stationarity would be reached by the end of the century. Bogue was still fitting curves, just steeper curves than other demographers were fitting.

Bogue attached the standard disclaimer to his projection, emphasizing that it did not indicate what future population necessarily *would* be, only what it *could* be with continued investment in family planning programs. In so doing, he highlighted the fact that *all* population projections are based on untestable assumptions about the future; his assumptions were simply more optimistic than others, if population growth is viewed as a crisis. Bogue explicitly referenced the performativity of population projections — their effects on future population growth — arguing that the pessimism of constant-fertility projections — which activists claimed showed what population would be in the absence of policy change

²⁴⁰Bogue, “The End of the Population Explosion,” see n. 236, 9.

²⁴¹Hania Zlotnik, “Population Projections and World Population Trends,” in *Demography*, ed. Zeng Yi (Oxford: Encyclopedia of Life Support Systems, n.d.).

— “sapped the morale of family planning workers in the developing countries,” and thereby contributed to the prevention of fertility decline.²⁴² In contrast, he intended his projections to show family planning workers “how close they actually are to success” and to motivate them further by demonstrating that “they have it within their grasp to improve dramatically their countries’ fortunes.”²⁴³ Such explicit acknowledgment of the effects of population projection on population change itself is rare among demographers, and Bogue was severely criticized for openly advocating on behalf of the future he predicted, rather than “approach[ing] the problem with the detachment of a researcher.”²⁴⁴ Hauser criticized Bogue’s work as “extreme crusading efforts that had... no place in a department of sociology,” casting his projection as activism rather than science and eliding the fact that many population projections had activist intentions, as discussed in Chapter One.²⁴⁵

The response of Bogue’s colleagues to his projection suggests that other demographers were well aware of the effects of population projections on population policy and population growth. However, they feared that — rather than promoting increased effort and expenditure on family planning programs, as Bogue believed — Bogue’s optimistic figures would lead governments — particularly the U.S. government, which had budgeted \$35 million for overseas family planning programs in fiscal year 1968 — to think that the “population problem” had been solved and that no further investment or effort was necessary. Dudley Kirk, demographic director of the Population Council, objected that “one does not see the growing use of the new contraceptives even in combination with existing and foreseeable new methods, quickly closing the enormous gap” between fertility in the global north and global south, as Bogue’s projection assumed with population growth converging to zero.²⁴⁶ Ansley Coale, in a letter to Sander Levin, Assistant Administrator for Development Support at USAID, critiqued the factual basis of Bogue’s projection, pointing out that “in all of the

²⁴²Bogue, “The End of the Population Explosion,” see n. 236, 10.

²⁴³Ibid., 10.

²⁴⁴Karol J. Krotki, “Discussion: Prospects for Population Control,” *Journal of Farm Economics* 49, no. 5 (1967): 1102.

²⁴⁵See n. 116, 48.

²⁴⁶Kirk, “Natality in the Developing Countries,” see n. 184, 92.

countries he lists in Eastern Africa, except Mauritius and Reunion, there are just no sound data indicating a decline in fertility. In fact there are no recent census or survey data and no vital registration.”²⁴⁷ Presumably, this paucity of data would have hindered any efforts at population projection, but Coale criticized only Bogue’s efforts, promoting the idea that out-of-control fertility in these places required U.S. government intervention. Kirk and Coale’s critique of Bogue’s projection suggests their recognition that family planning programs in the global south were not having the intended effect on world population growth. However, rather than suggesting a different approach, they simply argued for increased investment and effort. In fact, the rate of population growth *had* reached its peak in 1965, as Bogue claimed, but this fact would not become apparent until the censuses of 1970, and subsequent fertility decline did not occur as rapidly as Bogue predicted.

The Structural Approach of the Berkeley Demographers

Also in 1967, Davis published an article in *Science*, titled “Population Policy: Will Current Programs Succeed?” This article challenged Bogue’s optimism, setting off a public debate with the demographers associated with the Population Council over the ability of family planning programs and small-family propaganda to slow global population growth. Davis demonstrated that KAP studies had shown a strong desire for upwards of three children among respondents in the global south, and that family planning experiments and pilot programs had indicated that “acceptors” of family planning tended to be older couples who had already achieved large families rather than younger couples who sought to plan small families. He contended that the Population Council’s technological solution to “the population problem” had not produced the “social revolution” that Bogue had claimed, and that reducing fertility to the replacement level (the level at which population is stationary and neither grows nor shrinks) would require an actual revolution in gender relations to produce the structural change that would promote family planning uptake.

²⁴⁷ Ansley J. Coale to Sander Levin, Oct. 17, 1978, folder 1, box 2.

Judith Blake, Davis's colleague, wife, former student, and occasional collaborator — who had gone to graduate school on a Population Council fellowship — had been making similar arguments over the preceding years. She argued that KAP surveys consistently revealed a desire for at least four children, meaning that even with the universal availability of family planning services, world population would continue to grow.²⁴⁸ Blake also expressed doubt that educational and propaganda programs of the types implemented in family planning experiments could effectively reduce desired family size because “to date we have no compelling reason to believe that developing peoples will ever be merely propagandized or ‘educated’ into wanting really small families.”²⁴⁹ In contrast to Notestein, who had argued that family planning was in the interests of parents or prospective parents, even if they didn't realize it, Blake and Davis acknowledged that large families could be socioeconomically advantageous, in both the global north and the global south. A decade earlier, they had published an article explaining exactly how the institution of the family produced high fertility in agrarian societies: young couples lived with or in close proximity to their parents, who provided free child care; women's status in their husbands' families depended on the children they bore; inheritance systems required the production of sons.²⁵⁰ However, even though Blake and Davis recognized that large families could be in parents' interests, they contended that “there is no reason to expect that the millions of decisions about family size made by couples in their own interest will automatically control population for the benefit of society. On the contrary, there are good reasons to think they will not do so.”²⁵¹ This statement echoed in reverse the anxiety of interwar population experts, who had identified family limitation in Europe as being in the interest of individual couples but detrimental to society as a whole, as discussed in Chapter Two.²⁵² Blake and Davis's critiques of the Population Council's approach to population control never questioned the necessity of population control, only the

²⁴⁸Blake, “Demographic Science and the Redirection of Population Policy,” see n. 194, 1183.

²⁴⁹Ibid., 1184.

²⁵⁰Davis and Blake, see n. 60.

²⁵¹Kingsley Davis, “Population Policy: Will Current Programs Succeed?” *Science* 158, no. 3802 (1967): 730–739.

²⁵²See, for example, Marshall, see n. 21.

efficacy of voluntary family planning programs to achieve it.

In contrast to the demographers affiliated with the Population Council, who believed that family planning programs could reduce fertility without changing the systems of gender inequality within which childbearing decisions were made, Davis and Blake argued that fertility reduction would require a complete overhaul of gender norms and relations: “modification of the complementarity of the roles of man and women,” by which they meant “restructur[ing] both the occupational system and the domestic establishment to the point of permanently modifying the old division of labor by sex.”²⁵³ Davis continued to believe, as he had since the 1940s, that “reductions in mortality require only a change of means, but reductions in fertility require changes in both ends and means,” suggesting that fertility reduction required an alteration of the entire social structure of childbearing.²⁵⁴

The Population Council and the demographers associated with it responded to Davis’s challenge, and the debate continued over the next two years in the pages of *Science* and *Demography*, culminating in Bernard Berelson’s well-known 1969 article, “Beyond Family Planning.”²⁵⁵ While other critics of population control programs have pointed to this article as a signal that the Population Council and other population control organizations had begun to embrace more coercive methods of population control, it is actually a critique of coercive methods increasingly being proposed by other organizations, particularly Paul Ehrlich’s Zero Population Growth, which will be discussed in Chapter Six. In the article, Berelson examined and rejected all of the proposals for going “beyond family planning,” as either technologically, administratively, economically, or politically infeasible. Even the suggestion of encouraging female labor force participation, he warned, “runs up against the political problem that such employment would be competitive with men in situations of already high male unemployment and underemployment.”²⁵⁶ Berelson’s objections to proposals to go “beyond family planning” highlights the strategy the Population Council had taken from its formation: to reduce

²⁵³Davis, “Population Policy: Will Current Programs Succeed?” See n. 251, 738.

²⁵⁴Notestein to Zarate, June 6, 1967, see n. 22.

²⁵⁵Bernard Berelson, “Beyond Family Planning,” *Science* 163, no. 3867 (1969): 533–543.

²⁵⁶*Ibid.*, 536.

population growth without changing underlying social structures or stimulating political opposition, either in the U.S. or in the global south, as discussed in Chapter Four. For the Population Council, maintaining the geopolitical and geoeconomic order was not only a higher priority than reducing population growth; it was also the end to which the organization directed population control. In his article, Berelson reiterated that “strong political pressures [by the U.S.] to effect population control in developing countries seems more likely to generate political opposition abroad than acceptance. It is conceivable that such measures might be adopted here, but it is hardly conceivable that they would be agreed to by the proposed recipients. Such a policy seems likely to boomerang against its own objective.”²⁵⁷

The debates between Davis and Blake and the Population Council and its affiliated demographers demonstrates that, despite the Population Council’s influence over the content of demographic scholarship, the economic overpopulation discourse and the individual-level explanations of fertility and approaches to population control it promoted were not monolithic during the 1960s. Davis and Blake were the main proponents within demography of the alternative structural explanation of high fertility and some of the very few scholars to examine the role of gendered divisions of power in the family and society. As discussed above, their training was more firmly grounded in sociology than was that of Notestein or Coale, which may have increased their attention to structural factors. They also relied less on funding from the Population Council and the Ford Foundation than did demographers at Princeton University and the Universities of Michigan and Chicago, and therefore may have had more latitude to engage alternative approaches. Finally, their geographical distance from the New York headquarters of the Population Council and the Ford Foundation, and their proximity to the California environmental movement, which will be discussed in Chapter Six, likely also influenced their approach.

²⁵⁷Berelson, “Beyond Family Planning,” see n. 255, 536.

Conclusion

Falling mortality and rapid population growth in the global south after World War II raised the concern of powerful U.S.-based philanthropic interests, as described in Chapter Four, who in turn raised unprecedented funds for the field of demography, which the Population Council and the Ford Foundation viewed as a key ally in producing anxiety about population growth among governments worldwide and generating governmental support for the provision of family planning services as a solution to “the population problem.” This chapter has demonstrated that investments in demography by the Population Council and the Ford Foundation stimulated the dramatic expansion of the field in the United States through the establishment of population research centers at U.S. universities. These organizations also funded the training of students from the global south in demography and the establishment of population research centers in the global south. The Rockefeller and Ford Foundations also funded the establishment of demography-specific journals in the U.S. and the U.K., providing outlets for the publication of the research they supported. Under the influence of these new patrons, demography research focused increasingly on fertility and its reduction in the global south, though separated fertility from analysis of gender or sexuality.

Beginning in the 1950s, survey research became a key component of demography’s toolkit for investigating fertility, both in the United States and in the global south. These surveys were often accompanied by experimental family planning studies aimed at reducing fertility among women in the global south and poor and nonwhite women in the U.S. In addition to these stated aims, the surveys shaped public and policy opinion regarding family planning and its provision by the U.S. government and governments in the global south, turning access to family planning into a human right recognized by the U.N. and supported by its Fund for Population Activities. These studies supported the understanding of global poverty as a biological problem — caused by population growth — with a technological solution — new contraceptive technologies that could be effective even in societies where parents had little

desire or motivation to limit the size of their families and where women's status depended on childbearing.

This view, though dominant, was not universal. Kingsley Davis and Judith Blake attributed large families not to the lack of effective contraception, but rather to patriarchal social structures that incentivized large families. Along with this alternative understanding of population growth, they offered an alternative structural proposal for population control. Although Blake and Davis challenged the Population Council's approach to slowing population growth, they never challenged its view of population growth as a serious problem. For that reason, Debates between Bogue, Davis, Blake, and the Population Council about the efficacy of family planning programs to reduce population growth served to reinforce the predominant understanding — among scientists, activists, publics, and governments — that worldwide population growth remained a serious problem. Whether, as Bogue argued, family planning programs were swiftly reducing fertility or, as Davis argued, they barely made a dent, all participants in the debate had already accepted the premise that global population growth presented a barrier to economic development and needed to be stopped.

Chapter 6

The Population Bomb Squad

Kingsley Davis's 1967 *Science* article signaled and contributed to a shift in the public and scientific understandings of global population growth. As discussed in Chapter Four, two new overpopulation discourses had emerged among U.S.-based scientists, publics, philanthropists, businessmen, and policy makers after World War II. The economic overpopulation discourse, which was the focus of the two previous chapters, initially gained more attention and support, as it described population growth in the global south as a major threat to U.S. global political and economic supremacy in the Cold War context. While demographic scholarship provided support for the economic discourse, it was largely silent on the environmental discourse, with the exception of work by Davis and some of his associates.

Davis and Blake did not have the same ties to the Population Council that the demographers of Princeton University and the Universities of Michigan and Chicago had, but they had an additional source of funding: the Conservation Foundation, which had been established in 1948 by Fairfield Osborn and Laurance Rockefeller to promote population control as a conservation measure. These men, along with Davis and William Vogt, had linked population to the environment through agriculture, arguing that the intensive agriculture necessary to feed the world's growing population was not sustainable and would deplete the world's soil, ultimately reducing the Earth's carrying capacity.¹ Over the next two decades, increases in the use of such agricultural inputs as irrigation and synthetic fertilizer further reduced the sustainability of industrial agriculture, while U.S. foreign policy and philanthropic efforts spread these new agricultural methods to the global south. By the mid-1960s, new environmental concerns had emerged, including pollution — brought to U.S. public atten-

¹See, for example, Davis, "Population and Resources in the Americas," see n. 65.

tion by the 1962 publication of Rachel Carson's *Silent Spring* — and resource depletion. In the 1960s, the environmental overpopulation discourse incorporated these concerns. It also began to present population growth worldwide — but particularly in the global north, where per-capita rates of pollution and resource depletion were higher — as an imminent threat to human survival.

This chapter brings the focus of analysis back to the United States, examining the growing influence of the environmental overpopulation discourse on U.S. public opinion and policy in the 1960s, and particularly the relationship of demography to this discourse. Existing histories of population thought and politics in the U.S., including Connelly's *Fatal Misconception*, Hoff's *The State and the Stork*, and Robertson's *The Malthusian Moment*, have failed to distinguish between economic and environmental discourses of overpopulation, instead presenting environmental and economic concerns about population growth simply as constituent parts of a broader Malthusianism. By paying attention to the role of demography and its patrons and clients, however, this chapter untangles the tensions between these two discourses, and particularly the antagonism of most U.S.-based demographers to the environmental overpopulation discourse and environmentally-motivated calls for population control.

In this chapter, I focus on a fairly narrow slice of time — from the publication of Davis's article in 1967 to the 1972 U.N. Conference on the Human Environment. I demonstrate that population activist Hugh Moore, though mainly concerned with the potential economic and political consequences of population growth in the global south — as described in Chapter Four — helped to popularize the environmental overpopulation discourse as a means of generating public support in the U.S. for increased funding of USAID population control programs in the global south. As I show in this chapter, the economic and environmental overpopulation discourses had closely intertwined origins and overlapped considerably: proponents of the environmental discourse did not dispute the contention that population growth was a major cause of poverty and political instability. However, while proponents of the economic

discourse promoted population control as a stimulus to economic development, proponents of the environmental discourse opposed further economic development anywhere in the world and called for population *reduction* to preserve current living standards without further damaging the environment. I demonstrate that, while the environmental overpopulation gained the support of natural scientists — notably biologists Paul Ehrlich and Garrett Hardin — most demographers — with the notable exception of Davis — harshly criticized the environmental overpopulation discourse, pointing out that environmental degradation worldwide had far outpaced population growth and calling for market-based solutions. Nonetheless, I argue that the environmental overpopulation discourse was particularly attractive to the U.S. white middle class, as it explained urban strife, continuing poverty, and environmental degradation in the United States — all coming to a boiling point in the 1960s — in biological terms — a result of population growth — and offered a technological solution — birth control. The environmental discourse also attracted the support of the growing political left to population control by aligning it with the antiwar movement and the movement for women’s rights, while maintaining support on the right through proposals to limit immigration and attributing student unrest to the large size of the baby boom generation. However, I argue that, by attracting public and policy attention to population growth in the U.S., the environmental discourse also stimulated research into America’s “population problem” by social and computational scientists, and that this research began to undermine support for both the environmental and economic overpopulation discourses.

6.1 The Environmental Overpopulation Discourse

This section traces the growing visibility and influence of the environmental overpopulation discourse from the late 1960s to the early 1970s. I demonstrate that Moore and Draper began to promote the environmental discourse as part of a new advertising campaign designed to increase public support for government funding of population control in the global south.

Although Moore and Draper were mainly concerned with the spread of communism in the global south, they sought to raise anxiety about population growth among U.S. voters by attributing to it problems closer to home, including urban poverty and strife, crime, and pollution. Natural scientists also began to consider human population growth as a factor in ecosystem degradation, most notably Stanford University biologist Paul Ehrlich, who rapidly became a public figure with the 1968 publication of his book *The Population Bomb*, which borrowed from Hugh Moore not only its title, but also its concern with the spread of communism, adding to it growing environmental anxieties. I argue that Ehrlich's book linked the political and economic concerns of Moore and Draper with the antiwar and environmental movements, generating support for population control across a rapidly-dividing political spectrum, embodied in the grassroots organization Zero Population Growth.

6.1.1 A New Manhattan Project

Even after the U.S. government approved the addition of family planning to the work of the Agency for International Development (USAID), discussed in Chapter Four, Dixie cup inventor Hugh Moore and General William Henry Draper Jr. continued to fear that population growth in the global south would increase vulnerability to communist revolution, threatening the access of U.S. manufacturers to the raw materials, labor, and markets they depended on worldwide, and threatening the access of the U.S. military to strategic bases. USAID established an Office of Population in 1966, under the direction of Reimert Ravenholt, formerly a faculty member at the University of Washington Medical School. Ravenholt soon discovered considerable opposition among USAID mission directors to the direct provision of contraceptives to countries receiving aid, as Congress had not explicitly designated any funds for family planning, and providing contraceptives would have diverted scarce resources from other development projects. Only a miniscule portion of the vast USAID budget for overseas development came in the form of grants: India, for example, received \$250 million in aid from the U.S., but only \$8 billion was granted outright; the rest was loaned. Realizing

that countries receiving aid would not use loans to pay for population control programs, Ravenholt enlisted the assistance of Moore and Draper to increase the amount of aid money available in direct grants to population programs.²

Moore and Draper quickly planned and launched a new strategy to generate public pressure on Congress to earmark foreign aid money specifically for population control. Keeping with the theme of nuclear warfare initiated with Moore's "Population Bomb" pamphlet, Moore and Draper dubbed the strategy the "Manhattan Project."³ The Manhattan Project involved a new set of newspaper advertisements. In contrast to those published earlier in the decade, which had focused on population growth in the global south as a threat to U.S. political and economic hegemony — discussed in Chapter Four — Moore and Draper's later ads aimed to bring "the population problem" home to U.S. citizens. Advertisements in the late 1960s blamed U.S. population growth for the poverty, urban strife, and pollution that had become critical concerns of President Johnson after his 1964 election. This new strategy was based on the theory that "the average man is much more concerned with conditions he can see in this country than in far-away Asia."⁴

A full-page advertisement Moore placed in the *New York Times* in 1968 (Figure 6.1a) showed a young man preparing to stab an elderly man, with text informing readers that

city slums — jam-packed with juveniles, thousands of them idle — breed discontent, drug addiction and chaos. And crime in the cities is not the only problem. We have air and water pollution in wide areas. And the quality of life in this great country of ours is deteriorating before our eyes with the rapid increase of people. Is there an answer? Yes — birth control is one.⁵

Another ad published in the same year (Figure 6.1b) displayed a graph showing that crime had increased along an apparently exponential trajectory since 1960, with a headline stating "This is the crime explosion... and the population explosion is an underlying factor."⁶

²See n. 204, 90.

³"Manhattan Ad Schedule," Feb. 2, 1968, folder 8, box 17.

⁴Hugh E. Moore to Emerson Foote, Harry Hicks, and J. Drew Catlin, Jan. 5, 1968, folder 8, box 17.

⁵Hugh E. Moore, "Have You Ever Been Mugged?" Advertisement, Mar. 10, 1968, *The New York Times*, p. E5.

⁶Hugh E. Moore, "This is the Crime Explosion," advertisement, Dec. 8, 1968, *The New York Times*, p.

These advertisements and others like them offered up population growth as a single and simple explanation for crime, poverty, and pollution, eliding such factors as structural inequality, inadequate municipal services, and industrial practices (related to both pollution and employment).



Figure 6.1: a. Advertisement in *The New York Times*, March 10, 1968; b. Advertisement in *The New York Times*, December 8, 1968.

Moore’s associates also proposed advertisements that directly attributed poverty to large families, including one that showed a couple with eight children and a headline reading “We spend over \$4 billion a year on welfare. Yet we spend only \$24 million a year to get to the cause of the problem” (Figure 6.2).⁷ This ad linked the older Malthusian trope — attributing poverty to large families and the sexual indiscretion of the poor, discussed in Chapter One — with the emerging trope of new welfare programs producing “dependency” among those they aimed to help, and thereby promoting the female-headed households that increasingly bore the brunt of social scientific explanations for poverty and social unrest, such as Daniel

⁷Hugh E. Moore, “Advertisement proposals,” n.d., folder 25, box 16.



Figure 6.2: Advertisement proposed by Moore’s associates.

Patrick Moynihan’s *The Negro Family: The Case for National Action* (1965).⁸ These new discourses of crime and welfare dependency were gendered, raced, and sexualized, centering around the image of the “welfare queen,” a depiction of welfare recipients as “lazy, sexually promiscuous, African American women who spawned the criminal ‘culture of poverty’ in America’s inner cities.”⁹

Moore and his associates took care to avoid direct attribution of the “population explosion” to nonwhite Americans or to the poor, making an effort to avoid charges of racism by picturing only white people in their crime and poverty ads and by using such phrases as “inner cities” and “welfare” to signal race without actually naming it.¹⁰ Yet internal mem-
 oranda put the blame for such problems not on population growth generally, but on the

⁸Jill Quadagno, *The Color of Welfare: How Racism Undermined the War on Poverty* (New York: Oxford University Press, 1994); O’Connor, *Poverty Knowledge: Social Science, Social Policy, and the Poor in Twentieth-Century U.S. History*, see n. 94.

⁹Julilly Kohler-Hausmann, “‘The Crime of Survival’: Fraud Prosecutions, Community Surveillance, and the Original ‘Welfare Queen,’” *Journal of Social History* 41, no. 2 (2007): 329.

¹⁰Paul Krugman refers to such phrases as “racial dog-whistles” because they signify only to those trained to hear them. Paul Krugman, “That Old-Time Whistle,” *The New York Times*, Mar. 16, 2014, URL: <http://www.nytimes.com/2014/03/17/opinion/krugman-that-old-time-whistle.html>.

indiscriminate reproduction of the poor and nonwhite. As one memo claimed, “this black population explosion is the cause of 99% of riots and crime. As long as our politicians condone multiple births to the illiterate and degenerate, our nation will suffer more and more before being destroyed from within, making it easy for the Russians and Red Chinese to come in and take over without firing a shot.”¹¹ Such rhetoric reflects the fear of communist revolution at the heart of Moore’s efforts.

The racial subtext of these advertisements was readily apparent to newspaper readers, drawing criticism from many quarters, perhaps most vocally from Planned Parenthood, one of the major beneficiaries of Moore’s fundraising efforts. In a 1968 press release, the Executive Committee of Planned Parenthood - World Population excoriated Moore and Draper’s “Have You Ever Been Mugged?” ad, stating “it is our belief that its utter lack of humanity, its fallacious single focus on the poor and its implied plea for coercive control of the fertility of certain segments of the U.S. population are destructive of the deep human concern for the rights, dignity and health of the individual for which this organization has campaigned for more than 50 years.” The press release continued,

it is a fact that population growth in the United States is mainly caused not by the poor but by middle and upper income Americans who have an average of three children per family. Therefore, the implication that the U.S. population explosion is a slum phenomenon is patently untrue. Nor certainly are the poor responsible for the pollution of our air and water and the deterioration of our quality of life. As the President’s Commission on Crime pointed out, the poor are the primary victims of crime; they are also the chief victims of our failure to provide voluntary birth control help through the tax-supported services on which they depend for health care. . . . They don’t need ‘population control.’ They need family planning services.¹²

Other critics argued that the advertising campaign’s focus on childbearing among the poor seemed to excuse “wonton procreation by rich people at the expense of the poor,” who were most vulnerable to the effects of the resource depletion and pollution caused by the world’s

¹¹ “Untitled Memorandum,” 1968, folder 24, box 16.

¹² Planned Parenthood - World Population Executive Committee, “Resolution,” Mar. 14, 1968, folder 8, box 17.

wealthy.¹³

Over the next three years, Moore and Draper's advertising campaign received much more positive than negative feedback, not only from the public, but also from policy makers, including the Nixon administration, World Bank president and former Secretary of Defense Robert McNamara, and Senators and congressional Representatives of both major parties.¹⁴ These ads told readers that population growth "is your problem and *you can do something about it*. Tear out this ad and send it to anyone in Washington you think might be helpful. Urge the Government to initiate a *crash program* to deal with the population problem."¹⁵ In addition to the public pressure created by these ads, Moore and Draper put direct pressure on Senator William Fulbright, chair of the Senate Foreign Relations Committee, who engineered the passage of the Title X amendment to the Foreign Assistance Act, earmarking funds for USAID's population program, as discussed in Chapter Four.¹⁶ These earmarks subsequently rose from \$35 million in fiscal year 1968 to \$121 million in fiscal year 1972, as USAID funding for health care simultaneously fell from \$131 million in fiscal year 1968 to just over \$35 million in fiscal year 1972.¹⁷

After the criticism of their crime and poverty ads, Moore and Draper focused their advertisements more on the environment, attributing the air and water pollution that were becoming a matter of increasing concern for the U.S. public and U.S. government to the sheer number of people in the United States. A 1968 ad showed a man drinking water, with the headline "Warning: The water you are drinking may be polluted" (Figure 6.3a) The text below the image attributed pollution to "the rapidly rising population of the United States" and explained that "our population is rising so fast, water purification methods simply can't keep pace."¹⁸ A proposed ad that never made it into print (Figure 6.3b) read "Every day we

¹³Erich Goldmeier to Hugh E. Moore, May 12, 1968, folder 9, box 17.

¹⁴See Hugh Moore Papers, folders 11-12, box 17, Princeton University Library.

¹⁵"Are You Afraid to Go Out at Night?" May 25, 1968, folder 9, box 17.

¹⁶See n. 204.

¹⁷Public Law 90-137 1967, see n. 204, 92; For USAID expenditures on population and health, see Julian L. Simon, "Resources, Population, Environment: An Oversupply of False Bad News," *Science* 208, no. 4451 (1980): 1433.

¹⁸Hugh E. Moore, "Warning: The Water You Are Drinking May Be Polluted," advertisement, June 12,



Figure 6.3: a. Advertisement in *The New York Times*, June 12, 1968; b. Advertisement proposed by Moore’s associates.

dump the waste products of 150 million people into our water. And then we drink it.”¹⁹ Such advertisements elided the industrial sources of pollution in the U.S., presenting pollution as a direct consequence of the growing population.

Moore and Draper’s ads also tied pollution back to crime and poverty, presenting population growth as the ultimate cause of all of these problems. A 1969 ad (Figure 6.4) asked readers “How many people do you want in your country?” Below, it read,

Let’s take a look at conditions in our country as they exist today with our present population of 200 million Americans. Our waters — rivers, lakes and beaches — are polluted. We are literally deafened by noise, and poisoned by carbon monoxide from 100 million cars. Our city slums are packed with youngsters — thousands of them idle, victims of discontent and drug addiction. And millions more will pour into our streets in the next few years at the present rate of procreation. You go out after dark at your peril. Last year one out of every four hundred Americans was murdered, raped or robbed.²⁰

1968, *The New York Times*, p. 48.

¹⁹Moore, “Advertisement proposals,” see n. 7.

²⁰Hugh E. Moore, “How Many People Do You Want in Your Country?” Advertisement, May 25, 1969,

How many people do you want in your country?

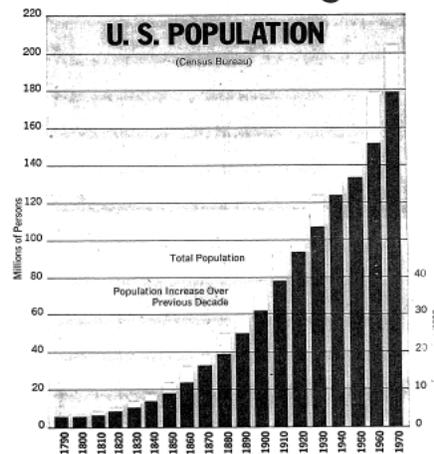


Figure 6.4: Advertisement in *The New York Times*, May 25, 1969.

But, the ad continued, “birth control is an answer.”²¹ Yet another set of advertisements linked poverty and pollution by pointing to the cost to taxpayers of addressing both issues. An ad run in the *New York Times* on April 15, 1968 implied that taxpayers were financing runaway population growth, stating

Today is April 15th. The last day to pay your taxes. If you think they were high this year, wait 'til next year. And the next year. And the year after that. As our population has increased, so have our needs. And as our needs have increased, so have our costs. Today the ever-mounting costs of welfare, education, pollution control, conservation and other services — important as they are — threaten to overwhelm and overtax us.²²

Moore and Draper’s “Manhattan Project” advertisements appeared at a moment when many Americans feared their country was coming apart. The Vietnam War was beginning

The New York Times, p. E5.

²¹Moore, “How Many People Do You Want in Your Country?” See n. 20.

²²“Population Committee ‘Taxes’ Headline and Sample Text,” 1968, folder 24, box 16.

to seem increasingly unwinnable, particularly after the Tet Offensive occurring earlier that year. Opinion regarding the war was rapidly dividing the U.S. and reducing U.S. credibility worldwide. The failure of civil rights legislation passed earlier in the decade — the 1964 Civil Rights Act and the 1965 Voting Rights Act — to measurably change the living conditions of African Americans led to violent confrontations between citizens, law enforcement, and the National Guard across the nation's cities between 1965 and 1968. Industrial pollution was becoming increasingly visible. The population of the U.S. had grown dramatically since the end of World War II, from about 140 million in 1945 to 200 million in 1968, a growth rate of about 1.5% per year.²³ Much of this growth had resulted from the baby boom — the sharp wartime and postwar fertility increase discussed in Chapter Three — and therefore corresponded with a more youthful age structure. The antiwar movement and the movements for civil and women's rights drew massive support from this younger generation, generating anxiety among older and more conservative Americans that this recent population growth was producing the same kind of political instability in the U.S. that they feared it would produce in the global south.²⁴ Around the same time, intellectuals other than demographers were beginning to write books for popular audiences attributing worldwide disaffection and unrest to population growth, as will be discussed in the following section.

6.1.2 Paul Ehrlich's Population Bomb

Inspiration for Moore's new advertisements came from two 1967 books: *Famine 1975! America's Decision: Who Will Survive?* by brothers William and Paul Paddock and *Moment in the Sun: A Report on the Deteriorating Quality of the American Environment* by political

²³In comparison, from the passage of the 1924 National Origins Act limiting immigration to the end of World War II, U.S. population grew by about 0.9% per year. Calculated by the author from Carter et al., see n. 82, Table Aa6 and Aa7.

²⁴Not all young Americans were politically liberal; the conservative movement also drew its share of support from the baby boom generation. Although population growth in the global south was caused by mortality decline rather than fertility increase, as it was in the U.S., both changes produced a more youthful age structure, as the mortality decline in the global south was concentrated among children and childbearing women.

scientist Robert Rienow and his wife Leona Train.²⁵ The Paddocks — agronomist William and diplomat Paul — focused on the global south, predicting that continuing population growth would produce serious famines in the upcoming decade, rendering many countries dependent on food aid from the United States, and that the U.S. would not be able to provide enough food to save all of the world’s hungry people. They therefore proposed a “triage” system, according to which the U.S. would divide countries asking for food aid into three categories: those beyond saving, those that could get by without aid, and those that could be aided by U.S. efforts. The Paddocks placed Haiti, Egypt, and India in the first category, arguing that no amount of aid would prevent massive starvation and disorder in those countries. They placed Gambia and Libya in the second category — countries that could get by without U.S. assistance — and Tunisia and Pakistan in the third category — countries that both needed and could benefit from U.S. food aid, and therefore should receive it.²⁶

The Paddocks were just two among many who were beginning to suggest that “the population problem” in the global south should be solved by raising mortality rates rather than continuing to attempt to reduce fertility rates.²⁷ William Lindsay White, editor of *The Emporia Gazette* of Emporia Kansas, recommended in private letters to Hugh Moore that “the United Nations . . . send out a task force to poison village wells” or that “the Ford Foundation . . . popularize cannibalism by distributing a book of recipes to be prepared by Julia Child.”²⁸ The second suggestion is clearly an ironic reference to Jonathan Swift’s “A Modest Proposal” (1729), but the first — poisoning village wells — was more or less serious, though White acknowledged that it would never happen. The seriousness of this proposal becomes apparent from its context. White wrote to Moore that

²⁵Moore to Foote, Hicks, and Catlin, Jan. 5, 1968, see n. 4.

²⁶James W. Sire, “Review of *Famine-1975! America’s Decision: Who Will Survive?*” *Journal of the American Scientific Affiliation* (1968).

²⁷For a fictional account of this approach, see Lionel Shriver, *Game Control: A Novel* (New York: Harper, 2007).

²⁸William Lindsay White to Hugh E. Moore, Aug. 14, 1968, folder 9, box 17; William Lindsay White to Hugh E. Moore, Sept. 10, 1968, folder 9, box 17.

we have just returned from Africa, and last year traveled through Asia starting in India and including Siam, Viet Nam, Hong Kong, Taiwan, Seoul and Tokyo. In my opinion, the situation is so bad and the explosion point so near that the only truly constructive and effective solution I can think of would be for the United Nations to send out a task force to poison village wells. I can see that there would be some criticism of this, but on the other hand what is the suggested alternative?²⁹

White encouraged Moore's work with the exhortation "more power to your pen."³⁰ He later wrote to Moore that "I realize there are many objections to the plan I presented. It has only one merit, which is that it would probably work, and all of the alternatives of which I have heard in my opinion certainly would not."³¹ It was after this statement that he made the second and ironic suggestion. These suggestions, along with the Paddocks' "triage" plan, reveal a pervasive view that inhabitants of the global south were not only expendable, but also less than human.

The Rienows' book, *Moment in the Sun*, focused on the U.S. and its growing environmental concerns. One of Moore's associates described it as "the first attempt to bring all our various environmental crises together in one book and then to lay them squarely at the feet of their basic cause: The American obsession for uncontrolled, unthinking growth of the economy and the population."³² However, the Rienows placed much more emphasis on population growth than on unregulated economic growth as the cause of the environmental degradation that had become more visible throughout the 1960s, leading to the passage of the Air Quality Act and Water Quality Act by President Johnson in 1965 and the creation of the Environmental Protection Agency (EPA) by President Nixon in 1970. Their book did not acknowledge the role of policy or development, neglecting to mention that sprawling suburbs and investment in the construction of highways rather than railroads meant more cars on the road driving greater distances; breaking ground for this construction released carbon into the atmosphere and exposed the soil to erosion, leading to silt deposition in streams,

²⁹White to Moore, Aug. 14, 1968, see n. 28.

³⁰Ibid.

³¹White to Moore, Sept. 10, 1968, see n. 28.

³²"For Mr. Moore: *Moment in the Sun*," n.d., folder 25, box 16.

rivers, and lakes; agricultural specialization meant that feedlot operators had no crops on which to spread animal manure and crop producers could more cheaply fertilize their land with synthetic fertilizer, the production of which burned carbon and the application of which led to nitrogen runoff.³³

The book that resonated most with the public was *The Population Bomb*, published by Stanford University biologist Paul Ehrlich in 1968 at the behest of the Sierra Club. Between 1968 and 1978, it sold over 3 million copies.³⁴ *The Population Bomb* combined the domestic concerns of the Rienows with the international concerns of the Paddocks. Ehrlich borrowed more than just the title from Hugh Moore. As Moore stated in a form letter that he enclosed when mailing Ehrlich's book to his supporters, *The Population Bomb* "expresses my own view of the frightening prospects of the world population out of control."³⁵ Moore pointed to Ehrlich's credentials to legitimize his claims in the book, informing supporters that "Dr. Ehrlich is a scientist of repute, Professor of Biology at Stanford University, yet he states the case for population control as dramatically as any science-fiction writer could do."³⁶

In fact, *The Population Bomb* was largely a work of demodystopian science fiction. It devoted considerable space to spinning out horrific and highly speculative futures, including global nuclear war and massive famines. These scenarios had no basis in empirical evidence, and were described by other scientists as "frightening."³⁷ The only one that did not end in nuclear war involved the U.S. cutting off food aid to countries that were "beyond hope" — including India and Egypt — leading to massive "die back" and allowing for the formation of a world government with strict controls on population growth, agricultural development, and industrialization.³⁸ Such scenarios clearly exceeded the scientific expertise of Ehrlich, a specialist in butterfly biology. Few of Ehrlich's claims about the dangers of population

³³U.S. Department of Agriculture, Office of the Secretary, 1968, folder 25, box 16; Barry Commoner, *The Closing Circle* (New York: Bantam, 1971).

³⁴Eagan, see n. 30, 174.

³⁵Hugh E. Moore, Jan. 10, 1969, folder 5, box 17.

³⁶Ibid.

³⁷Jan Newhouse to Paul R. Ehrlich, Sept. 27, 1969, Paul R. Ehrlich Papers, Stanford University Archives, Stanford University, Palo Alto, CA, folder 9, box 2, series 4.

³⁸Paul R. Ehrlich, *The Population Bomb* (New York: Ballantine, 1968), 72-80.

growth were supported by scientific research. Nonetheless, within a year of its publication, *The Population Bomb* had been assigned in approximately 200 classes around the country.³⁹

Ehrlich was born in 1932 and grew up in suburban New Jersey, where he had ready access to the butterflies that fascinated him.⁴⁰ He earned a B.S. in zoology at the University of Pennsylvania and, while there, read William Vogt's *Road to Survival* and Fairfield Osborn's *Our Plundered Planet*. He completed a Ph.D. in biology at the University of Kansas in 1957 and took a faculty position at Stanford University in 1959.⁴¹ He began to speak publicly about environmental issues in January 1965, but turned his focus to population as the ultimate cause of environmental degradation, poverty, and other social issues only later that year, during a research trip to Asia. As had been the case for other scientists and population activists, Ehrlich was severely troubled by the poverty he encountered in India. In *The Population Bomb*, he famously recounted his impressions during a taxi ride with his wife and daughter, describing the Delhi streets as

alive with people. People eating, people washing, people sleeping. People visiting, arguing, and screaming. People thrusting their hands through the taxi window, begging. People defecating and urinating. People clinging to buses. People herding animals. People, people, people, people. As we moved slowly through the mob, hand horn squawking, the dust, noise, heat, and cooking fires gave the scene a hellish aspect. Would we ever get to our hotel? All three of us were, frankly, frightened.⁴²

In his fright, Ehrlich attributed the poverty he saw around him to the poor people themselves: there were obviously too many of them. The image of defecating and urinating in the streets evokes the wanton sexual behavior no doubt underlying this scene in Ehrlich's mind. Population growth provided a convenient explanation for their poverty — that is, a biological explanation with a technological solution.⁴³ Ehrlich's tropical epiphany is reminiscent

³⁹Paul R. Ehrlich to Richard Bowers, Mar. 3, 1969, folder 8, box 4, series 4.

⁴⁰Biographical accounts state that his interest in butterflies was encouraged by a mentor at the American Museum of Natural History, but I have not been able to find out who this mentor was. Eagan, see n. 30, 184.

⁴¹*Ibid.*, 184.

⁴²Ehrlich, *The Population Bomb*, see n. 38, 15. This is probably the most-frequently cited passage in the book, but few who cite it comment on his obvious fear of brown bodies.

⁴³Robertson, see n. 12, 136-137.

of Darwin's: his theory of natural selection was inspired by the prolific growth of flora and fauna in the Galapagos islands.⁴⁴ It also clearly reflects a fear that the poverty and desperation he witnessed in India could spread to California if rapid population growth continued unabated. Ehrlich's description of overwhelming numbers of brown bodies suggests anxiety about immigration from the global south to the United States — and particularly from Latin America and Asia to California — that was beginning to increase after the 1965 passage of the Immigration and Nationalization Act, another victory of the civil rights movement.⁴⁵

Following the Paddocks' premise, Ehrlich argued that rapid population growth had already doomed India and other parts of the global south to large-scale famines, and lamented that coercive population control measures had not been taken earlier. Davis's 1967 critique of voluntary family planning as a solution to "the population problem," discussed in Chapter Five, resonated with Ehrlich, who quoted Davis in *The Population Bomb*, stating of family planning that "by offering only the means of couples to control fertility, it neglects the means for societies to do so."⁴⁶ Referencing an earlier proposal by Indian minister Sripati Chandrasekhar to sterilize Indian men who had three or more children, Ehrlich argued that "we should have volunteered logistic support in the form of helicopters, vehicles, and surgical instruments. We should have sent doctors to aid in the program by setting up centers for training para-medical personnel to do vasectomies."⁴⁷ By the time he wrote *The Population Bomb*, he contended it was already too late, and endorsed the Paddocks' Malthusian triage suggestion, proposing that it was in the best interest of the entire world for the U.S. to sit quietly by and let a large part of India's population starve to death.

Although Ehrlich argued that the countries of the global north were not beyond hope — in contrast to his characterization of many countries in the global south — he contended that much of the global north was "overpopulated" according to three criteria. First, many

⁴⁴Personal communication with John Carson, 3/24/2015.

⁴⁵For the Immigration and Naturalization Act and its relationship to the civil rights movement, see John D. Skrentny, *The Minority Rights Revolution* (Cambridge: Belknap, 2002).

⁴⁶Quoted in Robertson, see n. 12, 137; See also Paul R. Ehrlich to Cynthia Hochberg, June 23, 1969, folder 9, box 2, series 4.

⁴⁷Ehrlich, *The Population Bomb*, see n. 38, 165-166.

of these countries were not self-sufficient in food and, as population grew in food-producing countries, there would be less available for import. Second, these countries relied on mineral and energy resources from other parts of the world, which would also become scarce as population grew in resource-producing countries. Finally, he argued that the countries of the global north “have exceeded the capacity of their environments to dispose of their wastes,” with New York City, for example, facing a garbage crisis.⁴⁸

Just as Moore had done in his “Manhattan Project” campaign, in *The Population Bomb*, Ehrlich attributed all social, economic, and environmental ills — from poverty and hunger in the global south to pollution, traffic, and racial tensions in the global north — to population growth, though with no more scientific evidence than Moore had presented in his ads. Despite his own history of anti-racist activism,⁴⁹ Ehrlich contended that overpopulation — not racism — was the cause of the country’s recent urban race riots. In contrast to the 1968 report of the Kerner Commission, which attributed urban unrest to segregation and discrimination,⁵⁰ Ehrlich gave a biological explanation. He noted that “we know all too well that when rats or other animals are overcrowded, the results are pronounced and usually unpleasant. Social systems may break down, cannibalism may occur, breeding may cease altogether. The results do not bode well for human beings as they get more and more crowded.”⁵¹ Ehrlich’s explanation dehumanized urban residents, elided a long history of *de jure* and *de facto* segregation and discrimination in policing and the provision of public services, and elided the fact that rural areas were losing population as cities grew, indicating that they were growing through migration as well as natural increase.⁵²

Of the environment, Ehrlich stated that “the causal chain of deterioration is easily followed to its source. Too many cars, too many factories, too much detergent, too much

⁴⁸Ehrlich, *The Population Bomb*, see n. 38, 9; David Bird, “Garbage Disposal Posing City Crisis,” *New York Times*, June 19, 1967, 37.

⁴⁹Robertson, see n. 12, 130.

⁵⁰Excerpts from the Kerner Report, History Matters (<http://historymatters.gmu.edu/d/6545/> (accessed 12/19/14)).

⁵¹Ehrlich, *The Population Bomb*, see n. 38, 168.

⁵²Jack Rosenthal, “Census Expert Discounts Population Growth Issue,” *The New York Times*, Jan. 14, 1971, 1.

pesticide, multiplying contrails, inadequate sewage treatment plants, too little water, too much carbon dioxide – all can be traced easily to *too many people*.⁵³ This passage was quite powerful and is often cited. Draper evoked it in his appeal to the Democratic Party to add population control to its 1968 presidential campaign platform, stating that “we have crowded schools, polluted air and water, traffic jams, unspeakable slums and large families living from one generation to another in poverty. The quality of life for many of our citizens is threatened by increasing population pressures.”⁵⁴ But neither Draper nor Ehrlich explicitly traced the link between pollution or poverty and people, implying that the causal pathways from people to cars, factories, detergent, pesticides, etc. — and from there to poverty, racial tensions, and urban violence — were obvious and unequivocal. Comparing population growth to the uncontrolled multiplication of cells characteristic of cancer, Ehrlich argued that solving “the population problem” required deaths from starvation or violence, which he compared to “the cutting out of the cancer.”⁵⁵

At the core of Ehrlich’s sweeping pronouncements about the imminent demise of human civilization was a targeted critique of pesticide use in U.S. agriculture that offers a clue to his focus on population and his decision to appeal directly to the public. Ehrlich argued that the dangers of agricultural pesticides — many of which were still unknown — far outweighed their benefits, recommending that they be avoided until their safety could be ensured.⁵⁶ He also detailed his own efforts to bring these dangers to the attention of the U.S. Department of Agriculture, using his scientific credentials to demand greater regulation and oversight of pesticide use. Yet, as he recounted, these efforts were foiled by the far greater lobbying capacity of the pesticide industry, and its efforts to portray its opponents as “communist sympathizers.”⁵⁷ Ehrlich’s description of this experience indicates that he well understood

⁵³Ehrlich, *The Population Bomb*, see n. 38, 66-67, emphasis in the original.

⁵⁴William H. Draper Jr., “Testimony Before the Platform Committee of the 1968 Democratic National Convention Committee,” Aug. 23, 1968, folder 47, box 40, series 1.

⁵⁵Ehrlich, *The Population Bomb*, see n. 38, 166.

⁵⁶STS scholars have described the principle of avoiding unknown dangers as the “precautionary principle.” Michel Callon, Pierre Lascoumes, and Yannick Barthe, *Acting in an Uncertain World*, trans. Graham Burchell (Cambridge: MIT Press, 2009).

⁵⁷Ehrlich, *The Population Bomb*, see n. 38, 126; this episode is an example of efforts by industry to

the technological drivers of environmental degradation, but had given up on regulation as the solution. Instead, he recommended population control, thereby individualizing a systemic problem. Though he did advocate for policy mechanisms to reduce population growth, in *The Population Bomb*, Ehrlich appealed to a grassroots audience in the U.S., who could respond by having fewer children, even if Ehrlich's calls for legislation to promote population control failed. With a smaller population, Ehrlich reasoned, all of the industrial causes of environmental degradation would decline, even in the absence of regulation, the passage of which he had concluded was nigh impossible.⁵⁸

By suggesting that population control could prevent pollution and resource depletion, Ehrlich promoted the same "per capita solution" that proponents of the economic overpopulation discourse promoted. The suggestion that population control could stimulate economic development relied on the mathematics of per-capita GNP, the measure of economic growth. The fewer members of the population among whom aggregate GNP needed to be divided, the higher per-capita GNP would be. While this proposal is mathematically correct, it ignores such factors as economies of scale that disrupt the assumed linear relationship between population and GNP per capita. Similarly, calculations of per-capita resource use or pollution generation masquerade as causal relationships, implying that an increase or decrease in population would produce a proportionate change in pollution or resource depletion. In a strictly subsistence society, such a linear relationship might be plausible, but in an industrial society it is not.⁵⁹ The fallacy of the per capita solution is immediately apparent in a comparison between its role in the economic and environmental discourses. In the economic discourse, the numerator is fixed and the per-capita value varies: changing the number of people does not change the overall income, but does change the number of people among whom it is being divided. In the environmental discourse, the numerator varies with the

discredit science so as to avoid regulation, as described in Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* (New York: Bloomsbury Press, 2010).

⁵⁸Robertson, see n. 12, 146-147.

⁵⁹Angus and Butler, see n. 186.

denominator and the per-capita value is fixed: each person accounts for the same amount of environmental harm regardless of how many there are. This is an extreme simplification, but demonstrates the different roles the per capita solution plays in each discourse.

Other natural scientists joined Ehrlich's cause, most notably University of California at Santa Barbara biologist Garret Hardin, whose famous 1968 article "The Tragedy of the Commons" also called for population control through legislation.⁶⁰ Hardin had admired the work of Vogt and Osborn since their 1948 publications, and shared their faith in eugenics as a biological solution to social problems.⁶¹ In "The Tragedy of the Commons," Hardin refuted Adam Smith's proposition that the emergent effect of individuals acting in their own interest necessarily benefits society as a whole, arguing that the "invisible hand" of the market fails to effectively allocate resources held in common, such as air, water, and land. He gave two examples. In the first, common land is overgrazed when herders try to maximize their profits by increasing the size of their herds. In the second, the environment suffers when industries acting in their own interest fail to mitigate the pollution associated with their production processes or with the consumption of their products. Hardin contended that childbearing by the poor led to the first type of "tragedy," as (he argued) this childbearing was subsidized by the welfare state, and thereby redistributed resources from the more to less deserving, much as Malthus had suggested in his argument against the eighteenth-century English Poor Law and Moore and Draper contended in their newspaper ads. Hardin contended further that all childbearing contributed to the second type of "tragedy," as (he argued) "the pollution problem is a consequence of population."⁶² Although a strong supporter of freely-available contraception and abortion, Hardin believed these measures were not enough to bring population to stationarity. Citing Davis's argument that parents the world over still wanted more than two children on average, he maintained that any effort to limit population growth through voluntary means would fail.

⁶⁰Garrett Hardin, "The Tragedy of the Commons," *Science* 162, no. 3859 (1968): 1243–1248.

⁶¹Robertson, see n. 12, 154.

⁶²Hardin, "The Tragedy of the Commons," see n. 60, 1245.

Hardin contended that appeals to conscience aimed at a voluntary reduction in childbearing would work among the conscientious segment of the population, but not among the selfish or irresponsible. As a result, the selfish and irresponsible would have more children than the conscientious. Making the eugenicist assumption that selfishness and irresponsibility are genetically inherited, Hardin concluded that this type of differential fertility would produce a less-conscientious and ultimately larger population. Quoting Charles Galton Darwin — grandson of Charles Darwin and a distant cousin of Francis Galton, the originator of eugenics — he stated that the end result would be that “nature would have taken her revenge, and the variety *Homo contracipiens* would become extinct and would be replaced by the variety *Homo progenitivus*.”⁶³ In a 1970 article in *Family Planning Perspectives*, Hardin argued against voluntary means of slowing population growth by claiming that desire for large family is an inherited trait. For that reason, he continued, “in a condition of free choice, the women who have more children than average will leave more descendants to carry on the same characteristic in the next generation. As one generation succeeds another, the fertile breeders will thus outbreed the relatively infertile, and there will be a tendency for the numbers of children to increase with each succeeding generation.”⁶⁴ This claim reflected and promoted the belief that all characteristics and actions are genetically determined. On the basis of such reasoning, Hardin argued that coercion was a legitimate solution as long as it was “mutual coercion, mutually agreed upon by the majority of the people affected.”⁶⁵ He suggested that coercion be exercised through the tax code, by increasing the expense of childbearing, similar to the plan Frederick Osborn had first proposed forty years earlier to improve the “quality” of the U.S. population by reducing or reversing the socioeconomic fertility differential, described in Chapter Two, and one Ehrlich also recommended in *The Population Bomb*.

⁶³Hardin, “The Tragedy of the Commons,” see n. 60, 1246.

⁶⁴Garrett Hardin, “Multiple Paths to Population Control,” *Family Planning Perspectives* 2, no. 3 (1970): 25.

⁶⁵Hardin, “The Tragedy of the Commons,” see n. 60, 1247.

6.1.3 Zero Population Growth

Publication of *The Population Bomb* immediately turned Ehrlich into a public figure. Over the next few years, he appeared on numerous television and radio talk shows promoting the environmental discourse of overpopulation. By the end of 1968, Ehrlich had helped found a new organization, Zero Population Growth (ZPG).⁶⁶ As will be discussed in the following section, demographers generally scorned the organization and its goal of “zero population growth.” The major exception was Kingsley Davis, who served on ZPG’s board of directors. In this section, I argue that, although ZPG claimed to be an environmental movement, its main aim was worldwide population control for the purpose of preserving the living standards of its founders and the American elite. Nonetheless, it briefly maintained a large following of young people aligned with the antiwar movement and the women’s rights movement, who believed they could help the world by having fewer children.

ZPG aimed to generate a grassroots movement of young Americans and Canadians dedicated to limiting their own reproduction and to bringing into power policy makers committed to limiting the reproduction of others, both at home and abroad. Although Ehrlich at times found himself in opposition to other ZPG leaders, he was the public face of the organization. ZPG’s first newsletter in 1969 urged members to read *The Population Bomb* because “as our president, Paul’s views, probably more so than anyone else’s, can be considered those of ZPG.”⁶⁷ Belying his grassroots aspirations for the organization, Ehrlich invited members of Moore and Draper’s Population Crisis Committee to ZPG’s board of directors, signaling a continued alliance with Moore and Draper’s top-down population movement.⁶⁸ The Population Crisis Committee also adopted some of Ehrlich’s premises and ZPG’s rhetoric. In 1969, Draper, who had just become the U.S. representative to the U.N. Population Commission, gave an address at a testimonial dinner in Washington, D.C., at which he advocated that

⁶⁶“ZPG Statement of Purposes and Goals,” 1969, folder 7, box 1, series 4; Kingsley Davis is often credited with having coined the phrase “zero population growth,” but it was first used by George J. Stolnitz in George J. Stolnitz, “A Century of International Mortality Trends,” *Population Studies* 9, no. 1 (1955): 51.

⁶⁷“ZPG Communicator,” Mar. 1, 1969, folder 7, box 1, series 4.

⁶⁸Emerson Foote, Apr. 19, 1969, folder 9, box 1, series 4.

the U.S. government accept zero growth by the year 2000 as its official population policy.⁶⁹

ZPG primarily presented itself as an environmental organization, calling for population control in the U.S. and Canada because, as a 1969 brochure stated, “our air, water and soil are being polluted. The deterioration and despoliation of our environment is due to the demands placed upon it by increasing numbers of people.”⁷⁰ Although ZPG also called for population control in the global south — and, in fact, advocated more extreme and coercive measures there — the organization focused the majority of its attention on the U.S., both because its leaders viewed the U.S. as “already overpopulated” and because it recognized that other countries would be loath to submit to population control programs initiated by the U.S. if the U.S. government were not also making efforts to control its own population.⁷¹ A substantial proportion of the U.S. public seemed receptive to this message: like Moore and Draper’s ads and books by Ehrlich, the Paddocks, and the Rienows, it provided a single explanation for everything going wrong in the world, which seemed to be spiraling out of control at the end of the 1960s, as discussed above. A 1969 Gallup Poll found that 54% of respondents believed U.S. population growth to be a serious problem and 44% believed that maintaining current living standards would eventually require population control.⁷²

ZPG literature employed the same scare tactics Ehrlich had used in *The Population Bomb* and Moore and Draper had used in their newspaper ads to present population growth as a critical threat to the U.S. middle class and thereby create a “crisis atmosphere.” A graduate student and former family planning worker in the Department of Population Dynamics at Johns Hopkins University advised Ehrlich in 1970 that

most people will never prefer birds to televisions or will never be seriously concerned about the world their grandchildren will inherit. On the other hand, almost everybody’s frame of reference places large values on his own survival and on some consumer goods. So, the strategy is to shape the ‘crisis’ to fit the frame of reference, rather than to try to get people to change their frames of reference

⁶⁹ “Brochure, Population Crisis Committee,” n.d., folder 23, box 16, series 1.

⁷⁰ “Brochure, ZPG,” 1969, folder 1, box 1, series 4.

⁷¹ “ZPG Newsletter,” May 1, 1970, folder 4, box 1, series 4.

⁷² “California ZPG Newsletter,” 1969, folder 7, box 1, series 4.

to fit the ‘crisis’... Concentrate on threats to ecology and space, not for their own sake but as they relate to and cause threats to our GNP, color television, air conditioning, automobiles, and the other things that have high place in the majority’s frame of reference.⁷³

ZPG literature presented population growth, both at home and abroad, as a threat to the very survival of the U.S. government and the American people. The title of a 1970 pamphlet was “Zero Population Growth: Program for Survival.” It argued that, if birth rates did not decline, “the death rate will increase because of food shortages and increased pollution of the environment.”⁷⁴ The pamphlet warned that “if we add 100 million more people to the population of the United States by the year 2000... we will be on the brink of disaster... , if we get there at all.”⁷⁵ ZPG literature never specified exactly how population growth would cause food shortage or environmental degradation in the United States, instead presenting vague population projections accompanied by even vaguer suggestions of the negative consequences. For example, a brochure with a photo of a baby on the front bearing the title “Does the Population Bomb Threaten His Future?” predicted that “in 35 years there will be 100 million more people in the U.S. – an increase of 50% from 1970” and asked, “do we want our children to grow up in a world of 50% more pollution, smog, houses, freeways, parking lots and crowding, with less parks, open spaces, and wildlife?”⁷⁶ These statements suggested that pollution and material development (houses, freeways, parking lots, etc.) increased in direct proportion to population and were necessitated by population growth, eliding other causes, such as the rise of independent living among both older and younger adults and the increasing distance between homes and jobs.⁷⁷

In reference to population growth outside the U.S., the brochure was much more explicit, warning that “in 20 years there will be twice as many people in the underdeveloped countries

⁷³Samuel B. Hopkins, “Frame of Reference, Burden of Proof, and Governmental Approaches to Population and the Environment,” 1970, folder 4, box 1, series 4.

⁷⁴“Zero Population Growth: Program for Survival,” 1970, folder 3, box 1, series 4.

⁷⁵Ibid., The U.S. population did, in fact, add nearly another 100 million people by the year 2000 without inducing disaster.

⁷⁶“Does the Population Bomb Threaten His Future?” N.d., folder 3, box 1, series 4.

⁷⁷See, for example, Merchant, Gratton, and Gutmann, see n. 6.

as there are today.” After attributing hunger and starvation in the global south to population growth (rather than lack of entitlement to food),⁷⁸ it went on to explain that “malnourished people are poorly motivated, do not think clearly, and are more susceptible to propaganda,” asking, “will there be much hope for political stability in such a world?”⁷⁹ ZPG literature thereby explained unrest in other parts of the world as a biological response to starvation, and predicted — as Moore had done a decade before — that population growth would promote the spread of communism.

Although the U.N. published detailed cohort component population projections for all parts of the world every few years (including in 1963 and 1968), ZPG literature did not use these projections, which predicted an eventual slowing of population growth as a result of demographic transition. In 1968, the U.N.’s medium projection for the year 2000 was 6.5 billion. Instead, *The Population Bomb* and ZPG offered — in lieu of projections — illustrations of the effects of then-current growth rates on future population, just as Edward East had done in *Mankind at the Crossroads*, discussed in Chapter One. In *The Population Bomb*, Ehrlich pointed to the current world population doubling time of 37 years. Doubling time is a demographic index that — like population projections — might be considered a boundary object, defined in Chapter Two.⁸⁰ Doubling time speaks coherently to both specialist and non-specialist audiences, but has different meanings to each: doubling time is a standard index demographers use to express an *instantaneous* rate of population growth — that is, the rate of population growth at a given moment. Doubling time is analogous to the net reproduction rate (NRR), discussed in Chapter 1, which expresses the current instantaneous growth rate in terms of the effect it *would* have on total population *if* current growth rates remain constant. Doubling time is calculated as shown in Equation (6.1), where *dtime* is the doubling time in years and *r* is the annual growth rate, expressed as a percentage

⁷⁸The concept of entitlement and its relation to starvation is developed in Sen, see n. 83.

⁷⁹See n. 76.

⁸⁰Star and Griesemer, see n. 63.

of current population.

$$dtime = \frac{\ln 2}{\ln(1 + r)} \quad (6.1)$$

Both doubling time and NRR are *period* indices that describe current mortality and fertility rates but express no judgment about whether those rates will remain constant into the future. For that reason, doubling time is a statement only about current population growth, not about the effect that growth will have on future population. To a non-specialist audience, however, a statement of doubling time sounds like a prediction: population *will* double in a given number of years. Ehrlich played on the boundary nature of this measure in *The Population Bomb*, when he pointed out that the then-current world population doubling time was 37 years, a valid demographic statement, but then went on to state that “if growth continued at that rate for about 900 years, there would be some 60,000,000,000,000,000 people on the face of the earth. This is about 100 persons for each square yard of the Earth’s surface, land and sea.”⁸¹ This statement is factually correct and reminiscent of the constant-rate calculations of future population in Edward East’s 1923 *Mankind at the Crossroads*, discussed in Chapter One. However, just like East’s calculation, Ehrlich’s was intended to inspire action rather than to accurately predict future population. It also suggested a sense among Ehrlich and his colleagues that future population growth needed to be exaggerated in order to incite appropriate action. Other scientists criticized Ehrlich’s hyperbole, as will be discussed later in this chapter.

In addition to supporting local chapters throughout the United States and Canada, ZPG maintained lobbying staffs in Washington D.C. and Sacramento to bring its agenda to the attention of policymakers at national and state levels. ZPG leaders also aimed to use the organization’s membership as “a political structure that can be mobilized to support particular candidates or particular bills before the Congress.”⁸² In 1970, Senator Joseph Tydings introduced to the U.S. Senate a Joint Resolution on Population. Largely written by ZPG

⁸¹Ehrlich, *The Population Bomb*, see n. 38, 18.

⁸²See n. 74.

staff, the resolution stated that “unchecked population growth significantly increases the difficulty and cost of solving America’s social, economic, and political problems, and directly contributes to the pollution and degradation of our environment,” and that “it is only by its own example that America can hope to lead the fight to curb world population growth, which is obstructing economic progress and threatening starvation, mass unemployment, and civil strife in the developing countries of Asia, Africa, and Latin America.”⁸³ Through such efforts, the environmental discourse of overpopulation entered the realm of U.S. policymaking, joining and bolstering the economic discourse introduced by Moore, Draper, and their allies in Congress.

Viewing access to birth control, abortion, and employment opportunities for women as prerequisites for reducing population growth in the U.S., ZPG allied with the feminist movement.⁸⁴ It supported the efforts of the National Organization of Women to pass the Equal Rights Amendment, and pushed for universal access to contraception and abortion, particularly for unmarried women, who faced greater restrictions than did married women.⁸⁵ ZPG also favored the expansion of affirmative action programs to increase employment opportunities for women, better enforcement of Title IX of the 1972 U.S. Educational Amendments, which prohibited discrimination by sex in federally-funded educational activities, and equal pay for women and men, following Davis’s premise that reducing fertility required the provision of alternatives to childbearing for women.⁸⁶ By aligning itself with the women’s rights movement, ZPG aimed to bolster the legitimacy of its project and gain the support of the women’s movement for population control.

But despite its efforts to expand access to contraception and abortion, ZPG’s leaders did not see voluntary family planning as a solution to “the population problem” in the United States. ZPG literature echoed the Planned Parenthood critique of Moore’s mugging

⁸³“Senate Joint Resolution on Population,” May 18, 1970, folder 4, box 1, series 4.

⁸⁴See n. 74.

⁸⁵Paul R. Ehrlich to Leonard Ball, Jan. 7, 1971, folder 3, box 1, series 4; Lucinda Cisler, chair of NOW’s Taskforce on Reproduction, also served on the national board of ZPG. Robertson, see n. 12, 157-159.

⁸⁶“A Recommended Population Policy for the United States,” 1976, folder 6, box 3, series 4.

ad, arguing that “the increase in our population is *not* being caused by the unwanted children of the 5 million poorest women in the United States,” a reference to the 1970 Family Planning Act, which explicitly aimed to provide contraception to the estimated five million women who could not afford it. Ehrlich and his ZPG colleagues also refuted the accusation that overpopulation discourses were implicitly racist and classist, attributing excessive U.S. population growth to “the 40 million other women of child-bearing age, predominately [sic] white, middle to upper income, confirmed contraceptive users, having the number of children they *want*.”⁸⁷ For this reason, ZPG leaders supported the stance taken by Davis in his 1967 *Science* article and by Ehrlich in *The Population Bomb* that “voluntary family planning is not a population policy.”⁸⁸

On the basis of Davis’s contention that eliminating unwanted childbearing would not bring fertility below the replacement level unless desired family size was also reduced, ZPG’s political aims went far beyond increasing women’s access to birth control, abortion, education, and employment. The organization also advocated “removal of the subsidies, direct and indirect, given to large families (more than two children),” including “income tax exemptions for children beyond the second.”⁸⁹ ZPG even recommended raising the income tax exemption for the first two children to increase the disincentive for the third child.⁹⁰ In 1970, Senator Bob Packwood and U.S. Representative Paul “Pete” McCloskey, Jr., both supporters of ZPG, introduced bills to eliminate child tax deductions after the second child.⁹¹ One proponent of such policies argued in 1968 that “the time has now come to react to prolific parenthood as we act toward other types of environmental contaminants.”⁹² Proposals to encourage reduced childbearing through economic incentives, as well as advertisements that stated “children are beautiful...they cost about \$40,000 each,” belied the organization’s

⁸⁷“Declaration on Population and Food Prepared by the Environmental Fund for the U.N. World Population Meeting,” 1974, folder 11, box 2, series 4.

⁸⁸Ibid.

⁸⁹See n. 67; see n. 74.

⁹⁰“ZPG Press Release,” Nov. 28, 1969, folder 6, box 1, series 4.

⁹¹Hoff, see n. 11, Chapter 7, Kindle Edition.

⁹²Ed Chasteen, “Should the Government Limit Births?” 1968, folder 19, box 16, series 1.

claim that it aimed to control population growth among the wealthy as much as among the poor.⁹³

By 1972, however, as a result of critiques of ZPG's aims and strategies by people of color and the poor, Ehrlich had abandoned the idea of using taxation to control population, recognizing that such measures targeted the poor and also penalized children. The alternative Ehrlich proposed to such a market-based approach was legal coercion. He acknowledged that "if we could find a way to enforce compulsory birth control it would be much more democratic than many of the other methods that are being proposed," as it would not allow parents who could afford more children to have them. However, he also recognized that "it is a difficult thing to put over to people who often are offended by the idea."⁹⁴ One member of ZPG's board who was also a board member of Planned Parenthood resigned from the ZPG board because its advocacy of compulsory family limitation conflicted with Planned Parenthood's voluntarist position. This board member was himself in favor of compulsory family limitation, but recognized that many of Planned Parenthood's clients — largely poor and nonwhite Americans who may have been targets of involuntary sterilization laws — were very sensitive to the suggestion of coercion. Recognizing also that ZPG members, being mostly white and middle class, were very different from Planned Parenthood's clients, and that ZPG could therefore take a riskier stance, he encouraged the organization "to pioneer, to take positions which seem extreme now, but which we think the logic of events will in the course of time bring a majority of people to accept."⁹⁵

ZPG materials justified the organization's advocacy for population control policies in the U.S. by warning that population would only continue to grow if the U.S. government did not encourage the public to take action. Suggestions for such policies as changing the tax structure were accompanied by warnings that failure to take such action immediately would produce the need for more drastic measures later, including the rationing of resources as well

⁹³"ZPG Advertisement," 1974, folder 1, box 3, series 4.

⁹⁴Paul R. Ehrlich, "Response to Chasteen," Jan. 26, 1970, folder 5, box 1, series 4.

⁹⁵illegible to Richard Bowers, Oct. 2, 1969, folder 8, box 1, series 4.

as strict limits on childbearing.⁹⁶ In this way, ZPG presented continued population growth as a threat to individual liberty in the U.S., suggesting that population growth could produce totalitarianism at home as well as communism abroad.⁹⁷

Close reading of ZPG literature reveals that its leaders mainly perceived population growth as a threat to their own standard of living and consumer preferences, and promoted population control as a way to protect their material wealth and freedom to consume. A 1974 brochure stated that it was “preferable to support a smaller number of human beings at an equitable and sufficient standard of living than a greater number at a lesser level,” attributing poverty and the unequal distribution of resources at both global and national levels to human numbers.⁹⁸ ZPG founder Richard Bowers articulated his idea of the “equitable and sufficient standard of living” he sought to protect for himself and his associates when he stated in 1970 that the world’s natural resources “are not adequate to provide such items as a 9 room house (not to speak of a wilderness mountain retreat or a quest cottage by the sea) two cars, quality heating systems, a wide variety diet, elaborate wardrobe, etc. etc. which have been and are the hallmark of the successful person” if the U.S. population exceeded 100 million.⁹⁹ He was not critiquing these material aspirations; rather he was arguing that the U.S. population must be reduced in order to make them attainable. However, ZPG never advocated for a more equitable distribution of resources, nor did its rhetoric suggest that everyone could attain this excessive standard, even if the U.S. population were to fall to 100 million. Rather, the organization argued that increasing population growth would lead governments to *impose* conservation measures, which ZPG literature described as “a reduction in personal freedoms.”¹⁰⁰ Such statements suggest that ZPG’s leaders saw the freedom of the “successful” to pollute and consume as more valuable than the freedom of others to reproduce.

⁹⁶See n. 83.

⁹⁷See n. 70.

⁹⁸“A Statement of the Goals of ZPG, Inc.,” 1974, folder 2, box 3, series 4.

⁹⁹Richard Bowers, “100 Million Americans by the Year 2000?” 1970, folder 7, box 4, series 4.

¹⁰⁰See n. 86.

By 1976, ZPG's leaders had become more explicit in their aims. The organization's statement that "to the extent that we can protect the environment for future generations only at expense to the present generation in material standards, government controls and loss of freedom, or dependence upon foreign sources of supply, we will choose less environmental protection" indicated that its leaders saw environmental protection as a means to the end of population control, rather than the other way around.¹⁰¹

Appealing to potential members with slogans borrowed from Moore and Draper's advertising campaign, including "how many millions more do YOU want in the United States?"¹⁰² ZPG particularly aimed to attract college and even high school students, who had not yet started families and could therefore be persuaded to minimize their childbearing.¹⁰³ At \$10 for a regular membership and only \$4 for a student membership, the bar to entry was low, though ZPG encouraged new and existing members to become "donors" at \$20, "sustaining members" at \$50, or "patrons" at \$120.¹⁰⁴ ZPG also sold earrings made from IUDs and Valentine's Day cards with red condoms enclosed.¹⁰⁵ Membership grew by an average of 100 people per day throughout the first half of 1970 and, by the end of the year, the organization boasted over 30,000 members in more than 300 chapters.¹⁰⁶ In addition to recruiting young members, ZPG also advocated "population education" in public schools, to teach children about the causes and consequences of population growth, thereby further supporting and spreading the economic and environmental discourses of overpopulation.¹⁰⁷ ZPG's leaders hoped to mobilize some of the political power student activists had developed through the social movements of the 1960s.¹⁰⁸

ZPG did prove particularly popular among college students, and officially aligned itself

¹⁰¹See n. 86.

¹⁰²See n. 70.

¹⁰³"ZPG Q&A," n.d., folder 3, box 1, series 4.

¹⁰⁴See n. 74.

¹⁰⁵Carol Oppenheim, "Big Zero for Zero Population's Goal," *Chicago Tribune*, Dec. 14, 1978, A1.

¹⁰⁶Shirley Radl, "Report to Board of Directors, ZPG," July 21, 1970, folder 3, box 1, series 4; Robertson, see n. 12, 170.

¹⁰⁷See n. 86.

¹⁰⁸"Circular letter from the ZPG secretary to members and directors," May 1, 1969, folder 7, box 1, series 4.

with the antiwar movement in 1970, when it issued a press release condemning the Vietnam War as an “ecological catastrophe.”¹⁰⁹ ZPG also tapped into the growing environmental awareness of student activists and their support for the feminist movement and the legalization of birth control and abortion, as discussed above.¹¹⁰ The white middle-class students who flocked to ZPG were members of the “baby boom” generation, born during the resurgence of fertility in the late 1940s and early 1950s that no expert had predicted. As children, they had experienced housing scarcity and overcrowded schools, and thus had little trouble believing that their world was overpopulated.¹¹¹ Moreover, population growth provided a simple and approachable explanation for the war in Vietnam and poverty at home. For these students, having a vasectomy or getting an IUD seemed a tangible way to make a difference in the world.¹¹² Ehrlich himself publicized the fact that he had had a vasectomy after the birth of his only child, sometimes even wearing a button inviting people to “ask me about my vasectomy.”¹¹³

ZPG’s leaders initially defined the goal of their organization — zero population growth — as replacement-level fertility — that is, a total fertility rate (TFR) of approximately 2.1.¹¹⁴ They understood that, as a result of population momentum (larger cohorts moving into the childbearing ages as a result of high fertility in previous decades), even the immediate achievement of a TFR of 2.1 would produce population growth for another 70 years or so, until the age structure stabilized. However, ZPG Executive Director Shirley Radl emphasized the importance of giving the public readily-understandable information, and feared

¹⁰⁹Shirley Radl, “Report to ZPG Board of Directors,” May 6, 1970, folder 5, box 1, series 4; “ZPG Press Release,” 1970, folder 5, box 1, series 4.

¹¹⁰Robertson, see n. 12, 160.

¹¹¹Ibid., 160.

¹¹²See, for example: Kenneth J. Fanucchi, “Youth Advised to Press for Population Control,” *Los Angeles Times*, Oct. 10, 1971, SF-A3; Keith Frye, “A Teacher’s Sad Tale of Ecology and Young Activists,” *The Globe and Mail*, Oct. 18, 1971, 7.

¹¹³Michael Dean, “Interview with Paul Ehrlich at Open University, England,” 1972, folder 28, box 1, series 5.

¹¹⁴The total fertility rate is a period measure that reflects the sum of age-specific birth rates over all childbearing ages at a particular moment in time. A TFR of 2.1 means that, if a woman were to experience then-current age-specific fertility rates over the entire span of childbearing ages (15–49), she would have 2.1 children. If age-specific fertility rates remain constant over a long period of time, TFR will equal average family size.

that the details of demographic analysis would discourage public action.¹¹⁵ For that reason, ZPG's initial slogan was "stop at two." An early pamphlet explained that "by having two children, a couple reproduces its own number. That is, they are providing 'replacements' for themselves." In contrast, the pamphlet continued, couples who have three children add one member to the population, and "that child will grow up and have children who will have children, etc. So that one extra child results in an addition of a lot more than one to the population."¹¹⁶ Those who wanted large families were encouraged to adopt. In a 1970 statement of the organization's goals, the leaders specified "zero population growth in the U.S. by 1980 and in the world by 1990," defining "zero population growth" as replacement fertility.¹¹⁷ A survey of ZPG members demonstrated that most believed that the limitation of families to two children would immediately end population growth in the U.S.¹¹⁸

Fertility among younger women fell dramatically in the years following 1968, likely reflecting trends toward later marriage, the increasing acceptability of cohabitation, and increasing educational and occupational opportunities for women.¹¹⁹ By the beginning of 1972, newspaper headlines in major cities around the country were announcing that, as a result of this fertility decline, the U.S. was nearing zero population growth, following ZPG's lead in defining "zero-population growth" as replacement fertility. On February 17, 1972 the *New York Times* informed readers that "the number of children that American women expected to bear dropped so sharply between 1967 and 1971... that the nation is fast approaching zero population growth rates among younger women."¹²⁰ On June 4, the *New York Times* announced that birth rates had been so low during the first quarter of 1972 that "the total fertility rate — a sophisticated demographic measurement — is now virtually at the 'replacement level,'" and went on to define the "replacement level" as "the milestone level

¹¹⁵Radl, "Report to Board of Directors, ZPG," see n. 106.

¹¹⁶See n. 103.

¹¹⁷"ZPG Draft Goals," 1970, folder 4, box 1, series 4.

¹¹⁸Larry Barnett, "ZPG Membership Profile," n.d., folder 11, box 3, series 4.

¹¹⁹Merchant, Gratton, and Gutmann, see n. 6.

¹²⁰Jack Rosenthal, "New Census Study Projects Decline in Rate of Births," *The New York Times*, Feb. 17, 1972, 1.

which, maintained over decades, would bring a population of stable size.”¹²¹ A front-page headline in the *New York Times* on December 5 announced “Nation’s Births Show Drop Below Zero-Growth Level.”¹²² The following day, the *Los Angeles Times* printed an article titled “Under Zero: U.S. Fertility Rate Falls to Record Low.”¹²³

Simultaneously, membership in ZPG began to dwindle, falling from its 1970 high of 32,000 to 21,000 at the end of 1972. Projecting that membership would continue to decline to 13,000 members by the end of 1973 and 8,000 by the end of 1974, ZPG’s board of directors feared that the organization would not have the funding necessary to sustain its programs beyond that point.¹²⁴ To try to revive public interest in the organization, ZPG leaders took credit for the recent decline in U.S. fertility, but also changed their definition of “zero population growth” from replacement-level fertility to population stationarity, a balance of births and deaths. Membership recruitment letters announced that “this result of our work has led to the mistaken but widely held notion that U.S. population has stopped growing and that growth is no longer a problem.”¹²⁵ In contrast to its earlier message that all the ills of the world could be solved if every couple would “stop at two” children, ZPG literature now announced that “the overpopulation problem is a complex one that cannot be answered by oversimplified solutions.”¹²⁶ It also continued to promote the idea that the United States was “already overpopulated,” and required population reduction rather than stationarity.¹²⁷ This shift in approach reflects the multiplicity of potential future implications that can be drawn from the same demographic trends, as discussed in Chapter One.

Supporting this view of the complexity of population, ZPG began trying to educate the public about population momentum and to revise the organization’s target family size

¹²¹Jack Rosenthal, “The Panic As You Approach Zero: Population,” *The New York Times*, June 4, 1972, E4.

¹²²Jack Rosenthal, “Nation’s Births Show Drop Below Zero-Growth Level,” *The New York Times*, Dec. 5, 1972, 1.

¹²³“Under Zero: U.S. Fertility Rate Falls to Record Low,” *Los Angeles Times*, Dec. 6, 1972, 4.

¹²⁴“ZPG Board of Directors Monthly Report,” Dec. 1, 1970, folder 1, box 1, series 4.

¹²⁵“ZPG Recruitment Letter,” Mar. 19, 1979, folder 2, box 2, series 4.

¹²⁶Ibid.

¹²⁷“A Program for ZPG, Inc.,” June 10, 1974, folder 2, box 3, series 4.

downward.¹²⁸ ZPG also attempted to mobilize members to educate their fellow citizens. In 1974, when newspaper headlines announced that the total fertility rate in the U.S. had reached 1.9, ZPG instructed members to send letters to editors with the following text:

In the article “ ” (date), you state that parents “are having 1.9 children, fewer than is needed to replace themselves; thus, we have reached the era of zero population growth.” I would like to point out that even if the present U.S. birth rate holds steady, we will not reach zpg for about 70 years. Children of the post-war baby boom are now entering prime childbearing years, creating a potential parent boom. Their fertility patterns will determine to a large extent when—if ever—we reach zpg.¹²⁹

In 1972, ZPG drafted a resolution to promote one-child families rather than two-child families, stating

we are running out of time in the struggle to maintain a livable America, and we recognize the need for attaining a zero rate of population growth at the earliest practicable date, and the year 2040, almost 70 years off, would be the approximate date for realization of zero population growth if the average number of children per family is brought down to about 2.1, and this date is now seen to be unacceptably far away and would be a classic case of “too little, too late.”¹³⁰

In a 1971 newsletter for his other organization, the Center for Optimum Environments, ZPG founder Richard Bowers referred to advocacy of replacement-level fertility as “a pronatalist position.”¹³¹ However, ZPG’s leaders privately acknowledged that “any target level of fertility would have a large fudge factor; we do not know how to fine tune fertility, nor is it possible with present knowledge to predict exactly what level of fertility would best suit the needs of a rapid but non-disruptive transition to ZPG.” They therefore suggested that the organization “ought to pick a figure that stands out in some way, as did the round number ‘2’ in our early focus on the two child family.”¹³² This correspondence suggests the

¹²⁸ “Timetable for Achievement of ZPG,” n.d., folder 1, box 1, series 4; “ZPG Press Release,” Dec. 7, 1972, folder 11, box 2, series 4.

¹²⁹ “ZPG Media Target List,” July 1, 1974, folder 1, box 3, series 4.

¹³⁰ “ZPG Draft Resolution on One-Child Family,” Apr. 18, 1972, folder 8, box 44, series 1.

¹³¹ “Statement of Beliefs and Goals, Center for Optimum Environments,” 1971, folder 33, box 44, series 1.

¹³² See n. 128.

lack of a scientific basis — whether in demography or in environmental science — for ZPG’s recommendations.

To stem the outflow of membership and promote further fertility decline, ZPG’s leaders aimed to disseminate the organization’s message more broadly through movies and television.¹³³ They were initially pleased to learn of the 1971 production of a film titled *ZPG* that would be released by Paramount. With a million-dollar budget, *ZPG* was filmed in Denmark by the same crew that had filmed Stanley Kubrick’s *2001*.¹³⁴ The film was a faithful representation of the future ZPG predicted in the absence of voluntary population limitation.¹³⁵ It depicted a post-apocalyptic future in which nuclear war had made part of the world uninhabitable and population growth in the rest of the world had led to the establishment of an authoritarian regime in which everyone wore the same drab jumpsuits; food and other resources were strictly rationed. Pollution was so bad that characters waded through thick blue smoke whenever they ventured outside, and had to wear full-face masks in order to breathe. However, even with strict rationing, the government decides that population is growing too quickly and declares a strict moratorium on births, with any violation to be punished by the death of the baby and its parents. An industry of life-like dolls emerges to satisfy parental instincts, but adults in the childbearing ages nonetheless begin to go crazy because they are unable to fulfill their biological need to reproduce. Although the film did make it clear that the demodystopia it depicted — as well as the decision of the authoritarian government in that demodystopia to ban childbearing — resulted from the unwillingness of couples in the 1970s to voluntarily limit their childbearing, it also associated any policy measures aimed at limiting births with authoritarianism. The film’s heroes, a young man and woman, have a baby despite the ban, and manage to escape from their repressive society into the nuclear wasteland that exists on the other side. Therefore, although the film was a cautionary tale about the extreme environmental destruction that would ensue if population growth did not

¹³³“Report to ZPG Board of Directors,” Dec. 31, 1971, folder 1, box 1, series 4.

¹³⁴Hal E. Seilstad, “Report on *ZPG* Film,” 1971, folder 1, box 1, series 4.

¹³⁵The film is available for viewing at <https://www.youtube.com/watch?v=yPhz7XyN1SU> (accessed 4/10/2015).

abate, it also celebrated the illicit childbearing of its protagonists.

ZPG's leaders were horrified when they saw a premiere of the film. They acknowledged that its director had "sincerely tried to make a film that will present the urgency of population stabilization to a mass of unconcerned apathetic citizens."¹³⁶ However, they feared that "as the film presently stands it could be very damaging to us" because "there was a strong association of ZPG with 'The Edict' that their [sic] shall be no child bearing for thirty years."¹³⁷ ZPG asked Paramount to add either a prologue or an epilogue that would "set the picture in a positive context."¹³⁸ When Paramount refused, ZPG demanded that the title of the film be changed, and waged an unsuccessful legal battle to prevent Paramount from using the name "ZPG." Ultimately, ZPG condemned the film publicly, issuing a press release stating that the film "leads people to believe that our organization wishes couples to have no children. In fact, we have always been in favor of children. It is our official policy that couples should be urged to have a maximum of two children."¹³⁹ But despite ZPG's efforts to distance itself from the film, its continued insistence that even replacement-level fertility was too high led journalists to predict that the government would soon respond to the still-growing population with draconian measures, such as parenthood licensing or baby rationing.¹⁴⁰

As fertility declined further in the 1970s and as ZPG increasingly lost support on the political left, the organization turned its attention to immigration, pointing out that, even with replacement-level fertility, immigration would produce continued population growth in the U.S. and Canada. To illustrate this point, ZPG materials presented projections of the U.S. and Canadian populations with current levels of immigration and with reduced levels.¹⁴¹ ZPG's leaders also pointed out that, since the 1965 immigration reform in the U.S.,

¹³⁶Hal E. Seilstad, "Confidential Memo to the ZPG Executive Committee," Feb. 8, 1972, folder 1, box 1, series 4.

¹³⁷"Circular letter to ZPG chapter leaders," Feb. 17, 1972, folder 7, box 3, series 4.

¹³⁸Seilstad, "Confidential Memo to the ZPG Executive Committee," see n. 136.

¹³⁹"ZPG Group Condemns 'ZPG' Film," *Los Angeles Times*, Apr. 5, 1972, F12.

¹⁴⁰Meryle Secrest, "Parenthood Licensing Predicted," *Los Angeles Times*, July 30, 1972, E13.

¹⁴¹See n. 86.

the bulk of immigration was coming from the global south, where fertility rates were higher than in the U.S., and warned that “it is likely that immigrants will bring their customary fertility patterns with them, at least for their generation.”¹⁴² In addition to recommending that the U.S. and Canada enact stricter controls on legal immigration, ZPG also advocated increased efforts to eliminate illegal immigration, arguing that “illegal immigrants should be denied by law the benefits of legal residency, including the right to employment, public assistance, social security, and public services.”¹⁴³ Kingsley Davis, the only demographer on ZPG’s board of directors, recommended that the U.S. institute a “migrant exchange policy,” whereby for every U.S. immigrant received by another country, that country could send one emigrant to the U.S.¹⁴⁴ The Rockefeller Brothers Fund made a special donation to ZPG to fund its anti-immigration activities.¹⁴⁵ Despite Ehrlich’s statements that ZPG’s policy recommendations were not intended to be racist or exclusionary — he emphasized that the organization promoted birth limitation and immigration restriction across the board — ZPG became increasingly associated in the public mind not only with authoritarianism, but also with racism and exclusion.¹⁴⁶

The Holt International Children’s Fund critiqued ZPG’s position on immigration in 1974, with its executive director writing to Ehrlich, “I find it difficult to understand when an organization, with the fundamentally humanitarian stature of Zero Population Growth, can take this nationalistic turn to what is essentially a global problem.”¹⁴⁷ In 1975, Scott Young of Toronto’s *Globe and Mail* referred to ZPG as “Apartheid Canada Limited.”¹⁴⁸ When critics pointed out that immigration restriction would not affect population growth at the global level, ZPG’s leaders pointed to the higher per-capita rates of resource depletion and pollution generation in the U.S. and Canada than in the global south, arguing that individuals would

¹⁴²See n. 86.

¹⁴³“ZPG Immigration Policy Recommendation,” 1975, folder 4, box 3, series 4.

¹⁴⁴Oppenheim, see n. 105.

¹⁴⁵Susan Jacoby, “Anti-Immigration Campaign Begun,” *The Washington Post*, May 8, 1977, 5.

¹⁴⁶See, for example, Norman Hartley, “Immigration Curb Plea Defended By Sponsors,” *The Globe and Mail*, Apr. 25, 1975, 2.

¹⁴⁷John Adams to Paul R. Ehrlich, Oct. 3, 1974, folder 1, box 3, series 4.

¹⁴⁸Scott Young, “The ZPG Scare,” *The Globe and Mail*, Apr. 25, 1975, 31.

have less of an impact on the environment if they remained in the global south rather than migrating to the global north, again citing the fallacious “per capita solution,” which will be critiqued in greater detail below.

Together, Moore and Draper’s environmental advertisements, Paul Ehrlich’s *The Population Bomb*, and the publicity of ZPG brought the environmental overpopulation discourse into the public view. It presented population growth as a powerfully simple explanation, not only for poverty and strife in the global south, but for poverty, strife, pollution, and resource depletion worldwide, including in the United States. It attributed the traffic, smog, racial tensions, crime, political polarization, and suburban sprawl that were coming to characterize the U.S. to population growth, not just among the poor and nonwhite, but also among wealthy consumers. This discourse attracted support from both ends of the increasingly divided political spectrum, with the right wing seeing in population control a solution to growing government expenditures on welfare, municipal services, and policing, as well as a justification to limit immigration, and the left wing seeing in population control an answer to poverty, warfare, and environmental degradation.

6.2 Counterdiscourses of Population and the Environment

In addition to declining U.S. fertility, another reason for ZPG’s falling numbers in the early 1970s was the growing realization of grassroots members that even the immediate achievement of population stationarity would likely not reverse the trend of environmental degradation and depletion of non-renewable resources, which had increased much more rapidly than had population in recent decades.¹⁴⁹ This public awareness was fueled by well-publicized opposition to Ehrlich’s work and to the ZPG program by scientists in several fields. On an Australian talk show in 1971, agricultural economist Colin Clark pointed out that Ehrlich’s

¹⁴⁹Shirley Radl to Edgar Chasteen, n.d., folder 1, box 1, series 4; “Clipping from *Newsweek*,” n.d., folder 7, box 16, series 1.

claim in *The Population Bomb* that food production in the global south fell further behind population growth every year was simply incorrect according to the data of the U.N. Food and Agriculture Organization (FAO).¹⁵⁰ Washington University biologist Barry Commoner explicitly refuted many of Ehrlich's assertions in his 1971 bestseller *The Closing Circle*. Demographers were particularly critical of Ehrlich and ZPG, arguing that the U.S. was in no way overpopulated, that pollution had advanced much more rapidly than population over the most recent decades, and that engineering an immediate end to population growth in the U.S. would require draconian measures and have detrimental effects on the country's age structure. This section examines these critiques of the environmental overpopulation discourse.

6.2.1 Biological Counterdiscourses

Ehrlich's most visible and vocal critic from the natural sciences was Barry Commoner, a biologist at Washington University in St. Louis. Commoner had been born in New York in 1917 to Jewish immigrants from Russia, and grew up in an environment of radical social activism.¹⁵¹ In contrast to Ehrlich, who sought to distance himself from charges of radical leftism, Commoner's politics were avowedly socialist, and he aimed to make the environment part of a broader social revolution.¹⁵² Commoner earned an undergraduate degree in zoology at Columbia University in 1937 and a Ph.D. in biology at Harvard University in 1941.¹⁵³ He served in the U.S. navy in World War II. Afterward, he became a professor of plant physiology at Washington University in St. Louis and an editor at *Science Illustrated* magazine. In 1966, he established the interdisciplinary Center for Biology of Natural Sys-

¹⁵⁰“Monday Conference, Australian Broadcasting Commission,” Aug. 30, 1971, folder 64, box 2, series 5.

¹⁵¹Rupert Cornwell, “Barry Commoner: Scientist Who Forced Environmentalism into the World's Consciousness,” *The Independent*, Oct. 6, 2012, URL: <http://www.independent.co.uk/news/obituaries/barry-commoner-scientist-who-forced-environmentalism-into-the-worlds-consciousness-8200315.html>.

¹⁵²Eagan, see n. 30, 185, 187.

¹⁵³It is possible to imagine that Commoner overlapped with Franz Boas at Columbia University.

tems, which aimed to study the environment in its entirety.¹⁵⁴ He was an outspoken critic of nuclear weapons, and research he did on the accumulation of strontium-90 in babies' teeth helped secure passage of the 1963 Nuclear Test Ban Treaty.¹⁵⁵ Like Ehrlich, Commoner saw links between ecosystem degradation, poverty, and civil rights, but he attributed these to structural factors — particularly industrial processes and the failure of their regulation — rather than population growth. In contrast to the leaders of ZPG, Commoner was described in an obituary as “anything but a materialist,” practicing “frugal” habits, including using only public transportation.¹⁵⁶ Commoner graced the cover of *Time* magazine on February 2, 1970, the first issue to include a section on the environment (Figure 6.5).¹⁵⁷ This magazine appeared just a few months before the first Earth Day, signaling overwhelming public awareness of the environmental crisis.

Commoner's 1971 *The Closing Circle* was a direct retort to Ehrlich's *The Population Bomb*, albeit one that took a much more measured tone and included more scientific evidence. Commoner acknowledged that ecosystem degradation had reached crisis proportions and needed to be addressed immediately, but he sharply critiqued Ehrlich's attribution of environmental degradation to population growth. In a 1970 Earth Day statement at Brown University, he declared that “environmental pollution is not to be regarded as an unfortunate, but incidental, by product of the growth of *population*, the intensification of *production*, or of technological progress. It is, rather, an intrinsic feature of the very technology which we have developed to enhance productivity.”¹⁵⁸ He pointed out that the rate of ecological damage had increased dramatically since the end of World War II, with pollution levels rising between 200% and 2000% in various areas (air, water, etc.) since 1946.

Commoner contended that this acceleration corresponded to the implementation by U.S. industry of the scientific developments of the interwar period, many of which consisted in

¹⁵⁴in 1981, Commoner moved the Center to Queens College in New York. Cornwell, see n. 151.

¹⁵⁵Ibid.

¹⁵⁶Ibid.

¹⁵⁷“Fighting to Save the Earth from Man,” *Time*, Feb. 2, 1970.

¹⁵⁸Quoted in Eagan, see n. 30, 169-170.

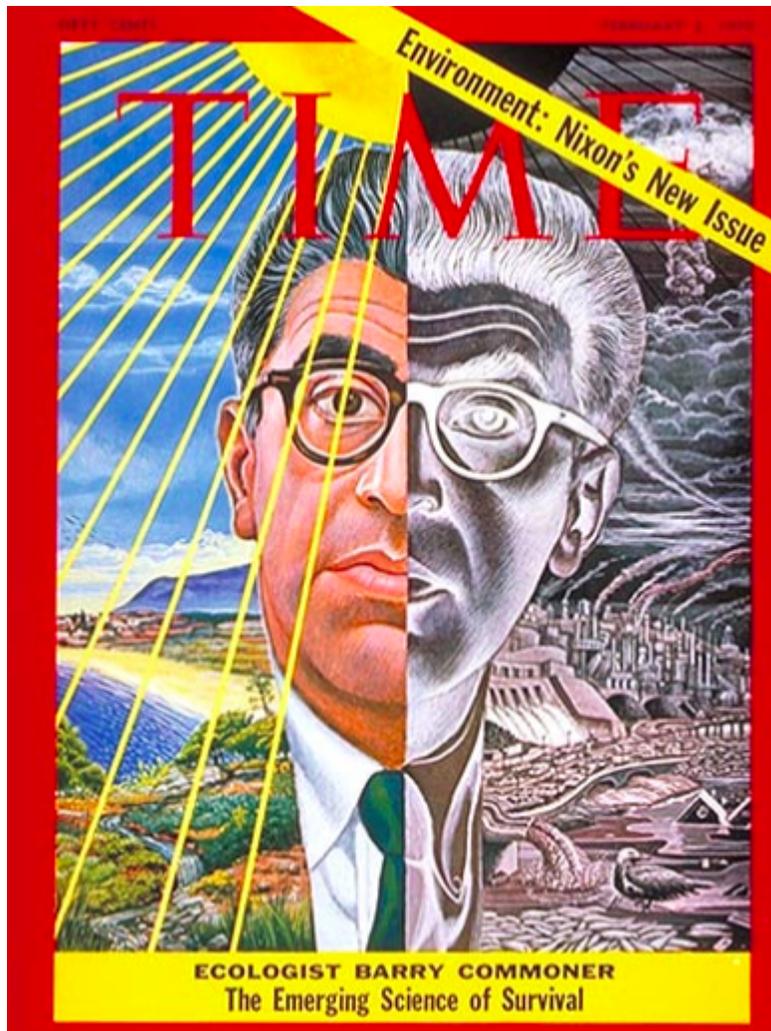


Figure 6.5: Cover of *Time* magazine, February 2, 1970.

synthesizing new molecules and materials that had no place in the ecosystem.¹⁵⁹ The production of these materials used vastly more power and created more pollution than did the use of their natural counterparts, and the materials themselves became pollutants once they had been produced, as there were no mechanisms in the natural world to absorb them or break them down. Whereas Ehrlich and other proponents of the environmental overpopulation discourse contended that these technological changes had been necessitated by population growth, Commoner attributed them to the profit motive of large corporations, and the fact that the environmental costs of production were borne by society rather than

¹⁵⁹Commoner, *The Closing Circle*, see n. 33, 125-130.

industry.¹⁶⁰ Commoner's work challenged the environmental discourse of overpopulation by pointing out that "environmental degradation is not simply the outcome of some general expansive process, growth of population, or the demand for goods, but of specific changes in the ways goods are produced, which are themselves governed by powerful economic and political considerations."¹⁶¹

Commoner tied the environmental crisis to poverty in the global south and the widening socioeconomic gap between global north and global south by demonstrating that the synthetic products contributing to ecosystem degradation were replacing products grown in the global south, undermining agricultural economies and particularly undercutting the efforts of agricultural producers to obtain fair prices. Where natural products continued to be produced, they were increasingly subject to massive use of dangerous pesticides. Citing anthropologist Clifford Geertz, he suggested that this shift in U.S. industry to synthetic materials not only hurt the environment — producing effects that masqueraded as a "population problem" in the global north — but also contributed to poverty in the global south by eviscerating markets for natural materials, slowing economic growth, increasing poverty, and therefore producing the appearance of a "population problem" there as well.¹⁶² Commoner also cited interwar demographic transition theory to argue that population growth was a *result* of poverty in the global south, not its cause.¹⁶³ Echoing the 1944 analyses of Notestein and Davis, Commoner contended that "the population explosion is a cost of the Western industrial society that we are so proud of."¹⁶⁴ To the extent that population growth *did* contribute to environmental degradation, Commoner argued that it was because humans had broken out of their role in the ecosystem (for example, by placing human wastes into water rather than the soil system, of which they are a part), and contended that the environment

¹⁶⁰Eagan, see n. 30, 173.

¹⁶¹Barry Commoner, "The World Environment: A Zero-Sum Game," *The Washington Post* (June 4, 1972): B1.

¹⁶²Commoner, *The Closing Circle*, see n. 33, 244.

¹⁶³Barry Commoner, "How Poverty Breeds Overpopulation and Not the Other Way Around," *Ramparts* 13, no. 10 (1975): 21–25, 58–59.

¹⁶⁴Quoted in Eagan, see n. 30, 177.

was paying the costs of social and economic inequality, both within and between countries.

To support his contention that the majority of the increase in pollution since 1946 had been caused by technological changes in U.S. industry, Commoner decomposed the increase in pollution since 1946 into the proportions caused by population growth, changing consumer habits, and new production methods. He found that — with the exception of automobile-related pollution — nearly 80%-85% of the increase had been caused by postwar changes in production processes, while only 15%-20% had been caused by population growth and a negligible amount by changing consumer habits. In the case of automobile-related pollution, changes in production — with cars being made heavier and therefore requiring more materials and fuel — had contributed only about 40% of the increase in pollution. The remainder had been caused by changing consumer habits — an increase in car ownership and distance traveled — which had contributed close to 60% of the increase in pollution. He argued, however, that these changes had occurred in response to suburbanization and the construction of the Interstate Highway system (and lack of investment in railways), and were not a sign of growing affluence.¹⁶⁵

Commoner refuted the contention that pollution was growing more rapidly than population because the U.S. was becoming more affluent — that is, the attribution of increasing per-capita pollution to increased per-capita consumption. While he acknowledged that consumption of leisure and luxury goods had increased since 1946, per-capita consumption of the basics — food, shelter, and clothing — had changed little, suggesting that any aggregate increases in affluence were not shared evenly across U.S. society and therefore contributed only a small portion of the increase in pollution.¹⁶⁶ Commoner demonstrated further that, to have prevented the 1946-1971 increase in pollution in the U.S. only through population control would have required an 86% *decrease* in the size of the country's population.¹⁶⁷

This analysis roundly discredited Ehrlich's "per capita solution" by demonstrating that

¹⁶⁵Commoner, *The Closing Circle*, see n. 33, 175; also see Commoner, "The World Environment: A Zero-Sum Game," see n. 161.

¹⁶⁶Commoner, *The Closing Circle*, see n. 33, 135-137.

¹⁶⁷*Ibid.*, 210.

new industrial practices had increased Americans' per-capita impact on the environment without measurably increasing their well-being. In 1969, Commoner had appeared at a meeting of the American Association for the Advancement of Science on a panel with Ehrlich and Hardin, where he told them that "saying that none of our pollution problems can be solved without getting at population first is a copout of the worst kind."¹⁶⁸ He also critiqued the environmentalist slogan "consume less" for promoting the individualist per capita solution, arguing that such a message would "not be very well received" by poor Americans and especially African Americans, "who consume less than is needed to sustain a decent life."¹⁶⁹ For Commoner, the causes of both poverty and pollution were structural. One of his most famous sayings is "pollution begins not in the family bedroom, but in the corporate board-room."¹⁷⁰

Commoner did not contend that population growth could continue indefinitely, but argued that regulation of production processes was much more urgent than population control. Drawing explicitly on interwar demographic transition theory, he argued that parents would voluntarily have fewer children if they could be guaranteed of the survival of the children they did have. Echoing Notestein and Davis's 1944-1945 assessments of the world population situation, he recommended programs to further reduce infant mortality as the best way to hasten population stationarity.¹⁷¹ These recommendations contrasted sharply with calls by Ehrlich and other proponents of the environmental discourse of overpopulation for a suspension of "death-control" measures until fertility had fallen.

Scientists in other fields accused Ehrlich of exaggerating the rapidity and gravity of population growth, and of stepping beyond his expertise in his public statements on population.¹⁷² John Lear, the science editor at the *Saturday Review*, where Ehrlich and physicist

¹⁶⁸Quoted in Eagan, see n. 30, 178.

¹⁶⁹Quoted in *ibid.*, 185.

¹⁷⁰Quoted in *ibid.*, 186.

¹⁷¹Stewart Udall and Jeff Stansbury, "The Ehrlich-Commoner Rift," 1972, folder 79, box 23, series 1.

¹⁷²T.R. Parsons, the Scientist-in-Charge of the Environmental Research Group of the Fisheries Research Board of Canada, for example, critiqued an article Ehrlich published in the *Saturday Review*, titled "The Food-from-the-Sea Myth," pointing out that "Dr. Ehrlich is not a marine scientist, and his report was very much a compendium of well-known works dealing with specific subjects, rather than a fair appraisal of a

John Holdren (currently senior science advisor to President Obama) authored a weekly column, received numerous critiques and complaints from well-known scientists that Ehrlich and Holdren misled readers and deliberately tried to “scare people into believing they face only one set of alternatives when in fact the true alternatives are several.”¹⁷³ Lear wrote to Ehrlich in 1971,

I beg you not to assume that, simply because you have not seen it, serious criticism of your columns has not been received here. I cannot go into much detail because most of it has been on a private level in telephone calls and personal conversations with scientists I have known for many years. The critics include major scientific figures at one end of the spectrum and, at the other, students of yours who so far as I know have been devoted to you in the past. You are right in supposing that I am not concerned about criticism *per se*. I worry about it only where I feel there is some justification for it.¹⁷⁴

Princeton demographer Frank Notestein made a similar critique at the 1970 meeting of the Population Association of America (PAA), where, in an invited presentation on Zero Population Growth, he tacitly referenced Ehrlich’s hyperbolic tactics, stating that “it is a sad day when we see professionally expert distortions of the truth peddled to the public under the highest scientific auspices, as if truth can be fostered best by untruth.”¹⁷⁵ He and other demographers feared that Ehrlich’s exaggerations regarding the rate and consequences of population growth would anger readers who, feeling deceived, would turn against population control altogether.

problem.” T.R. Parsons, “Response to ‘Food-from-the-sea Myth,’” 1972, folder 100, box 23, series 1.

¹⁷³John Lear to Paul R. Ehrlich, Mar. 25, 1971, folder 100, box 23, series 1.

¹⁷⁴Ibid.

¹⁷⁵Frank W. Notestein, “Zero Population Growth,” *Population Index* 36, no. 4 (1970): 444; Paul Demeny, a former student of Notestein, critiqued ZPG rhetoric for “its aggressiveness in supplying a set of easily identified villains for many or all of our troubles, its lack of self-doubt and distaste for qualification, its capacity to see black and white where there are only shades of grey,” which “serve it well with a public that abhors complexity and yearns for simple answers and tangible scapegoats.” Philip Hauser, Judith Blake, and Paul Demeny, “Discussion of Notestein’s ‘Zero Population Growth,’” *Population Index* 36, no. 4 (1970): 464.

6.2.2 Demographic Counterdiscourses

With the exception of Berkeley demographers Kingsley Davis and Judith Blake, demographers — particularly those associated with the Population Council — were highly critical of the environmental overpopulation discourse and of Ehrlich and ZPG (both the organization and its goal). As Ehrlich wrote in a 1969 letter to Bowers, “the Population Council (or at least its biggest wheels) hates my guts, those of Kingsley Davis, Garrett Hardin, and indeed anyone else who has taken an approach to population control except their ‘go slow and use family planning’ one.”¹⁷⁶ Notestein was quite open about his opinion of Ehrlich. When asked in 1970 to review a new book by Ehrlich and his wife Anne titled *Population, Resources, and Environment*, Notestein declined, explaining “I’ve been saying such nasty things about Ehrlich and doing so publicly, my friends would never believe I could give him an honest break.”¹⁷⁷ In an internal Population Council memorandum, Notestein and Council president Bernard Berelson described ZPG as a “cult paying lip service to ecology but rather lightly based in science and deeply rooted in emotion.”¹⁷⁸ Nearly as soon as Ehrlich published *The Population Bomb* and began calling for explicit population limitation policies in the United States (as opposed to policies to provide birth control to the poor), demographers began speaking out against him and against his proposed policies for the United States.

In general, demographers — particularly those with disciplinary training in economics, such as Notestein, Coale, and Demeny — were not in favor of continued population growth in the U.S., but expressed confidence that the market would adequately allocate increasingly scarce resources in ways that would discourage fertility and encourage the development of alternative resources. They also continued to assert that population growth in an already-developed economy would lead to economic growth through increased demand. Ansley Coale devoted his 1968 presidential address to the PAA to arguing against “a campaign for fewer births” in the United States, pointing out that, even if U.S. population reached one billion,

¹⁷⁶Paul R. Ehrlich to Richard Bowers, Mar. 14, 1969, folder 8, box 4, series 4.

¹⁷⁷Frank W. Notestein, Otis Dudley Duncan, Apr. 11, 1970, folder 8, box 13.

¹⁷⁸Bernard Berelson to Frank W. Notestein, Nov. 11, 1970, folder 7, box 28.

the country would still be populated at a lower density than much of Europe.¹⁷⁹ Explicitly citing Moore's newspaper ads and Ehrlich's *Population Bomb*, Coale criticized the fact that

it has become fashionable to explain almost every national failure or shortcoming by rapid population growth — the ugliness and hopelessness of slum life, wasteful and irritating traffic jams, unemployment and delinquency among the disturbingly large fraction of adolescents who drop out of school, the pollution of air and water, and the disappearance of the natural beauty of our country behind a curtain of billboards and under a blanket of kleenex and beer cans.¹⁸⁰

In his address, Coale also refuted Hardin's claim that childbearing was not subject to market forces because it was subsidized by the welfare state. In contrast, Coale expressed confidence that, with contraception and abortion universally available, "if every individual knowledgeably pursues his self-interest, the social interest will best be served," arguing that rising costs of housing and subsistence in the U.S. would cause "population growth to cease before the Malthusian positive checks of famine and disease reassert themselves."¹⁸¹

Coale inverted Ehrlich's attribution of urban poverty and strife to high fertility, instead arguing that "fertility in the urban ghettos will fall if discrimination is alleviated, if educational and employment opportunities are equalized."¹⁸² He also pointed out the fallacy of the per capita solution with regard to pollution, which did not increase in proportion to population size. Coale therefore contended that "a population one-half or three-quarters the size of the current one in the United States could ruin the potability of our fresh water supplies and poison our atmosphere by the unrestricted discharge of waste."¹⁸³ Notestein made a similar point in his 1970 PAA presentation, pointing out that energy use was growing much more rapidly than was population, stating that "if we wished to achieve the per capita use of electricity of 1960 without increasing the total produced above the 1940 level, we would need to reduce our United States population below 25 million," that is, a reduction

¹⁷⁹Ansley J. Coale, "Should the United States Start a Campaign for Fewer Births?" *Population Index* 34, no. 4 (1968): 471.

¹⁸⁰Ibid., 467.

¹⁸¹Ibid., 468.

¹⁸²Ibid., 470.

¹⁸³Ibid., 470.

of approximately 86%, as Commoner would calculate independently.¹⁸⁴ He argued further that the focus on stopping population growth as the primary solution to the problem of environmental degradation was “a distraction from an immediate attack on pollution” by more direct means.¹⁸⁵ Similarly, University of Chicago demographer Philip Hauser argued that the ZPG movement presented “the problems of environmental pollution and the population explosion... as a smoke screen to obscure other problems that should have priority, including the problems of the slums, racism, and the ‘urban crisis’ in general.”¹⁸⁶

Coale and other social scientists cautioned that a rapid slowing of population growth would shift the age distribution of the U.S. population upwards, just as Thompson and Whelpton had pointed out in their interwar projections of population stationarity.¹⁸⁷ In the 1973 book *The Genetic Fix*, Columbia University sociologist Amitai Etzioni warned that fertility decline would make the entire country resemble Florida by increasing the median age of the population.¹⁸⁸ Borrowing from a French writer, Coale described this scenario as “old people ruminating over old ideas in old houses,”¹⁸⁹ though Hauser argued that such a shift in the age distribution could “solve some of the present problems relating to youth.”¹⁹⁰ Coale and Etzioni warned that slower population growth would also have a negative effect on economic growth, making poverty more difficult to alleviate. Etzioni argued that, even with population stationarity, differential birth rates between the poor and middle classes would “intensify social conflict because there are going to be children with fewer resources demanding their share.”¹⁹¹ Such arguments tacitly assumed the impossibility of redistribution

¹⁸⁴Notestein, “Zero Population Growth,” see n. 175, 446.

¹⁸⁵Ibid., 447.

¹⁸⁶Hauser, Blake, and Demeny, see n. 175, 455.

¹⁸⁷Coale issued similar warnings about the one-child policy enacted in China in 1979. Ansley J. Coale, “Population Trends, Population Policy, and Population Studies in China,” *Population and Development Review* 7, no. 1 (1981): 85–97.

¹⁸⁸“Zero Population Growth is Viewed as Unattainable — and Undesirable,” *The New York Times*, Aug. 13, 1973, A7.

¹⁸⁹Coale, “Should the United States Start a Campaign for Fewer Births?” See n. 179, 471.

¹⁹⁰Hauser, Blake, and Demeny, see n. 175, 455.

¹⁹¹Etzioni also posited that raising the living conditions of the poorest Americans was easier in a growing economy, where increases in the income of the poorest could come from that growth rather than from redistribution., see n. 188.

of resources between the poor and wealthy.

Demographers attributed such problems as urban crowding, traffic, and pollution not to aggregate population growth, but rather to the geographical unevenness of population growth resulting from internal migration. They pointed out that migration from rural to urban areas had caused cities and suburbs to swell rapidly while rural areas found their populations dwindling, particularly in the productive and reproductive ages, slowing economic growth and increasing old-age dependency ratios. In January 1971, Conrad Taeuber, Census Bureau demographer and supervisor of the 1970 Census (and husband of Princeton demographer Irene Taeuber), discussed these issues in a 1971 speech at Mount Holyoke College, where he argued that “economic and social factors are more important than population growth in threatening the quality of American life.”¹⁹² A summary of his speech published in the *New York Times* informed readers that “the Government’s chief professional demographer took public issue today with the view that population growth is the major challenge to the quality of life in America.”¹⁹³

While no demographer denied that the United States and the world as a whole were experiencing an environmental crisis, most attributed this crisis to mismanagement of world resources rather than population growth. Even those who advocated economic growth in the global south as a means of alleviating poverty, such as Coale, attributed environmental degradation to “the growth of our economy rather than that of our population, combined with a total disregard of the environmental consequences of economic activities.”¹⁹⁴ He and other demographers — including Frank Notestein — did not recommend limiting economic growth as a means of mitigating pollution, but instead recommended that market mechanisms be put into place to make manufacturers responsible for the pollution caused by production or consumption of their goods.¹⁹⁵ Notestein expressed strong faith in the possibility of nuclear

¹⁹²See n. 149.

¹⁹³Rosenthal, “Census Expert Discounts Population Growth Issue,” see n. 52.

¹⁹⁴Ansley J. Coale, “Untitled speech,” 1975, folder 9, box 12, 2.

¹⁹⁵Coale, “Untitled speech,” see n. 194, 3; Ansley J. Coale, “How Important is Population? - Presented to the Environmental Council,” 1972, folder 12, box 10; Notestein, “Zero Population Growth,” see n. 175, 446.

research to provide clean, cheap, and renewable energy in the near future. While Coale argued that nonrenewable resources should be priced so as to reflect their scarcity, Notestein argued that resources that were then scarce might no longer be considered resources in the future, when they had been replaced by cheaper, more efficient, or more plentiful resources. He declared that “resources are not material,” but rather “socially defined,” pointing out that coal and petroleum had only become resources when they became integral to the global economy.¹⁹⁶ These market-based solutions to environmental problems would gain popularity in the 1980s, as will be discussed in Chapter Seven.

Demographers also continued to urge that childbearing be regulated by the market rather than by the legislative imposition of quotas or other forms of child rationing proposed by Ehrlich. Their market-based approach to childbearing reflected both a reaction against the authoritarianism associated with non-market allocation mechanisms and the traces of Frederick Osborn’s free-market eugenics program, introduced in Chapter Two. In his 1968 presidential address to the PAA, Coale spoke favorably of the interwar eugenics program of the Swedish government, also described in Chapter Two, which had inspired Osborn’s program.¹⁹⁷ He described an ideal population policy in which antifertility agents were added to public water supplies and the antidote sold at a price controlled by the government to produce an ideal birthrate. He lauded this hypothetical system for promoting higher levels of childbearing among the wealthy without penalizing the poor for unplanned births.¹⁹⁸ Coale recognized that such a policy would be possible only in science fiction, but described it nonetheless “to characterize, even if in an unrealistic fashion, features that one would like to find in a program for regulating fertility.”¹⁹⁹ While Coale and other demographers associated with the Population Council supported many of the same causes ZPG supported — such as universal availability of contraception and abortion and increased educational and occupational opportunities for women — they opposed ZPG’s proposals for the universal

¹⁹⁶Notestein, “Zero Population Growth,” see n. 175, 445.

¹⁹⁷Coale, “Should the United States Start a Campaign for Fewer Births?” See n. 179, 473.

¹⁹⁸Ibid., 473-474.

¹⁹⁹Ibid., 474.

adoption of a one- or two-child norm — either through policy or through propaganda — as both dysgenic and counter to the free market.²⁰⁰ Osborn continued to promote his eugenics program until 1972, when the American Eugenics Society changed its name to the Society for the Study of Social Biology (currently the Society for Biodemography and Social Biology); prominent demographers remained closely associated with the Society and Osborn’s eugenic thought seems to have remained a major influence.

Yet these demographers did not suggest that markets could not or should not be managed by governments, nongovernmental organizations, or intergovernmental agencies to produce desired results. Coale’s fantasy population policy involved governments manipulating the price of the antifertility antidote so as to shape population growth in desired ways. As discussed in Chapter Two, Osborn supported demographic research specifically for its potential to produce insight into how childbearing decisions were made so that the social context in which those decisions were made could be manipulated in order to produce a “eugenic” distributions of births. The Population Council’s work in the global south, described in Chapters Four and Five, aimed to provide couples with the freedom and technology necessary to control their family size, while also encouraging them to see children as consumer goods and manipulating the economic and social environment in which childbearing decisions were made.²⁰¹ Indeed, the very concept of demographic transition depended on the idea of parents viewing childbearing as part of a complex economic calculation with different tradeoffs in pre-transitional and post-transitional societies. Similarly, economically-oriented demographers associated with the Population Council viewed environmental degradation as a market failure. The environmental costs of production and consumption, they argued, were externalities that needed to be integrated into the cost of production and consumption, and doing so would require actively creating a market for pollution and its remediation, as

²⁰⁰Coale, “Should the United States Start a Campaign for Fewer Births?” See n. 179, 474; in 1970, Berkeley demographer Judith Blake critiqued Notestein’s championship of reproductive freedom “at the expense of any other values and freedoms that might get in the way” Hauser, Blake, and Demeny, see n. 175, 457.

²⁰¹International Bank for Reconstruction and Development, “Commission on International Development Meeting of Experts on Population Problems,” Nov. 8, 1968, “World Bank, Washington,” box AD25, accession 2.

President George H.W. Bush would begin to do with the 1990 Clean Air Act Amendments.²⁰²

Existing histories of population thought and politics in the United States do discuss some of these critiques of the environmental overpopulation discourse, particularly Commoner's, but neglect the specific critique of this discourse leveled by demographers.²⁰³ Attention to demographers' critiques of claims that the U.S. was overpopulated and that population growth posed a major threat to environmental quality indicate that overpopulation hysteria — or Malthusianism, as many historians describe it — was not monolithic. It came in different forms, with different types of scientists, philanthropists, and activists promoting each, though some promoted more than one. Teasing out these differences allows insight into how, when, by whom, and for what purposes specific overpopulation discourses were constructed, shedding light on the general phenomenon of postwar anxiety about impending global overpopulation.

6.3 The American Future and Limits to Growth

Two large-scale projects with major publications in 1972 also contributed to the environmental overpopulation discourse: *Population Growth and the American Future*, a commission appointed by President Nixon to examine the potential consequences of population growth in the U.S., and *Limits to Growth*, a systems modeling project commissioned by a group of intellectuals and businessmen known as the Club of Rome. On the surface, both projects seemed to offer support to both economic and environmental overpopulation discourses, and were touted as demonstrations of the dangers of continued population growth. However, though a closer reading of each, I argue in this section that they generated uncertainties about the consequences of population growth and revealed alternative causes for the social ills that proponents of overpopulation discourses had attributed to population growth, destabilizing the very discourses that they initially aimed to support.

²⁰²Sabin, see n. 13, 192.

²⁰³See, for example, Robertson, see n. 12, 181-184.

6.3.1 Population Growth and the American Future

President Nixon appointed the Commission on Population Growth and the American Future (PGAF) in 1970, after considerable prodding from William Henry Draper Jr. and from John D. Rockefeller III, who testified before the House of Representatives that “there is no problem facing mankind today more important than the population problem” and “there is very little being done anywhere in the world that is commensurate with the magnitude and seriousness of the problem.”²⁰⁴ Just as Ehrlich had argued in *The Population Bomb*, Rockefeller contended that population growth in the U.S. posed a threat to “the quality of life.”²⁰⁵ He also echoed Ehrlich’s suggestion that “U.S. aid would be received with less reserve if we indicate our recognition that we too have a population problem and are in fact taking tangible steps to do something about it.”²⁰⁶

John D. Rockefeller III chaired the Commission and the Population Council exercised subtle power over the selection of members, who included Ford Foundation executive vice president David E. Bell, Population Council president Bernard Berelson, Senators Alan Cranston and Bob Packwood, and U.S. Representatives John N. Erlenborn and James H. Scheuer.²⁰⁷ Demographer Charles Westoff, then associate director of Princeton’s Office of Population Research, served as executive director of the Commission’s technical staff.²⁰⁸ Consultants included biologists Paul Ehrlich and Barry Commoner; demographers Ansley Coale, Kingsley Davis, Richard Easterlin, Frank Notestein, Norman Ryder, Joseph Spengler, J. Mayone Stycos, and Conrad and Irene Taeuber; economists Stephen Enke, Edgar Hoover,

²⁰⁴John D. Rockefeller III, “Statement of John D. Rockefeller 3rd at hearings on S. 2701, to establish a Commission on Population Growth and the American Future, Executive and Legislative Reorganization Subcommittee of the Committee on Government Operations, house of Representatives,” Nov. 19, 1969, folder 134, box 22, record group IV3B4.7, 2.

²⁰⁵Ibid., 3.

²⁰⁶Ibid., 4.

²⁰⁷John D. Rockefeller III to Bernard Berelson, Dec. 30, 1971, folder 478, box 71, sub-series 4, series 3, record group 5; “Population Growth and America’s Future: A Family Planning Perspectives Special Feature,” *Family Planning Perspectives* 3, no. 2 (1971): 45–52.

²⁰⁸Charles F. Westoff, “Testimony before the Subcommittee on Population and Census, Committee on Post Office and Civil Service, U.S. House of Representatives,” Oct. 23, 1975, folder 492, box 72, sub-series 4, series 3, record group 5.

and Harvey Leibenstein; and Population Council staffers Sheldon Segal, Christopher Tietze, and Stephen Viederman. These Commission members and consultants had been major contributors to the economic and environmental overpopulation discourses.

In the message to Congress in which he announced the creation of the Commission, Nixon began with the narrative of population growth that had become standard among proponents of both economic and environmental discourses of overpopulation:

In 1830 there were one billion people on the planet earth. By 1930 there were two billion, and by 1960 there were three billion. To-day the world population is three and one-half billion persons. These statistics illustrate the dramatically increasing rate of population growth. It took many thousands of years to produce the first billion people; the next billion took a century; the third came after 30 years; the fourth will be produced in just 15. If this rate of population growth continues, it is likely that the earth will contain over seven billion human beings by the end of this century. Over the next 30 years, in other words, the world's population could double. And at the end of that time, each new addition of one billion persons would not come over the millennia nor over a century nor even over a decade. If present trends were to continue until the year 2000, the eighth billion would be added in only five years and each additional billion in an even shorter period.²⁰⁹

This constant-rate pseudo-projection, like those in Moore and Draper's ads and ZPG literature, were not intended to actually describe future population, but rather to justify taking action to control population growth. By assuming constant fertility into the future, Nixon produced numbers that were much higher than those generated by U.N. projections, which accounted for expected demographic transition. Nixon's statement suggests that his agreement to appoint the Commission was prompted by considerable hyperbole on the part of Draper and other advisors. Moreover, although Nixon tasked the Commission only with analyzing potential growth of the U.S. population, he justified its creation by pointing to poverty and hunger in the global south and attributing these serious problems to rapid population growth worldwide. His call for increased research on birth control technology and demography also suggests the influence of the Population Council on his speech, though

²⁰⁹Richard Nixon, "Message to Congress on World Planning of Population Growth," n.d., folder 19, box 16, series 1.

the Council usually counseled against the use of hyperbolic claims about future population growth.²¹⁰

The Commission was explicitly charged with projecting U.S. population from 1970 to 2000 and estimating “the public resources that would be required to deal with the anticipated growth, . . . the effects of growth on the activities of government at all levels, and . . . the effects of growth on environmental pollution and on natural resources.”²¹¹ It was also asked to recommend “various means appropriate to the ethical values and principles of this society by which our Nation can achieve a population level properly suited for its environmental, natural resources, and other needs.”²¹² Between 1970 and 1972, with the assistance of a staff of social scientists at times as large as 20, the Commission heard testimony in five cities across the U.S. and fielded a nationally-representative public opinion poll, carried out by Opinion Research Corporation of Princeton, New Jersey. The Commission spent about half of its \$1.5 million budget on contract research by social scientists — primarily demographers — with contractors explicitly asked to contrast outcomes for a scenario in which the average American family had three children to outcomes for a scenario in which the average American family had two children.²¹³ These instructions indicated the recognition by demographers and other experts that fertility was the main factor influencing U.S. population growth and that it was largely under the conscious control of individuals and couples. The resulting projections indicated that, with an average of three children per couple, U.S. population would reach 300 million in 1996 and 400 million in 2014; with only two children, U.S. population would reach 300 million in 2021; with its then-current rates of childbearing (approximately 2.5 children per couple), U.S. population would reach 300 million in 2008.²¹⁴ The Commission’s public opinion survey found an overwhelming preference for a two-child family, with at least one

²¹⁰Nixon, see n. 209.

²¹¹Westoff, “Testimony before the Subcommittee on Population and Census, Committee on Post Office and Civil Service, U.S. House of Representatives,” see n. 208, 3.

²¹²Ibid., 4.

²¹³Ibid., 4-5.

²¹⁴All three scenarios assumed that immigration would continue at its 1970 levels., see n. 207, 46.

child of each sex.²¹⁵ In addition to the final report, *Population and the American Future*, published in 1972, the Commission released an interim report in 1971 and published seven volumes of research papers.²¹⁶

Initially, Rockefeller and the members of his Commission believed that population growth was responsible for many of the problems Moore attributed to it in his advertising campaign and Ehrlich and ZPG attributed to it in their literature: pollution, poverty, crime, and racial tensions.²¹⁷ In June 1971, Commission member and Senator Alan Cranston, with support from his fellow Commission member and Senator Bob Packwood, introduced a resolution to the Senate (S.J. 108) calling for population stabilization.²¹⁸ The belief that population growth needed to be stopped also seems to have been fairly prevalent among the general U.S. public: the Commission's public opinion survey found that 65% of respondents characterized population growth in the U.S. as "a serious problem," with only 7% stating it was "not a problem at all."²¹⁹ However, respondents generally ranked other problems as being more serious than population growth, including pollution, racial discrimination, poverty, and crime. 66% of respondents stated that adding another 100 million to the U.S. population would be "too much," but only about 25% of respondents could accurately state the then-current U.S. population.²²⁰ When asked if the federal government should "try to do anything to slow down population growth in the United States," 56% said it should, and 50% felt that the number of immigrants should be reduced, but 68% said that tax policy

²¹⁵When asked "the ideal number of children a family should have," 43% of respondents stated two, 22% stated three, 16% stated four children, and no more than 2% stated any other number "Opinion Research Corporation Survey No. 51039, enclosed in letter from Jerry Lipson and Diane Wolman to the members of the Commission on Population Growth and the American Future," Sept. 14, 1971, folder 443, box 67, sub-series 4, series 3, record group 5, 2.

²¹⁶Westoff, "Testimony before the Subcommittee on Population and Census, Committee on Post Office and Civil Service, U.S. House of Representatives," see n. 208, 4.

²¹⁷Robert Parke Jr., "Hearings on Senator Cranston's Resolution, S.J. 108," July 6, 1971, folder 447, box 67, sub-series 4, series 3, record group 5.

²¹⁸Robert Parke Jr. to Commission PGAF, June 8, 1971, folder 447, box 67, sub-series 4, series 3, record group 5.

²¹⁹26% characterized population growth in the U.S. as "not so serious a problem" and 2% stated no opinion., see n. 215, 2-3.

²²⁰Ibid., 4-5.

should neither encourage nor discourage childbearing.²²¹

In a press conference on March 17, 1971 announcing the release of the Commission's interim report, Rockefeller and his Commission stated a "general feeling among the commissioners that population stabilization is desirable as a long-run goal."²²² They acknowledged that food was not likely ever to become scarce in the U.S. — even with an average family size of three children — and that population growth was not the main cause of environmental degradation, but argued that continued rapid population growth "could well magnify problems arising from the way we use our resources and technology."²²³ However, the Commission stated its position that population stationarity should be pursued not as an end in itself, but rather as "a means to facilitate the achievement of other social goals," including "improvements in the status of women, in the socioeconomic conditions of disadvantaged minorities, and in the health and opportunities of children."²²⁴ The report also emphasized that a two-child average family size would not require a two-child uniform family size, leaving room for both large families and childless couples, an implicit nod to Osborn's eugenics program. Nonetheless, the leaders of the Population Crisis Committee and Zero Population Growth were encouraged by this report.²²⁵ ZPG founder Richard Bowers subsequently wrote to the members of the Commission, urging them to adopt a timeline for the U.S. to reach a stationary population and suggesting that such a timeline could serve as "a type of self-fulfilling prophesy," much as Donald Bogue had argued of his highly-criticized projections of the 1960s, described in Chapter Five.²²⁶

Over the next year, however, as members of the Commission reviewed the research produced by their contractors and heard testimony from experts and community leaders, they

²²¹See n. 215, 7, 9. Records do not indicate the total number of respondents, but they do show that 53% were female (47% male) and 89% were white (10% were black and 1% were another race).

²²²Andrew P. O'Meara, "Letter to members of the Population Crisis Committee," Mar. 24, 1971, folder 47, box 40, series 1.

²²³See n. 207, 49.

²²⁴Ibid., 51.

²²⁵O'Meara, see n. 222.

²²⁶Richard Bowers, "ZPG Appeal to the Commission on Population Growth and the American Future," 1971, folder 33, box 44, series 1.

learned two things. First, they learned that, despite the development of new contraceptive technologies in the last decade — the Pill and the IUD — and despite the passage of the Family Planning and Population Research Act in 1970, Americans did not have complete control over their fertility, and were still having more children than they wanted. Second, they heard from leaders of the African American community that problems such as poverty and discriminatory provision of public services were in no way caused by overpopulation, and that African Americans in general “regarded talk of zero population growth as genocide aimed at them,” particularly when government-sponsored family planning clinics appeared in neighborhoods that otherwise lacked health care services.²²⁷ The fact that the 1970 Family Planning and Population Research Act specifically targeted the fertility of the poorest women also created the impression that “the government is trying to use birth control to eliminate the poorest and blackest elements of society,” rather than dealing directly with poverty and racial discrimination.²²⁸

The Commission’s hearings provided opportunities for poor and nonwhite Americans to address the population concerns of the white middle and upper classes. Eugene S. Callender, President of the New York Urban Coalition, told the Commission that the hyperbolic vignettes of an overpopulated future that had become ubiquitous in population control literature actually described the current conditions of most African Americans, stating that “for many of us, living in cramped quarters, collecting minimal salaries for dead-end jobs, the future holds no fears we are not facing today.”²²⁹ Speaking to calls by ZPG for fertility reduction to preserve American living standards, he stated — much as Commoner had predicted — that “minority people can not begin to consider a threat to a life-style which they do not share” and “will not countenance any further moves to limit their freedom so that white America can live securely.”²³⁰ He informed the Commission that leaders of the black

²²⁷“Black Genocide Seen,” *The New York Times*, Apr. 16, 1971.

²²⁸Carol T. Foreman to John D. Rockefeller III, Oct. 21, 1971, folder 443, box 67, sub-series 4, series 3, record group 5, 1.

²²⁹Eugene S. Callender, “Population Control and Black Survival,” Sept. 28, 1971, folder 443, box 67, sub-series 4, series 3, record group 5, 5.

²³⁰*Ibid.*, 6.

community would not even consider taking a position on population growth until they had achieved “the end to all conditions — economic and social — which are decimating our population,” including “the ingrained racism which breeds indifference or overt hostility towards minority people.”²³¹ Speaking to resource depletion, he stated that “at this point, minorities use such a small percentage of America’s resources that our only concern should be with receiving a more equal portion.”²³² In its final report, the PGAF Commission, rather than attributing poverty among African Americans to too-large families, as the interim report had suggested, instead recognized that “the presently high fertility of deprived minority groups, while not substantially threatening the common goal, is best attributed to their historic exclusion from the mainstream of American life with regard to education, housing, jobs, and income. When that major discrepancy is removed, their fertility will almost certainly come into balance with the majority’s level, to the advantage of both.”²³³

At the same time, the members of the Commission learned that, for many Americans — particularly African Americans, poor Americans, and those with less education — childbearing was still not entirely voluntary. Advance results of the 1970 National Fertility Survey, provided to the PGAF Commission by Norman Ryder and Charles Westoff of Princeton’s Office of Population Research, indicated that unplanned pregnancies resulting in unwanted births were still fairly common among the women surveyed. They were more prevalent among black women than among white women, and more prevalent among women with less education and lower incomes. Black women with no high school, on average, reported that 43% of the births they had had were unwanted; black women with household incomes of less than \$4,000 per year reported that 48% of births were unwanted.²³⁴ Members of the PGAF Commission learned that the Family Planning and Population Research Act was not being adequately funded, with a means test limiting service provision to women with household

²³¹Callender, see n. 229, 5-6.

²³²Ibid., 6.

²³³Westoff, “Testimony before the Subcommittee on Population and Census, Committee on Post Office and Civil Service, U.S. House of Representatives,” see n. 208, 7-8.

²³⁴Norman B. Ryder and Charles F. Westoff, “1970 National Fertility Study: Preliminary Statistics,” 1971, folder 443, box 67, sub-series 4, series 3, record group 5.

incomes under the \$4,200 poverty line.²³⁵ In his testimony to the Commission, Deputy Mayor of New York Timothy Costello reported that 1,800 of the approximately 3,000 counties in the United States provided no family planning services whatsoever, as was the case for 90% of the country's nonprofit general care hospitals.²³⁶

Even for women who could afford family planning services, contraceptive technology was still not ideal. Feminist groups, including Planned Parenthood, expressed a need in the U.S. for the same types of contraceptive technologies Reimert Ravenholt of USAID desired for the global south: birth control that was “not coitus-related” and did not require a prescription or medical supervision, and “a medically safe abortifacient that can be simply administered with minimal medical supervision.”²³⁷ The experience of population control programs in the global south had demonstrated that women preferred systemic contraceptives that they could administer themselves — that is, the Pill rather than the IUD — and that women were more likely to use these contraceptives if they did not require a prescription or doctor visit.²³⁸

Under Ravenholt's leadership, USAID shifted the emphasis of its population programs from the IUD to the Pill and initiated a program to deliver birth control pills to couples in their homes. USAID contracted with various U.S. pharmaceutical companies to provide the pills, packaging them in white envelopes decorated with a woman's silhouette in blue.²³⁹ This standard packaging allowed USAID to maintain “brand continuity,” while retaining the freedom to contract with the lowest bidder. Going from house to house in male-female pairs, fieldworkers would give a three-month supply of the “Blue Lady Pills” to anyone who

²³⁵Foreman to III, Oct. 21, 1971, see n. 228, 1-2; Carol T. Foreman to Commission PGAF, Oct. 11, 1971, folder 443, box 67, sub-series 4, series 3, record group 5.

²³⁶Timothy Costello, “Testimony Delivered by Deputy Mayor Timothy Costello for Mayor John V. Lindsay, Before the President's Commission on Population Growth and the American Future,” Sept. 27, 1972, folder 443, box 67, sub-series 4, series 3, record group 5, 1.

²³⁷Alfred F. Moran, “Statement Presented to the Commission on Population Growth and the American Future,” Sept. 27, 1971, folder 443, box 67, sub-series 4, series 3, record group 5, 3.

²³⁸“Victor-Bostrom Fund Report for International Planned Parenthood Federation,” 1970, folder 105, box 23, series 1.

²³⁹“Adrienne Germain, Interview with Rebecca Sharpless for the Population and Reproductive Health Oral History Project,” June 19, 2003, URL: <https://www.smith.edu/libraries/libs/ssc/prh/transcripts/germain-trans.pdf>, 53.

demonstrated interest. Ravenholt argued that, once couples had the pills, they would begin discussing whether or not to use them. It was immaterial to him whether the couple began using the pills immediately or at some point in the future, or even if they gave their own pills to a friend or neighbor who had run out, as long as the distribution program resulted in the development of “a cadre of successful pill-takers in the population.”²⁴⁰ While this non-medical approach to the delivery of systemic contraceptives perhaps suggests a lower degree of concern by the U.S. government for the health of women in the global south than for women in the U.S., where oral contraceptives required a prescription, it also made effective birth control more readily available to them.

Access to abortion was also much more difficult in the United States than it was in some other parts of the world. Abortion on demand became available in New York in 1970. Within the next year, approximately 167,000 abortions had been performed in New York City alone, demonstrating a large demand for this medical service. Yet, even after the legalization of abortion in New York in 1970 and in the U.S. as a whole in 1973, it remained a medical procedure that could be performed only by a doctor in a hospital or clinic. In 1971, members of a Los Angeles feminist health collective had adapted a method of manual-suction uterine aspiration from illegal abortionist Harvey Karman.²⁴¹ Calling it “menstrual extraction,” the collective promoted the technique — using equipment that could easily be assembled from readily-available materials — as a “home health care procedure” women could practice on themselves or one another to extract the contents of the uterus on the date of an expected period, thereby avoiding both menstruation and pregnancy.²⁴² Menstrual extraction resided in a legal gray area in the United States, as it was not an abortion: it evacuated the contents of the uterus before a pregnancy test (of the 1970 variety) could indicate whether she was pregnant or not.²⁴³

²⁴⁰See n. 204, 108.

²⁴¹Michelle Murphy, *Seizing the Means of Reproduction: Entanglements of Feminism, Health, and Technoscience* (Durham: Duke University Press, 2012), 157.

²⁴²Ibid., 158.

²⁴³Ibid., 150.

Despite the questionable legality of menstrual extraction in the United States, Ravenholt adapted it further for use in the global south. While, as Michelle Murphy has pointed out, menstrual extraction was defined by its user-built apparatus,²⁴⁴ very similar devices were mass-produced in Kansas under contract by the U.S. government at \$8.70 apiece for distribution by USAID in the global south as “menstrual regulation” kits.²⁴⁵ Menstrual regulation, just like menstrual extraction, allowed the contents of the uterus to be aspirated before a pregnancy could be medically confirmed, thereby skirting abortion laws where the procedure was illegal. Representatives of USAID spoke of menstrual regulation in vague terms, stating that it “can affect the possibility of a pregnancy” and, when asked if it was equivalent to abortion, insisting that “abortion is not a clearly defined legal term.”²⁴⁶ Unlike menstrual extraction, menstrual regulation was usually performed by health-care professionals, but Ravenholt pointed out that the kits were easy and safe enough to use that the procedure could be performed by nurses or midwives rather than doctors, or even by women on themselves. In 1973, the Helms Amendment to the 1961 Foreign Assistance Act prevented USAID from providing pregnancy termination services, at which point Ravenholt enlisted the support of the Mellon Foundation to continue USAID’s menstrual regulation program.²⁴⁷

Also in the early 1970s, USAID funded research into the development of “a nontoxic and completely effective substance which, when self-administered by a woman, on a single occasion would ensure the non-pregnant state at the completion of a monthly cycle.”²⁴⁸ Ravenholt considered such a product — something midway between a once-a-month oral contraceptive and an abortion pill that did not require medical supervision — to be the ideal form of birth control, for both the global south and the United States. In testimony before the

²⁴⁴The Del-em Menstrual Extraction Device was patented, but not available for sale; users made their own according to instructions provided by its inventors. See drawing in Murphy, see n. 241, 158.

²⁴⁵See n. 204, 121; See drawing in Murphy, see n. 241, 151.

²⁴⁶“National Commission for the Observance of World Population Year – First Meeting,” July 31, 1974, folder 15, box 29, 2.

²⁴⁷See n. 204, 123.

²⁴⁸*Ibid.*, 124.

Commission on Population Growth and the American Future, Alfred F. Moran, Executive Vice President of Planned Parenthood for New York City, pointed out that such an ideal contraceptive was still nowhere on the horizon for U.S. women. Effective systemic methods of birth control were still expensive and controlled by doctors, and therefore unavailable to couples who could not afford to see a doctor or to young women who could not seek medical care without parental consent. Moran called for funding for new, simpler, safer, and more effective forms of birth control that did not require medical supervision, as well as legislation that would allow teenagers to obtain effective birth control without parental consent and the provision of sex education in schools and by other agencies that served youth.²⁴⁹

Members of PGAF learned that even information about contraception was still difficult to obtain, particularly for young women and couples. Hariette Surovell, a high school student and chair of the New York High School Women's Coalition, testified before the PGAF Commission that "our curriculum is severely lacking in a topic that is of vital concern to a large percentage of high school students; namely, contraception."²⁵⁰ Surovell herself had compiled information on contraception and on birth control and STD clinics that served minors for her peers, as their school was not providing such information. She estimated that she was approached at school by an average of four girls each week who "thought they were pregnant, their sisters were pregnant, or their friends were pregnant," and who "had no idea that a simple, low-cost test for pregnancy exists."²⁵¹ She continued that many "don't even have a clear picture of how babies are made."²⁵² Moreover, as Betty Rollin, editor of *Look Magazine*, pointed out, women still had few alternatives to motherhood, and few realized that it was not compulsory. She argued for "legislation that improves the lot of women professionally" as an important counter to the social "motherhood myth," which taught women that "no matter what kind of career thoughts they have, first and foremost

²⁴⁹Moran, see n. 237, 3.

²⁵⁰Hariette Surovell, "Testimony before the Presidential Commission on Population Growth and the American Future," Sept. 27, 1971, folder 443, box 67, sub-series 4, series 3, record group 5, 1.

²⁵¹*Ibid.*, 3.

²⁵²*Ibid.*, 4.

they *must* be wives and mothers.²⁵³ The Commission's public opinion survey demonstrated broad support for sex education, contraceptive availability, and abortion: 87% stated that information about birth control should be made available by the government, 62% favored sex education in schools (including information about contraception), and only 6% stated that abortion should be "not permitted under any circumstances."²⁵⁴

Ultimately, the Commission found that the social and political costs of producing immediate population stationarity outweighed "the 'costs' of the most likely magnitudes of population growth for the U.S. to the year 2000."²⁵⁵ Its final report recommended that "the nation welcome and plan for a stabilized population," but did not recommend any policies specifically aimed at bringing about population stationarity.²⁵⁶ Following the suggestion of Princeton demographer Charles Westoff, the report began by reviewing the evidence for and against continued population growth, concluding that stationarity was preferable to continued growth.²⁵⁷ The report acknowledged that Americans had always valued and promoted population growth as a means to national security and economic prosperity, but stated that economic development and technological progress had eliminated the need for continually-growing populations. However, most members of the Commission agreed on the desirability of population stationarity only if its achievement did not "in any way interfere with the desires, aspirations, and needs of any family concerning its size or number."²⁵⁸ In contrast to ZPG, which recommended that pro-natalist tax policies be replaced with anti-natalist tax policies, the PGAF report recommended that pro-natalist policies be replaced by policies that were neutral toward childbearing.²⁵⁹ Unsurprisingly, given its close connections to the

²⁵³Betty Rollin, "Testimony before the Presidential Commission on Population Growth and the American Future," 1971, folder 443, box 67, sub-series 4, series 3, record group 5, emphasis in the original.

²⁵⁴See n. 215, 8-9.

²⁵⁵Charles F. Westoff, "Further Reflections on Population Policy," Sept. 17, 1971, folder 443, box 67, sub-series 4, series 3, record group 5, 1.

²⁵⁶Presidential Commission on Population Growth and the American Future, *Population and the American Future: The Report of the Commission on Population Growth and the American Future* (Chicago: Signet, 1972), 192.

²⁵⁷Westoff, "Further Reflections on Population Policy," see n. 255, 2.

²⁵⁸Presidential Commission on Population Growth and the American Future, see n. 256, 266.

²⁵⁹Westoff, "Testimony before the Subcommittee on Population and Census, Committee on Post Office and Civil Service, U.S. House of Representatives," see n. 208, 11.

Population Council, the Commission also recommended an increase in government funding for demographic research.²⁶⁰

Following the Population Council's approach to population control, the final report recommended that the government ensure the universal availability of contraception and abortion, as well as comprehensive sex education and increased occupational and educational opportunities for women. However, in contrast to the rhetoric of the Population Council, the Commission recommended these policies not as means to the end of population stationarity, but rather as ends in themselves, "intrinsically desirable on all kinds of grounds other than demographic."²⁶¹ Commission members intended their recommendations to "aim at creating social conditions wherein the desired values of individuals, families, and communities can be realized; equalizing the social and economic opportunities for women and members of disadvantaged minorities; and enhancing the potential for improving the quality of life."²⁶² Therefore, if population stabilization were to be achieved, it "would be primarily the result of measures aimed at creating conditions in which individuals, regardless of sex, age, or minority status, can exercise genuine free choice."²⁶³

While most members of the Commission agreed that there were no advantages to continued population growth, there was substantial disagreement about the report's subsequent recommendations, particularly on the hot-button issues of abortion and immigration. While many members felt that, in recommending legal abortion on demand, the Commission had gone too far, many also felt that, in not recommending the limitation of immigration, the Commission had not gone far enough.²⁶⁴ Rockefeller himself became an outspoken advocate of safe and legal abortion during this period, and remained so for the rest of his life. Mem-

²⁶⁰Westoff, "Testimony before the Subcommittee on Population and Census, Committee on Post Office and Civil Service, U.S. House of Representatives," see n. 208, 15.

²⁶¹Westoff, "Further Reflections on Population Policy," see n. 255, 2; Westoff, "Testimony before the Subcommittee on Population and Census, Committee on Post Office and Civil Service, U.S. House of Representatives," see n. 208, 3.

²⁶²Westoff, "Testimony before the Subcommittee on Population and Census, Committee on Post Office and Civil Service, U.S. House of Representatives," see n. 208, 9.

²⁶³*Ibid.*, 10.

²⁶⁴Presidential Commission on Population Growth and the American Future, see n. 256, for abortion, see 177; for immigration, see 206.

bers of the Commission disagreed about the relationship between population growth and the environment. The final report placed considerable emphasis on population growth as a cause of environmental deterioration, analyzing the issue in per-capita terms, which — as Senator Alan Cranston pointed out — misleadingly attributes the production decisions of large corporations to individual consumers of their products. Although the report stated that “population growth is clearly not the sole culprit in ecological damage,”²⁶⁵ in his own statement at the end of the report, Cranston argued that “population growth is not the major culprit, either.” Explicitly citing Barry Commoner, he pointed out that “the ecologically unsound technological developments of the past two decades would have created the environmental crisis even if the population had been stable during that period.”²⁶⁶ Cranston acknowledged that “slowing population growth will give us time to reevaluate and change our technology,” but contended that population stationarity “cannot substitute for the changes which must be made if we are to survive.”²⁶⁷ Commission member Grace Olivarez objected to the language of “wanted” and “unwanted” childbearing, stating that it “smacks too much of bigotry and prejudice,” conflating unplanned pregnancy with segments of society “undesired” by the white majority.²⁶⁸ She also emphasized that the legalization of abortion and provision of contraception were not solutions to the problem of poverty.²⁶⁹

The Commission’s final report devoted considerable attention to the distribution of population within the United States, arguing that many of the domestic problems commonly attributed to aggregate population growth — including urban and rural poverty, crime, traffic, racial strife, and air pollution — were actually a product of the massive suburbanization experienced by the United States since World War II. Historian Derek Hoff has argued that the attention paid to population distribution, by both the PGAF Commission and the Nixon Administration, was a ruse to detract attention from the problem of aggregate population

²⁶⁵Presidential Commission on Population Growth and the American Future, see n. 256, 71.

²⁶⁶Ibid., 268.

²⁶⁷Ibid., 268.

²⁶⁸Ibid., 293.

²⁶⁹Ibid., 294.

growth.²⁷⁰ Yet aggregate population growth was not a problem — U.S. farmers were producing more food on less land than ever before and population density in the U.S. as a whole, and even in its largest cities, was still considerably lower than population densities in Europe. Population growth in the U.S. was, however, highly uneven. Demography research had demonstrated that, over the previous 25 years, young rural Americans had moved into the outskirts of growing metropolitan regions, where they were joined by members of the white middle class fleeing central cities. Both sets of migration swelled the population of the urban peripheries, drawing businesses away from central cities, increasing the average distance workers had to travel between jobs and homes, draining rural areas of their most dynamic and productive residents, and leaving those who could not move out of inner cities — particularly African Americans who were largely barred from home ownership in the growing suburbs through both *de jure* and *de facto* mechanisms of discrimination — without jobs or adequate public services.²⁷¹ The Commission concluded that, while stationarity at the aggregate level could alleviate some of the problems caused by suburbanization, the U.S. would still face “problems associated with rural depopulation and metropolitan growth,” the latter including “congestion, pollution, and severe racial separation.”²⁷² The Commission recommended that population distribution be addressed through policies to promote the growth of smaller cities — thereby taking some of the pressure off of larger cities — and policies to bring jobs to people who lacked them.²⁷³ Citing the 1968 report of the Kerner Commission, the PGAF report also devoted considerable space to detailing the injustices perpetrated against African Americans through residential segregation and recommended that “action be taken to increase freedom in choice of residential location through the elimination of current patterns of racial and economic segregation and their attendant injustices.”²⁷⁴ Specifically,

²⁷⁰Hoff, see n. 11, chapter 7.

²⁷¹The authors of the Commission’s report recognized that “reverse commuting” — from homes in cities to jobs in suburbs — “can be expensive, time consuming, and difficult.” Presidential Commission on Population Growth and the American Future, see n. 256, 219, also see 207.

²⁷²Ibid., 43, 44.

²⁷³Ibid., 208-211.

²⁷⁴Ibid., 213.

the report suggested that the federal government make a greater effort to promote racial and socioeconomic diversity in growing suburbs and “reduce the dependence of local jurisdictions on locally collected property taxes.”²⁷⁵

Although the final report of the PGAF Commission did not recommend policies explicitly aimed at slowing population growth, it nonetheless sought to allay the fears expressed by demographers and economists that population stationarity would slow or end the economic growth that was credited with having raised living standards in the U.S. dramatically since the beginning of World War II. Its authors pointed out that, although GNP would increase faster with faster population growth, slower population growth would result in higher per-capita income, just as Coale and Hoover had found for India in their 1958 study. Regardless of whether Americans tended to have two or three children per family, however, research contracted by the Commission indicated that GNP per capita would at least double by 2000. However, the report also acknowledged that this increase in GNP, regardless of population growth, would not end poverty, which was largely caused by the exclusion of the poor “— because of age, incapacity, poor training, family responsibilities, fiscal disincentives, or discrimination in the labor market — from the system that produces and distributes income and the things income buys.”²⁷⁶

Contemporaries cited the appointment of President Nixon’s Commission on Population Growth and the American Future as an acknowledgment that U.S. population growth was having deleterious consequences. Historians also cite the appointment and final report of the Commission as evidence of harmful levels of population growth, critiquing the Nixon Administration for not implementing the policies it proposed to limit population growth.²⁷⁷ However, as I have argued here, the Commission’s final report did not propose policies to limit population growth. As it investigated every social, economic, and environmental problem attributed to U.S. population growth by Moore, Draper, and Ehrlich, it found that

²⁷⁵Presidential Commission on Population Growth and the American Future, see n. 256, 218-221.

²⁷⁶Ibid., 46-48.

²⁷⁷See, for example: Hoff, see n. 11; Robertson, see n. 12.

population growth was not the main cause of any of these problems, instead pointing to structural factors. The policies it proposed — including the controversial recommendation to legalize abortion — were explicitly *not* made with the ultimate aim of reducing population growth, but rather with the aim of reducing structural inequality, which may in part explain why President Nixon greeted them with distaste.

6.3.2 The Limits to Growth

While the PGAF Commission explored the consequences of population growth from a social science perspective, a team of systems modelers based at MIT explored it from a computational perspective, leading to the 1972 publication of *The Limits to Growth*. Sponsored by a group of environmentally-oriented intellectuals and businessmen who called themselves the Club of Rome, *The Limits to Growth* described a global systems modeling exercise commissioned by the Club, initiated by MIT professor Jay Forrester, and completed by his students Donella and Dennis Meadows. The model Forrester and the Meadows built, known as World3, simulated the future dynamics of population, industry, pollution, natural resources, and agriculture at a global scale.²⁷⁸ In its basic strategy, the World3 model resembled the projection exercise at the heart of Ansley Coale and Edgar Hoover's *Population Growth and Economic Development in Low-Income Countries*, using a model not to predict the future, but to examine how alternative trajectories of change in one part of a system influenced change in other parts of the system. Coale and Hoover's model — which they had calculated without the aid of computers — allowed them only to analyze the effects of different rates of population growth on per-capita consumer income. Using a more complex computational model, the Club of Rome was able to simulate a system with multiple interacting subsystems, and to experiment with how changes in any subsystem — population, industry, pollution, resources, or agriculture — affected all of the other subsystems simulta-

²⁷⁸George J. Church, "Can the World Survive Economic Growth?" *Time*, Aug. 14, 1972, 56–57.

neously, accounting for feedbacks within and between all parts of the overall system.²⁷⁹ On the basis of the World3 model, which showed that continuation of then-current patterns of population growth and economic growth would lead to global disaster, the authors of *The Limits to Growth* concluded that averting global disaster required immediate actions to limit the growth of both populations and economies.

As Coale and Hoover had done, the Meadows were careful to emphasize that their models were simulations, not predictions. They did not claim to know what *would* happen in the future, only that their model, by formalizing the relationships between various aspects of a complex system, could indicate the likely impact of growth trajectories within any part of the system on any other part. Graphs of future scenarios presented in the book left the scale off of the y-axis (indicating quantities of population, industry, resources, etc.) and made the time scale on the x-axis deliberately vague (with 1900 at one end and 2100 at the other, but with no intermediate markings) to deter readers from interpreting the graphs as predictions. Of course, as with population projections, these simulations were read as predictions nonetheless, by both supporters and detractors. The Club of Rome itself read the model as a prediction when using it as a basis for policy recommendations, stating

if the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next one hundred years. The most probable result will be a rather sudden and uncontrollable decline in both population and industrial capacity.²⁸⁰

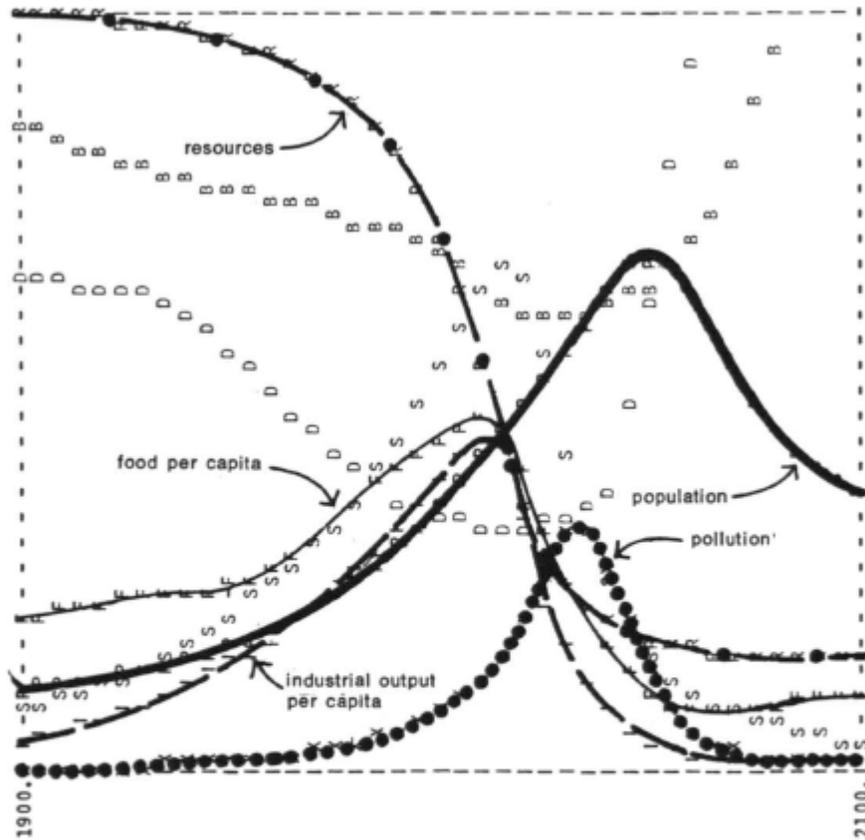
Time magazine described the model as “the first vision of apocalypse ever prepared by computer.”²⁸¹

The authors illustrated this apocalypse in their standard model run (Figure 6.6) which assumed that both population and *per-capita industrial production* would continue on their

²⁷⁹A schema and simulation of the model can be found at <https://insightmaker.com/insight/2188> (accessed 4/11/2015).

²⁸⁰Donella Meadows, Dennis Meadows, and Jurgen Randers, *Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind* (New York: Universe Books, 1972), 23.

²⁸¹Church, see n. 278, 56.



The "standard" world model run assumes no major change in the physical, economic, or social relationships that have historically governed the development of the world system. All variables plotted here follow historical values from 1900 to 1970. Food, industrial output, and population grow exponentially until the rapidly diminishing resource base forces a slowdown in industrial growth. Because of natural delays in the system, both population and pollution continue to increase for some time after the peak of industrialization. Population growth is finally halted by a rise in the death rate due to decreased food and medical services.

Figure 6.6: World3 model, standard run.

exponentially-upward trajectories, with no changes in the allocation of resources within or between societies.²⁸² In this scenario, stocks of non-renewable resources declined at an ever-greater rate, eventually reaching an inflection point. World3 modeled diminishing returns on the extraction of non-renewable resources, simulating the real-world situation in which easy-to-extract resources are mined first, with extraction requiring additional resources as the more readily-available reserves are depleted. The model assumed that, when resources

²⁸²Meadows, Meadows, and Randers, see n. 280, 124.

fell below the inflection point, capital would be diverted from industry and agriculture to resource extraction, leading to a decrease in food production and material standards of living, increasing mortality and causing a sudden drop in population.²⁸³ Also contributing to food shortages and increasing mortality in the model was the rising pollution caused by continued resource extraction and industrial growth, which — in the model — decreased agricultural yields and increased mortality.

While most of the model's individual effects and feedbacks made sense scientifically and logically, many of them could not be tested empirically.²⁸⁴ For example, while it is easy to believe that rising pollution would diminish human life and agricultural yields, the actual quantitative relationship between pollution and mortality or pollution and yields was unknown, as experimental research to discover these relationships was entirely unfeasible. Critics of *The Limits to Growth* often pointed to the lack of empirical data underlying the model.²⁸⁵ Although its creators continually emphasized that it was intended to illustrate complex interrelationships between parts of the system rather than predicting a likely future, quantitative models of all kinds that require explicit specification of quantities or effects that are not known or agreed-upon — akin to Martha Lampland's "provisional numbers" discussed in Chapter Three — tend to elevate those estimates to the status of truth simply by specifying them numerically and using them to produce model outcomes, regardless of the disclaimers attached to the model by its creators.²⁸⁶ Complex systems models of this type can reveal patterns that emerge from the interactions of many processes that are individually known, but whose cumulative effects can't be easily deduced from that knowledge. However, as with any model, they are fully determined by their assumptions, even if the emergent effects of those assumptions cannot be predicted in advance.

The results of the standard run suggested that continued exponential growth of populations and industry was unsustainable, and that allowing this growth to continue would put

²⁸³Meadows, Meadows, and Randers, see n. 280, 125.

²⁸⁴Ibid., 118.

²⁸⁵Church, see n. 278; also see Sabin, see n. 13, 88.

²⁸⁶Lampland, see n. 207.

world systems in a state of “overshoot,” from which returning to equilibrium would require a contraction of industry and population, either through deliberate planning or through natural and market forces. The Club of Rome cautioned that, if the process of overshoot depleted or seriously damaged some non-renewable resource, it would reduce the Earth’s carrying capacity below what it would have been otherwise, as Osborn and Vogt had argued regarding soil overuse in 1948.²⁸⁷ Working through eleven other hypothetical scenarios, the Club of Rome found that the path to sustainability required population stationarity and stabilization of capital stock, along with investment in renewable technologies and pollution mitigation. Each of these interventions was necessary to create a sustainable scenario within the model. Simply doubling the available resources led to skyrocketing levels of pollution that drove mortality way up, both directly and through its effects on crop yields.²⁸⁸ If pollution control measures were added to the model, population would rise to the point of food shortage.²⁸⁹ This crisis could be delayed but not averted by assuming “perfect” birth control, meaning that only desired children are born.²⁹⁰

In the text of *The Limits To Growth*, the authors placed considerable emphasis on population growth as the driver of the ultimate collapse in the standard model run. However, they also made it clear that exponential population growth was not the sole trigger of the disaster scenario; rather, it was exponential population growth combined with exponential growth in industrial output per capita.²⁹¹ When the authors brought population to immediate stationarity by setting the birth rate equal to the death rate (clearly stating that this choice was “an experimental device, not necessarily a political recommendation”), without any other changes, the system still collapsed from depletion of natural resources, as in the standard run.²⁹² In a preliminary 1971 article, Jay Forrester argued that population was a dependent variable in the system, a result of other factors and not the driving force,

²⁸⁷Meadows, Meadows, and Randers, see n. 280, 92.

²⁸⁸Ibid., 126.

²⁸⁹Ibid., 137.

²⁹⁰Ibid., 139.

²⁹¹Ibid., 68.

²⁹²Ibid., 159-160.

as Ehrlich or Moore might have argued. Echoing interwar demographic transition theory, he stated that “the population explosion is perhaps best viewed as a result of technology and industrialization.”²⁹³ He also cautioned that efforts at population control might be self-defeating. Drawing on demographic research showing that planned family size tends to correlate directly with income (that is, in a perfectly contracepting population, wealthier people have more children), he warned that, if population control produced the material gains it promised, it might lead to larger families in later generations.²⁹⁴

Likely reflecting their concern with population as a driver of global disaster, the authors did not publish the results of a model run in which capital stock was stabilized (by setting the investment rate equal to the depreciation rate) but population allowed to continue growing, stating only that limiting capital investment was not sufficient to produce a sustainable system.²⁹⁵ Finally, the authors modeled a sustainable world by capping the growth of both population and capital, reducing per-capita resource consumption, shifting spending away from material goods and toward food production, education, and health, increasing the durability of industrial capital, and enriching agricultural soils.²⁹⁶ Given how many parameters they tweaked between the model run with only population control and the final sustainable model, it is not at all clear how much population control (if any, given the reduction in desired family size resulting from improvements in education, health, and living standards borrowed by the model from demographic transition theory) was required to achieve sustainability. It was abundantly clear, however, that population control — even the immediate achievement of zero growth — would have little power to prevent imminent collapse if economic growth continued apace.

The Club of Rome expressed optimism, not only about the possibility of reaching sustainability, but also about potential improvements to global quality of life in the sustainable system, which they termed “equilibrium.” The authors of *The Limits to Growth* contended

²⁹³Jay W. Forrester, “Counterintuitive Behavior,” *Technology Review*, 1971.

²⁹⁴Ibid.

²⁹⁵Meadows, Meadows, and Randers, see n. 280, 161.

²⁹⁶Ibid., 162-163.

that “the evolution of a society that favors innovation and technological development, a society based on equality and justice, is far more likely to evolve in a state of global equilibrium than it is in the state of growth we are experiencing today.”²⁹⁷ They also rejected the axiom that had become standard in the U.S. following World War II that economic growth raised everyone’s standard of living, and that with enough growth, high standards could be had for everyone without requiring redistribution. Instead, they argued that “the present patterns of population and capital growth are actually increasing the gap between the rich and the poor on a worldwide basis, and that the ultimate result of a continued attempt to grow according to the present pattern will be a disastrous collapse.”²⁹⁸ Ehrlich lauded the book as evidence in favor of his arguments about the dangers of population growth.²⁹⁹ However, in contrast to the leaders of ZPG, who promoted population control as a way to preserve current living standards in the U.S. and other countries of the global north, the Club of Rome argued that, even with stringent population control measures, these standards were unsustainable.³⁰⁰

The results of the Club of Rome’s modeling exercise were widely publicized, through articles in such popular magazines as *Playboy*, *Time*, and *The Economist*, and through a briefing of legislators, heads of government agencies, and business leaders at the Smithsonian Institution in March 1972, the same month the PGAF Commission released its final report.³⁰¹ *The Limits to Growth* sold over ten million copies.³⁰² Georgia Governor Jimmy Carter was particularly taken with the predictions of the World3 model. After his inauguration as U.S. President in 1977, he hired Gerald Barney, a member of the MIT systems analysis group, to develop a comparable model for the United States through the end of the century, a project on which Anne Ehrlich, Paul’s wife and often-unacknowledged co-author, consulted.³⁰³ This model informed many of Carter’s policies, from conservation to investment in alternative

²⁹⁷Meadows, Meadows, and Randers, see n. 280, 175.

²⁹⁸Ibid., 178.

²⁹⁹Sabin, see n. 13, 82.

³⁰⁰“An End to All This,” *Playboy*, July 1, 1971.

³⁰¹Sabin, see n. 13, 82; see n. 300; Church, see n. 278; “Limits to Misconception,” *The Economist*, Mar. 11, 1972, 20–21.

³⁰²Connolly, see n. 8, 341.

³⁰³Sabin, see n. 13, 127.

energy sources.³⁰⁴

Although *The Limits to Growth* is today remembered mainly as a call for population control,³⁰⁵ it actually demonstrated that population control alone could not prevent impending disaster. Its publication instead implicated the faith of mid-century modernization theorists that economic growth — that is, growth in per-capita GNP — could solve the problem of poverty and inequality, both within and between societies, without redistributive measures and therefore within the rubric of a capitalist free market. *Limits to Growth* instead demonstrated the environmental costs of economic growth, and argued that sustainability would require the equalization of access to Earth's resources and the profits derived therefrom. Interestingly, neither supporters nor critics of *The Limits to Growth* addressed its call for redistribution, which may simply have been beyond the pale of what could be discussed in the Cold War United States. There was, however, considerable criticism of the Club of Rome's call for an end to economic growth. Two strands of this critique emerged in the 1970s. The first originated among advocates of the poor in the global north and political leaders in the global south, who argued that halting economic growth — in the assumed absence of redistribution or other structural change — would perpetuate inequality both within and between societies. The second originated among economists and proponents of the nascent neoliberal movement, who contended that the World3 model accounted neither for technological progress nor for market mechanisms, both of which could prevent the disaster it predicted without necessitating either redistribution or an end to economic growth.

The first critique appeared nearly immediately. George J. Church, a writer for *Time*, warned in 1972 that “a no-growth world would have extreme difficulty providing either social justice or freedom.” Simply halting growth, he contended, would require “a world dictatorship” with considerable governmental direction of environmental matters. He warned that such a system would arouse particular ire among denizens of the global south, who “already suspect that the no-growth argument is an elitist, aristocratic, white man's con-

³⁰⁴Sabin, see n. 13, 129.

³⁰⁵See, for example, Robertson, see n. 12, 180; Sabin, see n. 13, 80-82.

spiracy to lock them into perpetual poverty.”³⁰⁶ Within the U.S., industrialists warned that capping economic growth would prevent the amelioration of poverty, just as Etzioni argued in *The Genetic Fix*. A 1972 advertisement for Mobil stated that “growth is the only way America will ever reduce poverty.”³⁰⁷ Another Mobil ad suggested that economic growth was necessary to mitigate already existing pollution, apparently oblivious to the irony that Mobil’s products were a major source of pollution.³⁰⁸ MIT political scientist Willard Johnson critiqued the assumption that economic growth would automatically alleviate poverty, arguing that “there is no clear evidence that poverty is or can be eliminated as a consequence of the processes of general economic growth,” because “poverty is a feature built into the current American economy and social structure.”³⁰⁹ Nonetheless, he argued that — particularly given the high representation of poor and African American workers in the most polluting industries — “a lack of continued growth, without substantial change in national policies to facilitate the transfer of wealth and income through transfer payments, tax reform and job development, or vigorous antidiscrimination efforts would probably have disastrous consequences for blacks, and perhaps for the poor more generally.”³¹⁰

At the U.N. Conference on the Human Environment, held in Stockholm in June 1972, leaders from the global south joined the critique of the environmental discourse of overpopulation and of the Club of Rome’s call to end economic growth, arguing that the Conference’s emphasis on population effectively made the countries of the global south — where population was growing most rapidly — responsible for solving a problem that had originated in the global north, where pollution and resource use were increasing most rapidly. Ambassador Miguel A. Ozorio de Almeida, head of Brazil’s delegation to the conference, described conference preparations as being “marked by what might be called the ‘Calvinistic’ attitude that the developed countries have demonstrated, by their development, a special right to

³⁰⁶Church, see n. 278, 56.

³⁰⁷Quoted in Willard R. Johnson, “Should the Poor Buy No Growth?” *Daedalus* 102, no. 4 (1973): 168.

³⁰⁸Ibid., 168.

³⁰⁹Ibid., 169.

³¹⁰Ibid., 171.

salvation and perpetuation, thus passing on to the more numerous underdeveloped peoples the responsibility for creating the necessary space on earth.”³¹¹ He and other delegates from the global south warned that they would not “hold back their own economic development in the name of ‘environmental preservation.’”³¹² Ambassador Ozorio de Almeida argued further that, in addition to the measures already proposed at the conference — limitations on population and economic growth of countries in the global south, and a reduction in emissions produced in the global north — the countries of the global north should be asked to “reduce their own demographic numbers and, if necessary, their industrial ‘predation’ upon nature so as to reduce their claim upon the natural resources of underdeveloped countries.”³¹³ Ozorio de Almeida and representatives of other countries in the global south — including Algeria, Argentina, Costa Rica, Dahomey, Ethiopia, India, Nigeria, and Uruguay — demanded compensation for lost trade revenue resulting from international environmental regulation.³¹⁴ The United States was the only aid-giving country whose delegates were unwilling to assist countries in the global south with the financing of environmental protection measures, and the only country whose delegates voted against a proposal to reduce production of synthetic materials, aimed at both curbing pollution and stimulating markets for natural products in the global south.³¹⁵

In the Environment Forum, a parallel conference of nongovernmental organizations, Ehrlich’s calls for “zero population growth” were “shouted down as ‘nonsense’ and ‘genocide,’” and his microphone was turned off during a panel discussion.³¹⁶ Five more antagonists of Ehrlich’s took the stage to speak on behalf of the global south, making Ehrlich feel “am-

³¹¹Quoted in Barbara Ward, “The World: Pollution,” *The Economist*, May 27, 1972: 68.

³¹²Ibid., 67.

³¹³Quoted in *ibid.*, 68.

³¹⁴Casey Bukro, “Poor Lands Ask Compensation: Rich Nations Urged to Bear Cost for Clean Environment,” *Chicago Tribune*, June 8, 1972, A2.

³¹⁵Claire Sterling, “U.S. Losing Argument With Poor Nations at Stockholm,” *The Washington Post*, June 8, 1972, A29; “Prophets of Doom Come on Strong But Ecology Talks Sideline Them,” *Los Angeles Times*, June 15, 1972, A16.

³¹⁶Joe Alex Morris Jr., “World Population Issue Surfaces at Conference: Third World Nations Indicate That They Will Oppose Family Planning As Conspiracy,” *Los Angeles Times*, June 10, 1972, A2.

bush[ed].”³¹⁷ Ehrlich complained that population had been “kicked under the rug” when it should have been “at the top of the issues” discussed at the conference.³¹⁸ University of Colorado professor Kariba Munio, originally from Kenya, blamed pollution on capitalism and referred to population control as “nothing short of genocide.”³¹⁹ Given the explosive nature of population talk at the conference, U.N. Secretary General Kurt Waldheim proposed that the issue be tabled until the 1974 U.N. World Population Conference, which will be discussed in Chapter Seven.

While this first critique of *The Limits to Growth* focused on the potentially deleterious consequences of limiting economic growth, particularly for the global south and for the poor in the global north, the second critique undermined the Club of Rome’s call for an end to economic growth by pointing out that the World3 model did not account for market forces that would promote resource substitution and pollution mitigation, or for the technological advances that would facilitate these desiderata. A reviewer for *The Economist* argued that the prediction of disaster resulting from continued economic growth was inevitable for any scientist who “plots existing exponential economic growth against the elasticities of supply and substitution for particular things as assumed within known technology,” suggesting that technological improvements would allow for continued economic growth within the confines of natural resource limitations.³²⁰ Another critic complained that *The Limits to Growth* misunderstood “almost every market elasticity” and criticized “its blinkered obsession with the supposed importance of today’s largely accidental mix of materials.”³²¹ As British economist Barbara Ward explained, “there are always changes. Scarcities bring about modifications in price; these stimulate the appearance of substitutes or the discovery of new reserves and also bring about unpredictable swings in the pattern of demand. Any supposedly iron law of

³¹⁷Sabin, see n. 13, 56.

³¹⁸Jr., “World Population Issue Surfaces at Conference: Third World Nations Indicate That They Will Oppose Family Planning As Conspiracy,” see n. 316.

³¹⁹Ibid.

³²⁰See n. 301, 20.

³²¹“Ecodoom: Fall of Rome,” *The Economist*, June 3, 1972: 78.

exponentially diminishing supply has yet to be discovered.”³²² As a result of its inability to model technological change, the *New York Times Book Review* dismissed the World3 model as an example of “the oldest maxim of computer science: Garbage In, Garbage Out.”³²³

This critique, which centered on the ability of markets to adequately distribute scarce resources and faith in the potential for yet-undeveloped technologies to accommodate both population growth and economic growth within the Earth’s natural limits, gained a vocal advocate in the late 1970s: University of Illinois economist Julian Simon. In the late 1960s, Simon had published articles on “marketing” family planning and small families in the global south, with funding from the Population Council.³²⁴ By 1970, however, Simon’s view of population growth had changed. Influenced by agricultural economist Ester Boserup, who argued in the 1965 book *The Conditions of Agricultural Growth* that population growth and the scarcity it produced spurred technological development, Simon reconsidered the economics of population growth.³²⁵ In a 1970 talk titled “Science Does Not Show There Is Overpopulation,” he described population growth as “a triumph for mankind” and argued that “whether population growth is too fast or too slow is a value judgment, not a scientific one.”³²⁶ His increasingly market-based understanding of population and the environment will be addressed at greater length in Chapter Seven.

The Limits to Growth provided both support and uncertainty to the environmental overpopulation discourse. In its emphasis on population control as necessary to avert any future ecosystem collapse, it heightened public and expert anxiety about population growth. However, *The Limits to Growth* also undermined the idea that population control was a panacea that would allow for and even promote continued economic growth, as proponents of the

³²²Ward, see n. 311, 68.

³²³Quoted in Sabin, see n. 13, 88.

³²⁴For Population Council funding, see Frank W. Notestein to Shlomo Maital, Nov. 21, 1978, folder 7, box 13; Simon’s articles include: Julian L. Simon, “A Huge Marketing Research Task: Birth Control,” *Journal of Marketing Research* 5, no. 1 (1968): 21–27; Julian L. Simon, “The Role of Bonuses and Persuasive Propaganda in the Reduction of Birth Rates,” *Economic Development and Cultural Change* 16, no. 3 (1968): 404–411.

³²⁵Ester Boserup, *The Conditions of Agricultural Growth: The Economics of Agrarian Change Under Population Pressure* (Chicago: Aldine, 1965).

³²⁶Quoted in Sabin, see n. 13, 62.

environmental and economic overpopulation discourses had argued. It insisted that inequality and environmental degradation did not result from individual reproductive or financial profligacy, but rather from unlimited economic growth and its unequal distribution. The OPEC oil embargo of 1973–1974 and the resulting energy crisis appeared to offer additional support to the arguments of *The Limits to Growth*, suggesting that fossil fuels were indeed growing scarce, and that increased efforts to mine them would divert productivity from agriculture and industry.³²⁷ Ultimately, however, the rise of neoliberalism in the U.S. and Western Europe would lead to a restored faith in markets and their ability to allocate scarce resources among growing populations (usually in highly unequal ways), as will be discussed at greater length in Chapter Seven.

Conclusion

The popularization of the environmental overpopulation discourse in the United States — through Moore and Draper’s advertisements, Ehrlich’s writings and public appearances, and the efforts of Zero Population Growth — heightened the concern of U.S. citizens about population growth worldwide by attributing to it the increasingly acute problems of their own country: war, political polarization, poverty, crime, urban strife, traffic, and pollution. Population growth offered a unified explanation for all of these problems, and population control appeared as a simple technological solution. The environmental discourse particularly captured the attention of white middle-class students and other young people. These members of the “baby boom” generation had grown up in a relatively crowded world, and saw the sacrifice of large families as something they could do to ease the social, economic, political, and racial tensions that were palpable in the U.S. and worldwide by the late 1960s. For young people who became involved in the antiwar movement and movements for civil and women’s rights, the environmental movement was closely aligned, and population one of its

³²⁷Timothy Mitchell explains how oil producing countries created the perception of scarcity in the early 1970s in Mitchell, *Carbon Democracy: Political Power in the Age of Oil*, see n. 90.

most visible issues.

Growing concern about population growth among U.S. citizens and policy makers translated into increased government funding for population control programs both at home and abroad. However, it also resulted in increased funding for research into the causes and consequences of “the population problem,” and this research began to undermine both the environmental and economic overpopulation discourses. Natural scientists and demographers demonstrated that environmental degradation had far outpaced population growth over the previous decades, attributing pollution to new industrial processes that also undermined markets for natural resources, thereby contributing to poverty in the global south. Research done by the Commission on Population Growth and the American Future revealed that the roots of poverty, crime, and urban strife lay in structural inequality rather than population growth, and attributed traffic, resource depletion, and some types of pollution not to aggregate population growth but to suburbanization. Finally, *The Limits to Growth* demonstrated that human society was on a collision course with the planet Earth, and that population control would not deter that collision.

While this chapter has traced the growing influence and visibility of the environmental overpopulation discourse in the 1960s, it has also demonstrated that visibility exposed the discourse to challenges — from scientists in the global north and policy makers in the global south — that it could not withstand. Critiques of the environmental overpopulation discourse and new research supporting those critiques destabilized the environmental overpopulation discourse and also began to weaken the economic overpopulation discourse. The economic discourse came under increasing attack later in the 1970s, as will be discussed in Chapter Seven, which turns the focus of this story back to the global arena.

Chapter 7

The Geopolitics of Population Control

In 1970, U.N. Secretary-General U Thant acknowledged that the U.N. had fallen far short of its goals for the “United Nations Development Decade” of the 1960s. He declared that a “Second United Nations Development Decade” would begin on January 1, 1971.¹ This time, the U.N. would pay particular attention to world population growth as a factor in development. When U Thant announced the Second Development Decade, he also announced that 1974 would be World Population Year, with a World Population Conference at which leaders from member states would focus on setting policies aimed at slowing population growth to promote development.

The 1970 announcement of World Population Year within the framework of the Second United Nations Development Decade was a major victory for the economic overpopulation discourse, as it signaled support from the U.N. for population control as a strategy of economic development. However, by the end of the decade, the economic overpopulation discourse had largely fallen apart. In the 1960s and 1970s, the experience of the global south indicated that economic growth could occur in the presence of high fertility, but that neither economic growth nor fertility decline would alleviate poverty, improve living standards, or close the socioeconomic gap between the global north and global south. By the mid-1970s, demographers and other social scientists had begun to accumulate empirical evidence questioning the Coale-Hoover model of population growth and economic development. These studies provided scientific support to a political critique of the economic overpopulation discourse leveled by demography graduate students in the U.S. and intellectuals and policy makers in the global south. When this critique erupted at the 1974 World Population Con-

¹Peter Jackson, “A Prehistory of the Millennium Development Goals: Four Decades of Struggle for Development in the United Nations,” *U.N. Chronicle* 44, no. 4 (2007).

ference, John D. Rockefeller III, a major architect of the economic overpopulation discourse, acknowledged that the efforts of the population establishment over the previous two decades had failed to alleviate poverty or promote economic development and announced that new approaches would be necessary.

This chapter traces the demise of the economic overpopulation discourse from about 1970 to 1984. It begins with a little-known and unsuccessful episode in the history of the Population Council's public relations efforts that aimed at shoring up global public support for the Council and — by extension — for the economic overpopulation discourse. I then turn to the scientific and political critiques of that discourse that were beginning to emerge in Latin America and the United States, which shaped political debates at the 1974 World Population Conference. I argue that the Conference signaled the rejection by a majority of the world's countries of the economic overpopulation discourse and of population control as a strategy of modernization or economic development. Following the Conference, several organizations that had played a strong role in promoting the economic overpopulation discourse and carrying out population control projects — including the Population Council, the Ford Foundation, and the International Planned Parenthood Federation — began to shift their efforts from population control to reproductive health. This shift was facilitated by the passing of many members of the overpopulation generation — including Frank Notestein, Frederick Osborn, William Henry Draper Jr., and John D. Rockefeller III — and the growing power of a new generation who came of age during the civil rights era. However, I demonstrate that these new efforts to promote reproductive health in the global south and the U.S. were challenged beginning in 1984 by the rising political power of neoliberalism and evangelical Christianity in the United States. The chapter ends by examining how these ideologies combined to destroy the last vestiges of the economic overpopulation discourse and threaten reproductive health and autonomy worldwide.

7.1 Beyond Family Planning: Berelson's Public Relations Efforts for the Population Council

After U Thant's 1970 announcement of the Second United Nations Development Decade and World Population Year, Population Council president Bernard Berelson launched his most ambitious public relations effort on behalf of the Population Council: getting the Council nominated for the Nobel Peace Prize in 1972, the year of the Council's twentieth anniversary.² Berelson's rationale was that "international efforts to come to grips with the world's population problem would be considerably enhanced if the Nobel Peace Prize Committee would offer recognition to one of the private organizations active in this field."³ That is, the Prize would not only celebrate what the Council had already done, but would further promote its population control project by enhancing its legitimacy in the geopolitical arena. Rockefeller expressed the same rationale when he explained that "recognition of one [member of the population establishment] would endorse the efforts of all – and assist in overcoming political obstacles which continue to hamper the progress we all so earnestly seek."⁴ However, the perception by the public that the Council had engineered its own nomination would undermine the effect Berelson and Rockefeller expected the nomination to have.

Berelson and his staff researched the Prize and detailed the steps they would need to take in order to secure a credible nomination.⁵ To avoid revealing "evidence that it's a planned campaign," Berelson engaged the assistance of demographer Ronald Freedman, director of the Population Studies Center at the University of Michigan, who recruited Ansley Coale, director of Princeton University's Office of Population Research, and Phillip Hauser, director of the Population Research and Training Center at the University of Chicago, to form an

²Bernard Berelson to John D. Rockefeller III, Dec. 7, 1970, "Nobel Prize, 1970 - August 1971," box AD25, accession 2.

³John D. Rockefeller III to Lester Pearson, Sept. 20, 1971, "Nobel Prize, September 1971 - 1973," box AD25, accession 2.

⁴Ibid.

⁵Bernard Berelson, "Nobel Peace Prize," Aug. 13, 1971, "Nobel Prize, 1970 - August 1971," box AD25, accession 2.

“organizing committee.”⁶ In his correspondence with Freedman, Berelson referred to their work as “Project X” and encouraged Freedman to call him collect as often as necessary to discuss it.⁷ Berelson’s reliance on Freedman, Coale, and Hauser in this effort, and their willingness to assist him, indicates the strong personal relationship between these men and the level of Council influence over the activities of the research centers it funded.

Berelson did the majority of the organizing, leaving nothing to chance or to Freedman’s judgment. Berelson developed the approach and supplied Freedman with all of the necessary correspondence. He identified five people with connections to the Council who were also eligible to submit nominations for the Nobel Peace Prize: former Colombian president Alberto Lleras Camargo, who was eligible as a member of the International Court of Arbitration; and former Nobel laureates Lester Pearson, Ralph Bunche, Linus Pauling, and Norman Borlaug. Berelson supplied Freedman with a letter (to be sent from Freedman under his own name) for each of these men (including a few sentences specific to each), asking them to nominate the Council and including a sample letter of nomination from which they could draw in writing their own letters.⁸ He also gave Freedman a letter to send to John D. Rockefeller III, asking Rockefeller to send an additional note of encouragement to Pearson, Bunche, and Lleras Camargo.⁹ In his draft note from Freedman to Rockefeller, Berelson used open flattery to cajole Rockefeller, obsequiously informing him that “my colleagues and I are deeply gratified to be associated with this venture, whatever the outcome. Certainly the population field deserves such recognition and the roles of the Council and of you yourself as founder and Chairman have been of historic importance.”¹⁰ Berelson instructed Freedman to solicit

⁶Harrison Huey, “Confidential Memorandum to Bernard Berelson: Notes on Conversation with Mr. Francis Harmon,” July 15, 1970, “Nobel Prize, 1970 - August 1971,” box AD25, accession 2.

⁷Bernard Berelson to Ronald Freedman, Aug. 27, 1971, “Nobel Prize, 1970 - August 1971,” box AD25, accession 2; Bernard Berelson, “Letter from Freedman to go along as a separate letter but in the same envelope with some of the requests for supporting statement,” 1971, “Nobel Prize, 1970 - August 1971,” box AD25, accession 2.

⁸Bernard Berelson, “Letter from Ronald Freedman to Pearson, Bunche, Pauling, Borlaug, and Lleras Camargo,” 1971, “Nobel Prize, 1970 - August, 1971,” box AD25, accession 2.

⁹Bernard Berelson, “Letter from Freedman to Rockefeller, later,” 1971, “Nobel Prize, 1970 - August, 1971,” box AD25, accession 2.

¹⁰Bernard Berelson, “Letter from Freedman to Rockefeller, now,” 1971, “Nobel Prize, 1970 - August 1971,” box AD25, accession 2.

similar encouragements for Linus Pauling and Norman Borlaug from Roger Revelle and Jack Maier of the Rockefeller Foundation, which had funded much of their research.¹¹ Although Pearson, Bunche, and Pauling declined to nominate the Population Council, Borlaug and Lleras Camargo both agreed, submitting nomination letters to Freedman to forward to Oslo along with the letters of support he solicited.¹²

Berelson identified about 25 additional potential supporters and provided Freedman, Coale, and Hauser with a letter to send to each.¹³ For potential supporters in other countries, Berelson gave Freedman an additional letter, asking “whether you think it might be possible to secure a supporting statement for the Council from someone high in your government who appreciates the assistance the Council has been able to provide to your country and to this field.” The form letter continued, “since (the Prime Minister, the King, the President, etc.) signed the World Leaders Statement on Population that was initiated by Mr. Rockefeller, it may be that he (she) would be willing to submit a supporting statement at this time.”¹⁴ International support seemed particularly critical, both because the Nobel Peace Prize was an international award and because global opinion of the United States had suffered as a result of the Vietnam War. Berelson was advised that “it’s going to be hard for any American to win the Prize now. Any American is behind the eight ball as long as the Vietnam War is going on. You can’t award a peace prize to a country that’s at war.”¹⁵ Datus Smith Jr., assistant to Rockefeller, suggested to Berelson that his nomination efforts “soft-pedal official U.S. participation” at least “until after there had been an impressive accumulation of non-U.S. support.”¹⁶ In addition to the formal nominations and

¹¹Bernard Berelson, “Letter from Freedman to Roger Revelle,” 1971, “Nobel Prize, 1970 - August 1971,” box AD25, accession 2; Bernard Berelson, “Letter from Freedman to Jack Maier,” 1971, “Nobel Prize, 1970 - August 1971,” box AD25, accession 2.

¹²Alberto Lleras Camargo to August Schou, May 24, 1972, “Nobel Prize, September 1971 - 1973,” box AD25, accession 2; Norman Borlaug to August Schou, Nov. 23, 1971, “Nobel Prize, September 1971 - 1973,” box AD25, accession 2.

¹³Bernard Berelson, “Letter from Freedman (or Coale or Hauser, as appropriate), requesting supporting statements,” 1971, “Nobel Prize, 1970 - August 1971,” box AD25, accession 2.

¹⁴Berelson, “Letter from Freedman to go along as a separate letter but in the same envelope with some of the requests for supporting statement,” see n. 7.

¹⁵Huey, see n. 6.

¹⁶Datus Smith Jr. to Bernard Berelson, Aug. 11, 1971, “Nobel Prize, 1970 - August 1971,” box AD25,

the letters from Coale and Hauser, Freedman received letters of support from 16 people, including World Bank president and former U.S. Secretary of Defense Robert McNamara, U.N. Population Division director Miloš Macura, and directors of population studies centers at the East-West Center (Honolulu), Hacettepe University (Ankara), the Statistical Center (Manila), Australian National University, the University of the Andes (Bogotá), and Harvard University.¹⁷ Many of these directors were recipients of Population Council grants or fellowships.

Each letter sent by Freedman, Coale, and Hauser to potential nominators or supporters included a statement by Berelson, explaining why the Population Council was deserving of the Nobel Peace Prize. The statement detailed the Council's work to improve living conditions in the global south through the provision of family planning services, arguing that "any improvement in the human condition cannot fail to improve the prospects for peace." He continued,

differential rates of population growth among countries is a potential source of international friction. The unhappy disparity between the rich and the poor nations, the haves and the have-nots, is only heightened by the differential burdens of population growth, as the frustration of rising aspirations by continued population growth leads to conflicts on the international front and to repressive solutions internally.¹⁸

This statement drew on the economic discourse of overpopulation, attributing international strife and the socioeconomic inequalities that underpinned it to population growth, and legitimized the Council's population control work as promoting international peace.

The International Planned Parenthood Federation also celebrated its twentieth anniversary in 1972, and fifty members of the Swedish Parliament nominated one of its founders, Elise Ottesen-Jensen, for the Nobel Peace Prize in that year as well.¹⁹ Ultimately, the Nor-

accession 2.

¹⁷Ronald Freedman to Bernard Berelson, Feb. 7, 1972, "Nobel Prize, September 1971 - 1973," box AD25, accession 2.

¹⁸Berelson, "Nobel Peace Prize," see n. 5, 1-2.

¹⁹"International Planned Parenthood News," 1972, "Nobel Prize, September 1971 - 1973," box AD25, accession 2.

wegian Nobel Committee declined to award a Peace Prize in 1972. Following Freedman's request, Borlaug and Lleras Camargo re-nominated the Population Council for 1973, but in that year the Prize was shared between Henry A. Kissinger and Le Duc Tho.²⁰ Nonetheless, John D. Rockefeller III was pleased with Berelson's work as president of the Population Council, telling Berelson that, under his "imaginative and effective leadership," the Council "really has become a major factor in the world population picture."²¹ By the beginning of the 1970s, however, there was still little evidence that population control efforts were either reducing fertility or improving living standards. In fact, population growth had begun to slow at the end of the previous decade, but the 1970 censuses were still being tabulated, so that slowing had not become apparent. Moreover, even when it did become apparent, new evidence from the global south was beginning to question the theoretical basis for Ansley Coale and Edgar Hoover's 1958 *Population Growth and Economic Development in Low-Income Countries*, which remained one of very few sources of empirical support for the economic overpopulation discourse.

7.2 Concerned Demographers

Challenges to the Coale-Hoover model of population growth and economic development came mainly from demographers and other social scientists affiliated with CELADE, the U.N. population research center in Santiago, Chile, and CEBRAP, the Brazilian Center for Analysis and Planning in São Paulo. These scholars leveled strong critiques at modernization theory and the economic overpopulation discourse, which was deeply imbricated with modernization theory, as discussed in Chapter Four. At the 1970 Regional Latin American Population Conference in Mexico City, scholars from CELADE and CEBRAP argued that the transition to

²⁰For the Council's re-nomination, see: Alberto Lleras Camargo to August Schou, Jan. 17, 1973, "Nobel Prize, September 1971 - 1973," box AD25, accession 2; Ronald Freedman to Alberto Lleras Camargo, Dec. 5, 1972, "Nobel Prize, September 1971 - 1973," box AD25, accession 2; Ronald Freedman to Norman Borlaug, Oct. 20, 1972, "Nobel Prize, September 1971 - 1973," box AD25, accession 2.

²¹John D. Rockefeller III to Bernard Berelson, Dec. 30, 1971, folder 478, box 71, sub-series 4, series 3, record group 5.

modernity in Western Europe and North America was not an appropriate template for countries in the global south, which “have to cope with trade barriers, barriers to international labor mobility, and small-scale markets,” none of which had been issues for the countries of Western Europe and North America in the nineteenth century.²² These scholars contended that the focus of experts in the global north on fertility in the global south as an explanation of poverty and inequality detracted attention from structural and geopolitical factors. In particular, they maintained that the mechanism linking fertility to economic growth in the Coale-Hoover model — the investment of household savings in capital accumulation — was not relevant to Latin America, where most households did not have enough income to save, regardless of fertility.²³ By focusing on per capita income as the outcome, the Coale-Hoover model failed to account for extreme inequality in the countries of the global south. Angel Fucaraccio of CELADE argued that the economic overpopulation discourse and the Coale-Hoover model themselves were tools of the dominant class to repress dissent among the poor who are “the potential executioners of the current system.” The swelling of their ranks posed a threat to the existing order, he maintained, because “the greater their number and the greater their share of the total population, the greater is their power, *ceteris paribus*.”²⁴ Susana Torrado de Ipola extended this argument to the international arena, contending that “the U.S. government does not *use*, as much as it crudely manipulates those theories that postulate a decline in fertility as a prerequisite of economic and social development.”²⁵ She continued that the State Department’s approach to poverty in the global south was not to change the conditions causing it, but rather “to prevent the absolute growth of the exploited groups” who posed a threat to the established geopolitical order.²⁶

These critiques came to the attention of U.S.-based demographers through the activities

²²Eric R. Weiss-Altaner, “Fertility Decline, Savings and Economic Growth,” *Concerned Demography* 2, no. 3 (1971): 8.

²³*Ibid.*, 9.

²⁴Paraphrased in *ibid.*, 11.

²⁵Susana Torrado de Ipola, “A Contribution of the U.S. Department of State to the Latin American Population Conference, Mexico, 1970,” *Concerned Demography* 2, no. 3 (1971): 3-6, 4, emphasis in the original.

²⁶*Ibid.*, 5.

of graduate students who, inspired by the scholarship from Latin America, launched a dissident movement within the Population Association of America (PAA) in 1968. This group, known as Concerned Demographers, consisted mainly of graduate students who described themselves as “women and men of the left who believe in the development of a more egalitarian and democratic social structure at home and the encouragement of social revolution and economic development abroad.”²⁷ They affiliated themselves with the antiwar and civil and women’s rights movements, and with Science for the People, an organization founded in 1969 that used Marxist theory to advocate against racism, sexism, and classism in science, and for the use of science, technology, and medicine to “serve social needs rather than military and corporate interests.”²⁸

The name “Concerned Demographers” was a direct reference to the Union of Concerned Scientists, an organization founded in 1968 by faculty and graduate students at the Massachusetts Institute of Technology to advocate for peaceful rather than military applications of science by the U.S. government. One of its stated aims was “to devise means for turning research applications away from the present emphasis on military technology toward the solution of pressing environmental and social problems.”²⁹ The establishment of these organizations in the late 1960s indicates a growing sense among U.S.-based scientists that the U.S. government — a major funder of scientific research — could not be trusted to use scientific knowledge to improve the human condition. Scientists’ concerns also reflected a broader loss of trust in the U.S. government among U.S. citizens during the Vietnam War and other upheavals of the 1960s. In the humanities and social sciences, the late 1960s saw calls for a radicalization of traditional disciplines, including attention to issues of race, gender, class, imperialism, and capitalism, as well as alternatives to methods that had become standard.

The Concerned Demographers advocated for global social justice within the practice of demography and for greater openness and democracy in demographers’ own institutions, par-

²⁷Concerned Demographers, “The PAA: A Time for Change,” *Concerned Demography* 1, no. 4 (1970): 2.

²⁸<http://science-for-the-people.org> (accessed 5/15/15).

²⁹Union of Concerned Scientists, *Founding Document: 1968 MIT Faculty Statement* (n.d.), URL: <http://www.ucsusa.org/about/founding-document-1968.html#.VVX4revZr8F> (accessed 05/15/2015).

ticularly the PAA, where they lobbied for full voting rights for student members and for the active recruitment of African American graduate students to population research centers.³⁰ Drawing on standpoint theory, the Concerned Demographers argued that “the experience of being black would probably give added insights and awareness into the experiences of minority status which might lead to more fruitful research.”³¹ They also critiqued demography’s lack of attention to women’s rights, with one member arguing that “fertility rates around the world will not be brought down until women are liberated from their role as a tool in the means of production, until they are freed from the degradation of being a baby producing machine.” She also pointed to discrimination against women in demography itself, “where women are permitted to be clerical assistants but rarely are seen in the classroom.”³²

The Concerned Demographers were based initially at the University of Wisconsin and later at the University of Pennsylvania. The group drew members from population studies centers at other universities — particularly the University of Michigan and Cornell University — and members took turns hosting the group’s newsletter, *Concerned Demography*, at their home institutions.³³ *Concerned Demography* expressed the members’ views, published their research, and discussed research published in Latin America. According to former member Charles Hirschman, it was no accident that the organization formed at the University of Wisconsin’s Center for Demography and Ecology (CDE). CDE boasted a young faculty, many of whom had been trained at the University of Michigan, where the influence of Chicago-trained urban ecologists Beverly and Otis Dudley Duncan was strong. The research of CDE faculty tended to focus on such issues as racial inequality, segregation, and social stratification.³⁴ Duncan himself, however, seems to have been highly critical of the group.

³⁰Concerned Demographers, “PAA Business Meeting: No Yawns This Year,” *Concerned Demography* 1, no. 4 (1970): 8–9.

³¹*Ibid.*, 9.

³²Concerned Demographers, “Reader Response — Pro and Con,” *Concerned Demography* 1, no. 4 (1970): 13.

³³Telephone interview with Avery “Pete” Guest, 6/17/2014; interview with Gretchen Condran, 6/8/2012.

³⁴“Charles Hirschman, Interview with the PAA History Committee for the PAA Oral History Project,” May 1, 2014, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/Charles_Hirschman_interview_May_2014.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/Charles_Hirschman_interview_May_2014.pdf.

At the 1969 PAA meeting, when Duncan was president, he invited anyone dissatisfied with the PAA to leave, a clear reference to the Concerned Demographers.³⁵ While some senior demographers were interested in and sympathetic to the Concerned Demographers, such as Barbara Lee Heyns of Harvard University, who thanked them for “a welcome critique of the field,”³⁶ others felt that the group’s activities threatened the security of the discipline’s funding, indicating the strong influence of the Ford Foundation and the Population Council.³⁷ Thomas E. Steahr of the University of North Carolina described *Concerned Demography* as “the worst piece of anti-intellectual propaganda I have ever had the misfortune to read.” He warned its editors that “national circulation of such trash does a disservice to yourself, the field of demography, and the University of Wisconsin.”³⁸

The Concerned Demographers were openly critical of the funding structure of their field, particularly the ways in which senior scholars allowed funders to direct their work in exchange for “very high salaries, consulting fees, and prestige.”³⁹ Berelson, Freedman, and Donald Bogue were particular targets. The Concerned Demographers also critiqued the Population Council in general for its association with Frederick Osborn and his eugenics program.⁴⁰ In response, Berelson not only acknowledged his influence over demographic scholarship, but defended the right of funders to direct scientific research, rejecting the “tired claim of the academic disciplines to be allowed to do anything they want when they want and to complain if funding sources are not prepared to respond to that rather arbitrary claim.”⁴¹

Concerned Demography described the PAA as “an active advocate of the established order” that “den[ied] its role just as actively,” pointing to the individual and organizational links between the PAA, the Census Bureau, the U.S. Agency for International Development

³⁵Véronique Petit, *Counting Populations, Understanding Societies: Towards an Interpretative Demography* (New York: Springer, 2013), 43.

³⁶Concerned Demographers, “Reader Response — Pro and Con,” see n. 32, 11.

³⁷Guest interview.

³⁸Concerned Demographers, “Reader Response — Pro and Con,” see n. 32, 10.

³⁹Concerned Demographers, “The PAA: A Time for Change,” see n. 27, 2.

⁴⁰Guest interview.

⁴¹Bernard Berelson to Norma Nager and Paul Schollaert, Apr. 21, 1970, “PAA 1970,” box AD28, accession 2, 3.

(USAID), the Ford Foundation, and the Population Council.⁴² The Concerned Demographers referred to the 1968 special issue of *Demography* on family planning, edited by Donald Bogue and discussed in Chapter Five, as “a propaganda sheet for the A.I.D.-Nixon position on why family planning is needed around the world.”⁴³ They recommended that the PAA establish “Poor People’s Advisory Committees” — analogous to PAA’s advisory committee to the Census Bureau — to “meet with various civil rights, minority and lower income groups to find out their needs for research information and how the PAA might facilitate necessary studies.”⁴⁴ With this proposal, the Concerned Demographers called for a more explicit linkage between politics and science, pointing out that politics and science were already linked in the PAA’s service to the Census Bureau. They characterized the PAA’s “statements of being ‘value-free’ and non-partisan” — central to PAA rhetoric from its interwar founding — as “hypocritical.”⁴⁵

Substantively, the Concerned Demographers opposed the framing of population control as a solution to all of the world’s problems and objected to the focus of mainstream demography on individual factors as drivers of fertility. They argued that demographers needed to think structurally — about economic, social, and political institutions rather than individual behavior — to understand demographic patterns.⁴⁶ They believed that “handing out transistor radios to men as incentive to have a vasectomy was not the way to improve living standards” in the global south.⁴⁷ Research published in *Concerned Demography* offered alternative explanations for many of the social ills frequently attributed to population growth. For example, in a 1972 article, Hirschman addressed the issue of unemployment in the global south, pointing out that it was unsurprising that “population explosionists” attributed “surplus labor” to high fertility “since this is also their explanation for every social problem

⁴²Concerned Demographers, “The PAA: A Time for Change,” see n. 27, 1-2.

⁴³Ibid., 2.

⁴⁴Ibid., 3.

⁴⁵Ibid., 2.

⁴⁶Guest interview; Charles Hirschman, “A New Look at Human Ecology and Marx,” *Concerned Demography* 3, no. 2 (1972): 2–6.

⁴⁷Condran interview.

known to mankind.”⁴⁸ Instead, Hirschman pointed to the efforts of companies in the core countries of the global north to retain market share in the newly-independent countries of the global south, arguing that this imported industrialization “did not create the backward and forward linkages, which are crucial to sustained economic development.”⁴⁹ That is, even when countries in the global south substituted imports with domestic industries, those industries were still vertically integrated into companies based in the global north, with assembly occurring in the global south, but all other steps in the manufacturing process controlled by and accruing wealth for multinational companies, a situation which also impeded the development of export industries in the global south. Hirschman pointed out that aid from the global north had promoted the development of capital-intensive rather than labor-intensive industrialization in the global south, requiring companies in the global south to purchase capital from the global north and underutilize their human resources. He called for more research, not on individual-level drivers of unemployment in the global south, but on “how foreign businesses gain entry to the local economy and then continue to pursue policies which are inimical to the full utilization of local manpower resources.”⁵⁰ As a solution, he did not recommend birth control to prevent the expansion of the labor force, but rather argued that “it will be necessary to alter the present structural links between the advanced capitalist countries and the path to industrialization in developing nations.”⁵¹ In effect, these graduate students were attempting to revive the interwar version of demographic transition theory and its critique of imperialism and international economic exploitation.

A review of Paul and Anne Ehrlich’s 1970 book, *Population, Resources, Environment in Concerned Demography* concluded that “the Ehrlichs have their hearts in the right place,” but offered the following critique:

they do not produce a detailed theoretical description of the connections between

⁴⁸Charles Hirschman, “The Labor Surplus Problem in Third World Countries: Alternative Explanations,” *Concerned Demography* 3, no. 1 (1972): 6.

⁴⁹Ibid., 11.

⁵⁰Ibid., 12.

⁵¹Ibid., 13.

population and the ills they diagnose. They are thus open to the danger that bad theory may yield bad action: it identifies the wrong devil, or overemphasizes one devil, while the more important fiends hoof away unscathed.⁵²

As was common in the Concerned Demographers' critiques of the population establishment, the reviewer described the Ehrlichs' population control project as an effort to maintain the geopolitical status quo, which was threatened by population growth. Characterizing the geopolitical order as "a system of exploitation and inequality," the reviewer argued that it "is seriously threatened by continuing population growth" because "such growth reveals the inadequacies of an inflexible system and sharpens them. All the while it provides a weapon to the exploited by increasing their numbers."⁵³ Like the population establishment, the Concerned Demographers explicitly acknowledged the revolutionary potential of global population growth; unlike the population establishment, they welcomed it.

In 1970, the Concerned Demographers responded to the announcement of Rockefeller's Commission on Population Growth and the American Future, discussed in Chapter Six. They predicted that "population growth rates will be used as the prime explanation of most of the social problems around the world. The commission will conclude that growth rates are the primary cause of slow economic development, poverty within nations, riots, war and whatever other ills afflict man." They predicted further that "the commission's report will then be used to justify our inaction on tackling the real, complex causes of these problems around the world."⁵⁴ The Concerned Demographers stated that they did not oppose population stationarity, but argued that population growth was not the world's most pressing problem. Rather, they contended that "the real problems abroad are symbolized by the name Rockefeller. American industries, such as those owned by the Rockefellers, are draining foreign countries of their resources."⁵⁵ Steve Weissman of the Pacific Studies

⁵²Eric R. Weiss-Altaner, "Review of *Population, Resources, Environment* by Paul and Anne Ehrlich," *Concerned Demography* 2, no. 3 (1971): 15.

⁵³Ibid., 22.

⁵⁴Concerned Demographers, "The Rockefeller Commission: Hope for Whom?" *Concerned Demography* 1, no. 4 (1970): 5.

⁵⁵Ibid.

Center in Palo Alto, California, expressed a similar sentiment in a 1970 article in *Ramparts*, titled “Why the Population Bomb is a Rockefeller Baby.”⁵⁶ As discussed in Chapter Six, the Rockefeller Commission defied these expectations, but the expectations nonetheless speak to the issues addressed by the Concerned Demographers

By 1973, *Concerned Demography* had ceased publication. It is unclear exactly what happened to the group, but it appears that most of its leaders finished their Ph.D. programs and got jobs in population studies centers or departments of sociology, with their critique dissipating as they became part of the establishment.⁵⁷ Guest went on to edit *Demography* from 1991 to 1993 and Hirschman served as president of PAA in 2005, though both men retained a reflexive orientation toward the field of demography.⁵⁸ Although the group’s existence was short lived, the Concerned Demographers had called attention to their field’s political allegiances and the effects of those allegiances on demographic scholarship, demanding that demographers account for their power in the world.

The activities of the Concerned Demographers also contributed to a revival of Notestein and Davis’s interwar version of demographic transition theory. Notestein commented several times that he resented the use of the name “Concerned Demographers,” as it implied that he and other demographers affiliated with the Population Council were not concerned about global poverty and inequality. In response to the group’s presentations and publications, he emphasized his own attribution of high fertility to unfavorable socioeconomic conditions. In subsequent statements, he described the Population Council’s work as being as an adjunct to structural change rather than a trigger of modernization.⁵⁹

The co-optation of the Concerned Demographers by the population establishment did not inhibit the critical analysis of mainstream population thought in Latin America that had inspired their work. In a 1974 report to the Ford Foundation, Carmen Miró, director of

⁵⁶<http://pulsemmedia.org/2009/10/03/why-the-population-bomb-is-a-rockefeller-baby/> (accessed 1/7/2015).

⁵⁷Guest interview.

⁵⁸See, for example, Guest, see n. 23.

⁵⁹Frank W. Notestein to Unsigned, Dec. 10, 1969, “PAA 1970,” box AD28, accession 2.

CELADE and a former Population Council fellow, reported that “in the case of Latin America, the demographic phenomena considered by many as the most problematic. . . appear as having their main causes in the historical process which led to the formation of capitalistic dependent societies characterized by a growing internal heterogeneity.”⁶⁰ Echoing Notestein and Davis’s interwar work, Miró argued that Latin American countries were not poor because of their high fertility but rather were poor and had high fertility because “the differential manner of insertion of these societies into the world economy determined initially the formation in most countries of national economies dependant [sic] on exports of agricultural products, cattle, mineral products or other raw materials.”⁶¹ She recommended much more detailed analysis of rural and urban populations in specific countries and specific economic sectors to more fully understand the relationship between population and economic development. Such social scientific critiques of the economic overpopulation discourse destabilized it and provided support to political critiques of population control as a development strategy, which emerged at the U.N.’s 1974 World Population Conference.

7.3 U.N. World Population Conference, 1974

The World Population Conference opened in Bucharest, Romania on August 19, 1974. It was the third in the U.N.’s decennial series of world population conferences, following Rome (1954) and Belgrade (1965), but was the first to be organized explicitly as a political meeting rather than a scientific meeting. Whereas the previous meetings had been co-sponsored by the International Union for the Scientific Study of Population (IUSSP) and focused on scientific issues of population accounting and analysis, the 1974 meeting was sponsored entirely by the U.N. and included delegations from all 135 member states — 1,250 delegates

⁶⁰Carmen Miró, “Interrelationship of Population Policy and Aspects of Development,” Oct. 29, 1974, “Ford Foundation Conference on Social Science Research on Population and Development,” box AD30, accession 2, 5.

⁶¹Ibid., 5.

in total — with the explicit aim of discussing and setting global population policies.⁶² Parallel to the official conference, scientific and nongovernmental organizations held a Population Tribune, though there was some overlap: the Population Council participated in both the Tribune and in the official conference in its consultative status with the U.N. Economic and Social Council.⁶³

Surprisingly few participants or observers commented on the curious choice of Bucharest, the capital of Romania, as the venue for a conference aimed at limiting world population growth. Romania was a socialist state (though not closely aligned with the U.S.S.R.) that, under the leadership of Nicolae Ceaușescu, had outlawed contraception and abortion in 1966 in an effort to increase the birth rate — an extreme form of the general pronatalism of socialist states aimed at increasing the size of their work forces.⁶⁴ Ceaușescu's policies seemed a poor model for the conference, not only because they were pronatalist but also because they were coercive. Gail Kligman has described Ceaușescu's policies as “one of the most repressive pronatalist policies known to the world.”⁶⁵

Despite the repressive nature of Ceaușescu's pronatalism, Population Council demographer Paul Demeny, himself a defector from communist Hungary,⁶⁶ praised Romania's population policies as a shining example of how a government can use policy to influence population

⁶²“U.N. Press Release SG/SM/2064 POP/101: Text of Address by Secretary-General Kurt Waldheim to United Nations World Population Conference,” Aug. 19, 1974, folder 16, box 12, series 273; “The World Population Conference Meets in Bucharest in August,” 1974, folder 8, box 10, series 971; Patricia A. Taylor, “World Population Conference 1974: What Happens when Politicians and Demographers Meet? (Princeton Alumni Weekly),” n.d., “Bucharest,” box AD30, accession 2.

⁶³Ralph Townley, Bernard Berelson, May 15, 1974, “Bucharest,” box AD30, accession 2; Berelson also arranged for Oscar Harkavy, head of population projects for the Ford Foundation, to attend the official conference as a “Distinguished Guest,” Ralph Townley, Bernard Berelson, June 26, 1974, “Bucharest,” box AD30, accession 2.

⁶⁴Gail Kligman, “Political Demography: The Banning of Abortion in Ceausescu's Romania,” in *Conceiving the New World Order*, ed. Faye D. Ginsburg and Rayna Rapp (Berkeley: University of California Press, 1995); Teitelbaum and Winter, see n. 55.

⁶⁵Gail Kligman, *The Politics of Duplicity: Controlling Reproduction in Ceausescu's Romania* (Berkeley: University of California Press, 1998), 2.

⁶⁶Demeny had been a government statistician in Hungary. He defected during a 1957 conference in Geneva, and the Population Council helped him emigrate to the U.S. as a Council fellow at Princeton University's Office of Population Research, where he completed a Ph.D. in economics in 1961. For details, see “Paul Demeny, Interview with Jean Van Der Tak for the PAA Oral History Project,” June 8, 1988, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1977-93.pdf, URL: http://geography.sdsu.edu/Research/Projects/PAA/oralhistory/PAA_Presidents_1977-93.pdf.

growth. He explained that “individual fertility decisions,” which produced a birth rate of 14 per thousand members of the Romanian population in 1966, had been “found socially inadequate and inconsistent with an aggregate population target identified as desirable by the end of the century.” In response, he continued, the government had “moved to modify individual behaviour and to make it conform to the perceived public interest” by altering the social environment in which individual fertility decisions were made.⁶⁷ Demeny’s language described Romania’s population policies using the exact same language Population Council staff had used in their calls for population polices aimed at reducing population growth in Asia, Africa, and Latin America over the twenty years of the Council’s existence.

Demeny’s description of Romanian population policies highlights the fine distinction made by the Population Council and other members of the population establishment between voluntarism and coercion. Whereas other observers have described Romanian policies as oppressive, denying individuals and couples the ability to make choices regarding their childbearing by barring their access to birth control and abortion,⁶⁸ Demeny characterized Romanian population policies as having “operated on the price and availability of contraceptive methods and abortion;. . . seeking to modify existing fertility norms and values; and. . . introduced incentive schemes rewarding desired fertility behaviour and penalizing behaviour held socially undesirable.”⁶⁹ Demeny used a market-oriented language of voluntarism within the context of supply and demand to elide the coercive effects of economic incentives and penalties, as the Population Council did in the policies recommended to governments in the global south.⁷⁰

⁶⁷Paul Demeny, “Population Policy on the World Agenda – 1984,” Aug. 28, 1974, “Bucharest,” box AD30, accession 2, 8.

⁶⁸See, for example, Kligman, *The Politics of Duplicity: Controlling Reproduction in Ceausescu’s Romania*, see n. 65, and the 2007 film *4 Months, 3 Weeks and 2 Days*, written and directed by Cristian Mungiu.

⁶⁹Demeny, “Population Policy on the World Agenda – 1984,” see n. 67, 8-9.

⁷⁰For a discussion of Population Council thought on economic incentives, see Berelson, “Beyond Family Planning,” see n. 255.

7.3.1 Toward a World Population Plan of Action

The 1974 conference centered on a policy document known as the Draft World Population Plan of Action. This document had been developed over the previous few years by the U.N. Population Commission in consultation with a Committee of Experts, which included members from Argentina, Australia, Brazil, Chile, Colombia, Egypt, India, Italy, Japan, Mexico, Sweden, Thailand, the U.S. (Frank Notestein and Conrad Taeuber), West Germany, and Yugoslavia; consultants Charles Westoff (U.S.), Léon Tabah (France), and Carmen Miró (Panama, director of U.N. population research center in Santiago, Chile); and representatives of the U.N. Population Division, the U.N. Fund for Population Activities, the U.N. Food and Agriculture Organization, UNICEF, UNESCO, the World Health Organization, and the World Bank.⁷¹ In its draft phase, the Plan was the focal point of debates between two U.S.-based factions in the planning committee; at the conference, it became the focal point of debates between the U.S. and its allies and the rest of the world.

As a first step toward drafting the World Population Plan of Action, the Population Commission and its advisors reviewed the recent literature on the relationship between population and development and conducted a survey of governments on population trends and problems in all countries of the world. They agreed at the outset on three points:

first, as with other socio-economic policies, the ultimate goal of population policy in a country is to promote the development of the country and the well-being of its people; second, population policy attempts to achieve this common goal by affecting population variables; and third, in order to affect population variables, population policy needs to include measures and programmes belonging to a variety of sectors.⁷²

That is, population policies were policies in any sector aimed at influencing population variables with the ultimate goal of promoting economic development and well-being at both

⁷¹“Report of the Advisory Committee of Experts on the World Population Plan of Action on its Third Meeting,” Feb. 25, 1974, “World Population Plan of Action 1974,” box AD24, accession 2; “Advisory Committee of Experts on Global Population Strategy,” June 19, 1972, folder 2, box 17.

⁷²“Progress of Work on the Technical Background Study to the World Population Plan of Action, Prepared by the United Nations Secretariat,” June 26, 1973, folder 5, box 17, 6.

individual and aggregate levels. This statement suggested that population policy was to focus on the planning *of* population rather than planning *for* population. However, the planning of population was not to be an end in itself, but rather a means to increased well-being and economic development.

The literature review and government survey revealed that the consensus that had rapidly formed around the Coale-Hoover model following the 1958 publication of *Population Growth and Economic Development in Low-Income Countries* was beginning to break down, with more recent empirical studies challenging the model in some of the ways described in the previous section. One such challenge was recognition that high levels of poverty and inequality in countries of the global south meant that “a decline in fertility would not necessarily increase the flow of realized household savings,” which, in the Coale-Hoover model, provided the basis for capital accumulation.⁷³ Another was the attribution of unemployment and under-employment in the global south to such issues as land tenure, the seasonal nature of single-crop economies, discriminatory trade practices, and the emphasis on investment in capital-intensive (rather than labor-intensive) industries.⁷⁴

The survey sent to all governments of the world (not just U.N. members) asked 26 questions to ascertain how heads of state interpreted various demographic indicators. These questions asked whether the current rate of population growth of the country was “generally satisfactory,” “too high, needs to be moderated,” or “too low, needs to be raised,” and asked the same question about fertility rates.⁷⁵ It also asked whether each country had “a serious problem of sterility or subfecundity,” whether “illegitimacy” was considered “a serious problem in your country,” whether “the effective age at marriage of women in your country” was considered to be too low, and whether “polygamy” was considered “a serious problem in your country.”⁷⁶ It did not elaborate on how illegitimacy or polygamy might be problematic,

⁷³“Report of the Ad Hoc Committee of Experts on Programmes in Demographic Aspects of Economic Development, on its meeting held at United Nations Headquarters from 29 June to 3 July 1970,” Oct. 15, 1970, folder 5, box 17, 8.

⁷⁴Ibid.

⁷⁵See n. 72, 12.

⁷⁶Ibid., 13.

reflecting the assumption of the questionnaire's authors that the mere existence of illegitimacy or polygamy were problematic. The questionnaire asked whether a country considered its mortality rates (general and infant) too high, whether migration had "caused serious imbalances in the sex and age distribution of your country," whether dependency ratios were too high, and whether "the regional distribution of the population of your country" was adequate.⁷⁷ It also asked about the adequacy of systems of demographic data collection and which types of demographic research would "make a significant contribution to the proper formulation of population related policies in your country."⁷⁸

When the Population Commission cross-tabulated survey results with existing population policies, it found that, of the 223 countries of the world, 125 had government-sponsored family planning programs, and an additional 22 allowed the operation of private family-planning organizations. Of those with government-sponsored family planning programs, 40% considered their fertility rates too high and 9% considered their fertility rates too low. Of those that neither sponsored family planning programs nor allowed for the operation of private family-planning organizations, 13% considered their fertility rates too high and another 13% considered theirs too low. All of the governments that did not sponsor family planning programs but did allow for the operation of private family-planning organizations considered their fertility rates satisfactory.⁷⁹ These findings suggested that, while many governments sponsored family planning programs with the goal of reducing fertility rates considered to be excessive, others provided family planning as part of broader health programs or simply to facilitate the achievement of desired family size, without any population control intent.

As the Population Commission and its Committee of Experts drafted the World Population Plan of Action, three positions emerged. The first, described by its opponents as "hardline" was represented by the U.S. government: William Henry Draper Jr., who had been

⁷⁷See n. 72, 14-15.

⁷⁸Ibid., 16-17.

⁷⁹Most countries that considered their fertility rates excessive also considered their growth rates excessive, but there were some countries that considered their fertility rates excessive but did not consider their growth rates excessive; these countries sought to reduce both mortality and fertility. *ibid.*, 18.

appointed U.S. delegate to the U.N. Population Commission in 1969 by President Nixon, and Philander P. Claxton Jr., Special Assistant to the Secretary of State for Population Matters. The second, which I will call “voluntarist,” was represented by the Population Council and the U.S.-based demographers involved in drafting the Plan. Both positions were grounded in the economic overpopulation discourse and viewed population control as a stimulus to modernization. I call the third position “oppositional” in reference to its opposition to the economic overpopulation discourse. This position represented a diversity of objections to the economic overpopulation discourse and will be discussed in greater detail below.

Draper and Claxton’s hardline position called for replacement-level fertility by 1980 in “developed countries” and by 1990 in all countries, and described “the demographic transition from high birth rates to low birth rates” as “an essential part of the humane process of modernization.”⁸⁰ It demanded that all governments make all forms of birth control readily available to their citizens at minimal cost. Claxton also recommended that “the United Nations, national governments, private organizations, and the mass media cooperate in maintaining and expanding world dissemination of news and information on population matters and family planning, the effects of population growth upon the lives of men and nations, and methods of fertility control,” and recommended that “population subjects and family life and sex education be included in all educational and training programs for adults, including women’s educational activities, vocational education, functional literacy training, worker’s education, community development projects, and agricultural extension services,” effectively turning all of these programs into vehicles for small-family propaganda.⁸¹

Frank Notestein and Bernard Berelson feared that Claxton and Draper’s approach would generate massive opposition among several U.N. member states, particularly those that sought to augment their population growth rates, such as Brazil and Romania. Berelson informed Claxton that he had sensed that “a political ‘backlash’ has emerged in the past few years that needs to be taken seriously,” reflected in the work of Latin American social

⁸⁰Philander P. Claxton Jr., “World Population Plan of Action — Draft,” June 13, 1973, folder 5, box 17.

⁸¹Ibid., 15-16.

scientists and the Concerned Demographers. As a result of this backlash, Berelson cautioned that “further ‘pushing’ by the United States on population issues or perceived ‘pushing’ may be seriously counterproductive.”⁸² He anticipated that delegates to the 1974 conference — particularly those from Eastern Europe and Latin America — would express “skepticism about the effect of population growth on economic development — that is, about some of the fundamental issues that we have more or less taken for granted.”⁸³ What was particularly troubling to Berelson was that he expected this skepticism not “only from the ideologues on one side or another but from respectable and responsible people,” including Harvard demographer Simon Kuznets, who had recently called attention to the fact that the experience of the global south in the 15 years since the publication of Coale and Hoover’s report had not borne out its theoretical relationship between population growth and economic development. Kuznets and others also emphasized “the need to take account of the distribution of wealth and income, and of the inadequacy of definitions of development which stop at the per capita or average level,” thereby pointing out the limits of Coale and Hoover’s analysis.⁸⁴ Berelson saw it as his task in the time leading up to the conference to ensure that these “respectable and responsible people” were “reinformed and reconvinced” of the necessity of population control.⁸⁵ However, as the U.N. Population Commission’s literature review had demonstrated, more recent research would not be particularly convincing.

Instead of relying on this research, Berelson and Notestein sought to achieve a political consensus about the role of population control in development programs. This goal of consensus informed the voluntarist position they brought to the drafting meetings. Berelson expressed his hope that the conference would be an opportunity “to work out a greater convergence on population issues between the developed and the developing world on the

⁸²Bernard Berelson to Philander P. Claxton Jr., July 12, 1973, “World Population Plan of Action 1974,” box AD24, accession 2.

⁸³Thomas K. Burch to Bernard Berelson, Oct. 27, 1972, “World Population Year – Preliminary Documents,” box AD24, accession 2.

⁸⁴Ibid.

⁸⁵Bernard Berelson to W. Parker Mauldin and Thomas K. Burch, Oct. 24, 1972, “World Population Year – Preliminary Documents,” box AD24, accession 2.

one hand, and between the capitalist and the socialist worlds on the other – and, indeed, to converge all four positions into a single generally accepted one.”⁸⁶ Notestein saw the World Population Plan of Action as the first step in this endeavor, and recommended that the Population Commission “put forward a connected document that forestalls some argument [sic] by keeping things in perspective and proportion” by incorporating the “relevant truth” embedded in each of “the world’s major ideological houses.”⁸⁷

In contrast to those in the U.S. who advocated compulsion, Notestein argued that “peaceful social change seldom comes by a forced disregard of deeply-laid values,” and suggested that the Plan contextualize demographic action points within those values, rather than setting them in opposition.⁸⁸ He emphasized the importance of avoiding “giving gross offense to major sectors of the world,”⁸⁹ and recommended that the Plan “de-fuse opposition by stressing national and individual voluntarism.”⁹⁰ In contrast to recommendations by such figures as Paul Ehrlich and William Draper Jr. that “death control” — that is, public health efforts aimed at reducing mortality — be suspended until fertility rates declined, Notestein emphasized the importance of improved health, both for its own sake and for the sake of increasing productivity and “eroding the fatalism” that prevented the uptake of family planning services.⁹¹ He accepted Davis’s contention that many people worldwide continued to want more children than would produce a replacement level of fertility, but he also argued that, in every society, there are some people who want fewer children, and that empowering them to achieve this goal would not only help them, but would also lay the foundation for the emergence of a small-family norm.⁹² He argued that the relationship between values and behavior is not unidirectional: “values mediate human behavior” but “innovative be-

⁸⁶Berelson to Jr., July 12, 1973, see n. 82.

⁸⁷Frank W. Notestein to Riad Tabbarah and Octavio Cabello, July 1, 1972, folder 5, box 17, 2.

⁸⁸Ibid., 2-3.

⁸⁹Ibid., 11.

⁹⁰Ibid., 3.

⁹¹Frank W. Notestein to Riad Tabbarah and Octavio Cabello, July 1, 1972, “World Population Plan of Action 1974,” box AD24, accession 2, 4.

⁹²Notestein to Tabbarah and Cabello, July 1, 1972, see n. 87, 5.

havior changes values.”⁹³ He also advocated the provision of “public education directed to emphasizing the advantages to parents and children of the smaller family in helping them to meet the changing needs of the modern world,” indicating the persistence of his individual framework for understanding childbearing.

By 1972, possibly reflecting the influence of the Concerned Demographers, Notestein had returned to his earlier view that “programs of social-economic development... represent the most important complex of factors needed to set the stage for the solution of the world’s most difficult demographic problems.”⁹⁴ However, he also continued to recommend that demographic variables be acted upon directly through programs aimed at reducing both mortality and fertility rates, though he contended that family planning programs need not — in fact should not — divert resources from economic development.⁹⁵ He explained,

if the choice lay between a program of development on the one hand and a program to foster contraceptive practice and sterilization on the other, there can be little doubt that the former would foster the more rapid reduction of fertility. But that is not the choice. A national family planning program, even a reasonably adequate one, costs less than 2 per cent of any decent developmental budget... The proposal is not for family planning instead of development. It is development made more effective through a one or two per cent contribution to family planning.⁹⁶

With this statement, Notestein reincorporated his 1944 recommendations for development into the Population Council’s efforts to promote family planning as a mechanism of development.

The way Notestein dealt with countries whose governments sought to augment population demonstrates that, despite his compromise approach and the lip service he paid to voluntarism and national sovereignty, his ultimate goal and that of the Population Council was, in fact, population control. Some countries, particularly in Africa and Latin America, where population was still relatively sparse, aimed to increase population in order to provide

⁹³Notestein to Tabbarah and Cabello, July 1, 1972, see n. 87, 6.

⁹⁴Ibid., 3.

⁹⁵Ibid., 4.

⁹⁶Ibid., 5.

the labor necessary to exploit natural resources. In the drafting of the World Population Plan of Action, Notestein emphasized his conviction that “there are very few Less Developed Countries that would benefit economically from an increased rate of population growth *per se*.” He also recommended “demographic education” for these countries, that needed to “be made to understand the tremendous growth that lies ahead” as a result of expected mortality reductions.⁹⁷ With this statement, he dismissed pronatalism as ignorant and misguided and reasserted the economic overpopulation discourse. He acknowledged that population policies should be set by sovereign governments, but recommended that even countries that considered their populations too small implement family planning along with efforts to reduce mortality.

By the time of the World Population Conference, the U.N. Population Commission and its Committee of Experts had finalized a Draft World Population Plan of Action and a Background Report explaining the rationale behind the Draft Plan. Both documents were strongly influenced by Notestein and Berelson’s voluntarist approach to population control, but also contained elements of the hardline approach and evidence of opposition. Reflecting the economic overpopulation discourse, the Background Report stated that rapid population growth diverted investment from capital and continued to emphasize “a rapidly growing population in agriculture in relation to available land resources” as the major cause of unemployment, even though the Population Commission’s literature review had also indicated other factors.⁹⁸ As a concession to the opposition view, the proponents of which asked that the Draft Plan not represent population growth as “the cause of under-development,” the Background Report stated that “population growth is not necessarily an obstacle to development and lower population growth rates do not automatically bring about faster development.”⁹⁹

The Background Report emphasized economic development as the rationale for reducing

⁹⁷Notestein to Tabbarah and Cabello, July 1, 1972, see n. 87, 7.

⁹⁸See n. 73, 9-10.

⁹⁹“Extract from Report of the Seventeenth Session of the Population Commission,” 1973, folder 5, box 17.

population growth and stated that “population policies are constituent elements of socio-economic development policies, never substitutes for them.”¹⁰⁰ In other places, however, it reversed ends and means. The Report stated that “the reproductive goals of the family are formulated in the socio-economic context in which the family finds itself and cannot be effectively changed without changing that socio-economic context,” suggesting that social and economic changes were the means to fertility reduction.¹⁰¹ It even recommended specific forms of economic investment as promoting population control. For example, it stated that “although in certain cases it may be more economic to locate new industries in rural areas rather than move the population to the cities,” it recommended against this pattern of development, as moving people to cities was expected to have a stronger negative effect on fertility, but did not take into account the adequacy of urban infrastructure to serve the needs of new urban migrants. Similarly, the Report cautioned that “the increased economic activity of women may have very little effect on fertility if it occurs under circumstances that are readily combined with child rearing, such as in village cottage industries,” and instead recommended that women be integrated into the economy in ways that are incompatible with childbearing so as to reduce their fertility.¹⁰² Such suggestions indicate that reducing population growth was a goal in and of itself for some members of the Population Commission and its Committee of Experts, belying their statement that population policies were intended as a means of improving living conditions.

The Draft Plan continued to insist that reductions in fertility and population growth “tend to facilitate economic and social improvements,” and continually attributed numerous national and international issues — such as maternal mortality, unemployment, and international labor migration — to high fertility or population growth.¹⁰³ As a concession to the hardline faction, it still contained quantitative demographic targets, though ones that

¹⁰⁰“Draft World Population Plan of Action,” Aug. 19, 1974, “World Population Plan of Action 1974,” box AD24, accession 2, 7.

¹⁰¹See n. 71, 6.

¹⁰²See n. 73, 13.

¹⁰³“Background Document to the Draft World Population Plan of Action,” Feb. 7, 1974, “World Population Plan of Action 1974,” box AD24, accession 2, 6.

allowed for considerably more growth than did those originally proposed. The Draft Plan specified a population growth target for the year 1985 of 2.0% in “the less developed countries” and less than 1.7% for the world as a whole. It also included quantitative goals for mortality reduction, specifying that, by 1985, no country should “have an expectation of life at birth of less than 50 years or an infant mortality rate of more than 120 per thousand live births.” It also called for the elimination of morbidity and mortality differentials within countries.¹⁰⁴ Reflecting the voluntarist position, the Draft Plan avoided any language of compulsion, for example stating that “countries which have a very high birth-rate *may* consider taking action compatible with the principles and objectives of this Plan... to reduce these rates by about 5 to 10 per 1,000 before 1985.”¹⁰⁵ It also included suggestions for structural changes to the institution of childbearing reminiscent of those proposed earlier by Kingsley Davis. The Draft Plan recommended that efforts to reduce fertility be focused “at the extremes of female reproductive ages,” that member states establish a minimum age at marriage of no less than 17 years for women, and that “socio-economic measures be undertaken that would minimize the reasons for polygamous practices.”¹⁰⁶ Such suggestions sought to idealize marriage practices prevalent in the global north — monogamous unions among adults who planned their childbearing — and use population policy to spread those practices to the global south.

7.3.2 In Bucharest

Between the writing of the Draft Plan in January of 1974 and the opening of the World Population Conference in August, the economic overpopulation discourse suffered a considerable setback. In May 1974, the U.N. General Assembly adopted a Declaration on the Establishment of a New International Economic Order, which attributed the continuing gap in

¹⁰⁴“Report of the Secretary-General on the Draft World Population Plan of Action,” Jan. 23, 1974, “World Population Plan of Action 1974,” box AD24, accession 2, 10.

¹⁰⁵Ibid., 13, emphasis added.

¹⁰⁶Ibid., 13.

living standards between “developed” and “developing” countries not to population growth but to “the remaining vestiges of alien and colonial domination, foreign occupation, racial discrimination, apartheid and neo-colonialism in all its forms.” The Declaration stated that “it has proved impossible to achieve an even and balanced development of the international community under the existing international economic order,” which “is in direct conflict with current developments in international political and economic relations,” and called for “co-operation between all the members of the international community on the basis of sovereign equality and the removal of the disequilibrium that exists between them.”¹⁰⁷ The omission of population from the Declaration suggests a consensus among its writers that structural inequality in the global economy and continuing political and military domination of the global south by the global north were responsible for the apparent underdevelopment of the global south and for the increasing economic division between the industrial and agricultural parts of the world.

The preceding years had been a tumultuous time for the global economy. Global currency convertibility based on a gold-backed U.S. dollar, established at the Bretton Woods conference in 1944, had broken down in 1971 when the U.S. abandoned the gold standard. The 1973–1974 OPEC oil embargo had demonstrated just how much market power small countries could exercise through control of raw materials and the formation of cartels. It had demonstrated limits to the geopolitical power of countries in North America and Europe and also suggested that limits of natural resource supplies were looming. The Declaration of a New International Economic Order emphasized national sovereignty over natural resources and economic activities and aimed to limit the power of multinational firms, recognizing “the right to nationalization or transfer of ownership [of natural resources and economic activities] to its nationals.”¹⁰⁸ The Declaration also recognized the necessity of government intervention into markets to protect weaker partners in international trade, calling for a

¹⁰⁷United Nations, “A/RES/S-6/3201: Declaration on the Establishment of a New International Economic Order” (May 1, 1974).

¹⁰⁸Ibid.

just and equitable relationship between the prices of raw materials, primary commodities, manufactured and semi-manufactured goods exported by developing countries and the prices of raw materials, primary commodities, manufactures, capital goods and equipment imported by them with the aim of bringing about sustained improvement in their unsatisfactory terms of trade and the expansion of the world economy.¹⁰⁹

It emphasized “the need for all States to put an end to the waste of natural resources, including food products,” re-defining the withholding of food aid by surplus-generating countries as “waste.”¹¹⁰ With these points, the Declaration established a social, political, and economic explanation of global poverty and inequality that challenged the biological explanation offered by the economic overpopulation discourse.

Perhaps emboldened by this Declaration, when the World Population Conference began, delegates from several parts of the world and from U.N. specialized agencies rejected the focus of the conference on planning *of* population rather than planning *for* population. Whereas opposition to the economic overpopulation discourse had been contained during the drafting process, at the conference, it took center stage. As indicated above, opposition was not a unified stance. Attention to how members of the hardline and voluntarist factions described the opposition can reveal the multiplicity of positions it comprised. Philander Claxton described opposition to the Draft Plan as “a concerted, five pronged attack by Algeria, supported by a few African Countries; Argentina, supported by three or four Latin American countries; an Eastern European group of eight socialist countries; the People’s Republic of China, and the Holy See.”¹¹¹ The diversity of the opposition suggests the difficulty of mapping population thought either along the lines of First, Second, and Third Worlds, or according to a north/south or a developed/developing binary. Despite the diversity of opposition, opponents generally sought to eliminate the economic overpopulation discourse from the World Population Plan of Action, to emphasize economic development as a driver of fertility decline, and to de-emphasize the role of family planning programs in the development

¹⁰⁹United Nations, “A/RES/S-6/3201: Declaration on the Establishment of a New International Economic Order,” see n. 107.

¹¹⁰Ibid.

¹¹¹Philander Claxton Jr., “The World Population Conference: An Assessment,” n.d., folder 15, box 29, 2.

process.

Some of the opposition positions were clearly religious or ideological. The Holy See focused on the sanctity of human life, opposing the family planning response to the economic overpopulation discourse and proposing the use of more labor-intensive production processes to substitute for capital and employ larger populations.¹¹² The U.S.S.R. and its allies in Eastern Europe argued that the economic discourse of overpopulation applied only under capitalism. Echoing Marx and Engels's response to Malthus, described in Chapter One, representatives of these countries stated that "there is no such thing as a 'population problem' in the abstract; each mode of production (feudalism, capitalism, socialism) has its own laws of population."¹¹³ Delegates from China made no mention of population control initiatives recently enacted in their own country, and dismissed the idea of a "population explosion" as an "absurd theory concocted by the Super-Powers" in order to preserve their global hegemony.¹¹⁴ To the extent that the delegates from China did acknowledge the existence of a "population problem," they attributed it to "the aggression and plunder of the imperialists, colonialists, and neo-colonialists, and particularly the superpowers," asserting their country's opposition to both the U.S. and the U.S.S.R.¹¹⁵ The Chinese delegation supported population growth in Latin America and Africa, with the expectation that such growth would allow countries there to protect themselves against the aggression of the superpowers.¹¹⁶

The remaining countries expressing opposition viewpoints differed mainly over the valence of population growth, not over the cause of or solution to global poverty and inequality. The francophone countries of Africa, together with Albania, Argentina, Cuba, Peru, and Romania, argued that "so called population problems are actually problems of inequality of world wealth and resources resulting from the present world economic order and 'super-

¹¹²"Population Growth in the Plan of Action," Sept. 30, 1974, "Post-Bucharest," box AD24, accession 2, 3.

¹¹³W. Parker Mauldin, "Highlights of the Conference," n.d., "Bucharest," box AD30, accession 2, 3.

¹¹⁴Quoted in *ibid.*

¹¹⁵Quoted in Paul Demeny, "Bucharest, Mexico City, and Beyond," *Population and Development Review* 11, no. 1 (1985): 99-100.

¹¹⁶Mauldin, "Highlights of the Conference," see n. 113, 6.

consumption' in the developed countries."¹¹⁷ Rather than posing a threat to political stability or economic development, they contended that growing populations could readily be accommodated by "agricultural and industrial development under a proper social structure, and a redistribution of world wealth from the rich to the poor," as recommended in the Declaration on the Establishment of a New International Economic Order.¹¹⁸ Representatives of the Population Council described the African faction as having inserted into the Plan "the language of French Marxism to assert that the root cause of the difficulty [of poverty] lay in exploitation, maldistribution of income, and unfortunate institutional structures."¹¹⁹ Many of these delegates viewed rapid population growth as "a positive force for economic and social development, particularly because it provides sufficient labor for development and a youthful age structure for progressiveness."¹²⁰ Notably, Brazil did not join in this argument, despite its earlier contentions that its relatively small population limited its ability to fully exploit its natural resources.¹²¹

In contrast to the pro-growth group, Egypt, France, India, Italy, Mexico, Yugoslavia, and many of the remaining countries of Latin America and Africa conceded that population growth could hinder economic development under some circumstances, but attributed population growth to "poverty, poor health, high mortality, and lack of education."¹²² They argued that the most effective solution to these population problems was rapid economic development through the establishment of the new international economic order, including "a more equitable distribution of the world's resources" through direct transfers, development assistance, and revised terms of trade.¹²³ A delegate from Guatemala called for "an end. . . to wide publicity campaigns aimed at imposing one-sided and fanatic views on common people," arguing that "population policies should be a component of development policies, and

¹¹⁷Mauldin, "Highlights of the Conference," see n. 113, 4.

¹¹⁸Ibid., 4.

¹¹⁹See n. 112, 4.

¹²⁰Mauldin, "Highlights of the Conference," see n. 113, 4.

¹²¹Ibid., 6.

¹²²Ibid., 4.

¹²³Ibid., 4.

not a substitute thereof.”¹²⁴ The leader of India’s delegation famously asserted that “development is the best contraceptive,” pithily rephrasing Notestein and Davis’s 1944 assessment of the situation in the global south.¹²⁵

Opposition to the economic discourse of overpopulation and its family planning solution also came from the U.N.’s specialized agencies. The International Labour Organization continued to advocate for migration programs as a solution to problems of global poverty and uneven population growth. At Bucharest, its director-general called for “a cessation of generalized anti-natalist policy suggestions,” arguing that questions of population required “a more subtle, geographically selective and less panicky treatment.”¹²⁶ Henry R. Labouisse, executive director of UNICEF, argued that family planning services should form a part of comprehensive health care programs. He urged that national family planning programs “be placed within the context of a whole range of activities aimed at improving the health, nutrition, and well being of children already in the family as well as the health, the status and the educational level of women.”¹²⁷ In response to suggestions that “death control” measures were exacerbating “the population problem,” Labouisse cited the tenet of mid-century demographic transition theory that “when parents have a reasonable certainty that the children they want will survive as healthy individuals, they will be strongly motivated to limit the total number of their children.”¹²⁸

None of the meeting’s participants contested the fact that population was growing, nor did any challenge U.N. projections indicating that the world’s population would be more than 6 billion by the end of the century. However, while proponents of the hardline and voluntarist positions described these projections as “a matter of alarm,” proponents of opposition positions viewed the projections as neutral data.¹²⁹ Indeed, Ansley Coale described

¹²⁴“U.N. Press Release POP/119: Population Conference Hears Statements by 23 Governments, One Liberation Movement at Six-Hour Meeting,” Aug. 27, 1974, folder 8, box 10, series 971.

¹²⁵Demeny, “Bucharest, Mexico City, and Beyond,” see n. 115, 100.

¹²⁶“U.N. Press Release POP/120: Representatives of 12 United Nations Bodies and Other Organizations Address World Population Conference as Debate Nears End,” Aug. 27, 1974, folder 8, box 10, series 971.

¹²⁷See n. 62, 2.

¹²⁸Ibid., 2.

¹²⁹W. Parker Mauldin, “Outline of Report on the World Population Conference and Tribune, Bucharest,

the efforts of members of the opposition as being aimed at “diluting any reference to rapid population growth as a serious problem” in the revised Plan of Action. Similarly, while most delegates approved of family planning as an important component of health care programs and a tool to advance reproductive autonomy, proponents of opposition positions challenged the contention of the hardline and voluntarist positions that family planning was a critical engine of economic development.

Although the major tensions at the Conference were between the opposition on one side and hardline and voluntarist positions on the other, tensions between the hardline and voluntarist factions remained. Coale, a representative of the voluntarist faction, described the hardline position taken by the U.S. delegation as giving “ammunition to those who asserted that ‘family planning’ is being pushed as a substitute for social change.”¹³⁰ In effect, he and others affiliated with the Population Council worried that, by adopting the sense of alarm that had permeated the work of Moore and Draper’s Population Crisis Committee, the U.S. delegation — led by Draper and Claxton — was undermining the more measured stance of the Population Council and discrediting population control altogether.

In Bucharest, representatives of the opposition positions succeeded in revising the Draft Plan to better reflect their own concerns. The final version of the World Population Plan of Action, adopted by all 135 member states without a vote, emphasized planning *for* population rather than planning *of* population. In contrast to the Draft Plan, which listed its explicit aim as “to affect population variables,” the final Plan listed as its explicit aims “to help co-ordinate population trends and the trends of economic and social development.”¹³¹ It also aimed “to expand and deepen the capacities of countries to deal effectively with their national and subnational population problems and to promote an appropriate international response to their needs by increasing international activity in research, the exchange of in-

1974,” n.d., “Bucharest,” box AD30, accession 2.

¹³⁰Demeny, “Population Policy on the World Agenda – 1984,” see n. 67, 2.

¹³¹C. Chandrasekaran, “World Population Plan of Action,” Sept. 30, 1974, “Post-Bucharest,” box AD24, accession 2, 2.

formation, and the provision of assistance on request.”¹³² In effect, the Plan emphasized the need for countries with the capacity to do so to help countries with rapidly-growing populations plan *for* population growth rather than slow it down. The Plan emphasized this point in its call for “universal solidarity in order to improve the quality of life of the peoples of the world.”¹³³

The final Plan was based in interwar demographic transition theory and sounded quite similar to the recommendations made by Notestein and Davis in 1944–1945, stating that “the basis for an effective solution of population problems is, above all, socio-economic transformation.”¹³⁴ It called for “a more equitable distribution of wealth” on a global scale.¹³⁵ Delegates to the Conference rejected the longstanding claims of U.S.-based scientists, activists, and policy makers that poverty in the global south was a result of rapid population growth, inserting into the final Plan of Action the statement that “the present situation of the developing countries originates in the unequal process of socio-economic development which has divided peoples since the beginning of the modern era. This inequality still exists and is intensified by the lack of equity in international economic relations with the consequent disparity in levels of living.”¹³⁶ It continued that “efforts made by developing countries to speed up economic growth must be viewed by the entire international community as a global endeavour to improve the quality of life for all people of the world, supported by a just utilization of the world’s wealth, resources and technology in the spirit of the new international economic order.”¹³⁷ The final Plan made frequent mention of the new international economic order, and echoed its language in the statement that

true development cannot take place in the absence of national independence and liberation. Alien and colonial domination, foreign occupation, wars of aggression, racial discrimination, apartheid, neo-colonialism in all its forms, continue

¹³²Quoted in Jr., “The World Population Conference: An Assessment,” see n. 111, 5.

¹³³Quoted in *ibid.*, 5.

¹³⁴Quoted in *ibid.*, 2.

¹³⁵Mauldin, “Highlights of the Conference,” see n. 113, 1.

¹³⁶Quoted in *ibid.*, 1.

¹³⁷Quoted in Chandrasekaran, see n. 131, 3.

to be among the greatest obstacles to the full emancipation and progress of the developing countries and all the peoples involved.¹³⁸

The final Plan retained the Draft Plan's measures to provide technical assistance and training to demographers and statistical offices in countries that needed such assistance.¹³⁹ As for population as a variable, the Plan explicitly stated that "policies whose aim is to affect population trends must not be considered substitutes for socio-economic development policies but integrated with those policies to facilitate the solution of certain problems. . . and promote a more balanced and rational development."¹⁴⁰

Revisions to the Draft Plan removed all quantitative population growth targets and timelines for achieving them. In its final version, the Plan stated that "countries which consider their birth rates detrimental to their national purposes are invited to consider setting quantitative goals and implementing policies that may lead to the attainment of such goals by 1985."¹⁴¹ It immediately continued by stating that "nothing herein should interfere with the sovereignty of any government to adopt or not to adopt such quantitative goals,"¹⁴² and emphasized that "every state has the right to determine and promote demographic policies and measures which it considers most suitable without any outside interference."¹⁴³ Amendments that had been proposed at a May meeting of the Economic Commission for Asia and the Far East (ECAFE), calling for replacement fertility by 1985 in "developed countries" and by 2000 worldwide, were roundly rejected at the August conference. In its final version, the Plan stated that "family planning and related services should aim not only at prevention of unwanted pregnancies but also at elimination of involuntary sterility or subfecundity to enable couples to achieve their desired number of children."¹⁴⁴

The final Plan made a nod to the importance of preserving environmental integrity, but

¹³⁸Quoted in Chandrasekaran, see n. 131, 4.

¹³⁹Ibid., 7.

¹⁴⁰Quoted in Jr., "The World Population Conference: An Assessment," see n. 111, 3.

¹⁴¹"U.N. Press Release POP/126: World Population Conference, Meeting at Bucharest 19-30 August, Approves Plan of Action Stressing Need for Development," Sept. 3, 1974, folder 8, box 10, series 971.

¹⁴²Quoted in Jr., "The World Population Conference: An Assessment," see n. 111, 4.

¹⁴³Mauldin, "Highlights of the Conference," see n. 113, 1.

¹⁴⁴Quoted in Jr., "The World Population Conference: An Assessment," see n. 111, 8.

without suggesting population control as a solution. It stated that “the demand for vital resources increases with growing population and with growing *per capita* consumption,” but did not suggest that growth in either the population or the living standards of any countries be limited. Instead, it called for “attention... to the just distribution of resources and to the minimization of wasteful aspects of their use throughout the world,” a fairly direct allusion to the much higher per-capita levels of resource use in the global north than in the global south.¹⁴⁵

The only point on which all delegates to the World Population Conference agreed was the importance of improving the rights and status of women, which economists had begun to see as critical to economic development independent of its effect on fertility.¹⁴⁶ The revision of the Draft Plan expanded the section on women’s status and gender equality from one paragraph to six. In contrast to the Draft Plan, which recommended gender equality as a means of reducing fertility, the final Plan urged “full participation of women in the educational, social, economic, and political life of their countries on an equal basis with men,” as a prerequisite for economic development regardless of fertility, and promoted the availability of birth control and abortion as a route to equality, rather than equality as a route to the uptake of contraception and abortion, making equality rather than fertility decline the ultimate goal.¹⁴⁷ Delegates agreed that women and couples should have the right to “decide freely and responsibly the number and spacing of their children,” even as they contested the suggestion that family planning could be “an engine of change to speed the development process.”¹⁴⁸ The final Plan of Action emphasized women’s social, political, and economic rights, stating that “women have the right to complete integration in the development process particularly by means of an equal participation in educational, social, economic, cultural and

¹⁴⁵Quoted in Jr., “The World Population Conference: An Assessment,” see n. 111, 6, emphasis in the original.

¹⁴⁶Mauldin, “Highlights of the Conference,” see n. 113, 4; for a review of the economics literature on gender, see Nancy Folbre, “New Perspectives on Households and Economic Development,” *Journal of Development Economics* 22 (1986): 5–40.

¹⁴⁷Mauldin, “Highlights of the Conference,” see n. 113.

¹⁴⁸*Ibid.*, 4.

political life.” The Plan continued that “the necessary measures should be taken to facilitate this integration with family responsibilities which should be fully shared by both partners,” emphasizing that the work of bearing and raising children should not fall only to women, and that women’s responsibilities in these areas should not limit their participation in other areas.¹⁴⁹

The 1974 U.N. World Population Conference dealt a decisive blow to the economic over-population discourse and to population control as a legitimate form of international intervention by governments and non-governmental agencies. Demographers affiliated with the Population Council described the conference as having been “captured,” both procedurally and ideologically, by “the Third World.”¹⁵⁰ They conceded that the final Plan had some sound points, but complained that these points had “to be diligently extracted from even more fruity double talk cliches, special pleading, allocations of blame, flat misstatements of fact, and other assorted forms of nonsense.”¹⁵¹ Notestein was particularly offended by the revisions made to the Draft Plan, as he had worked so hard to soften the approach of the U.S. government by arguing that population control should be an element of development planning rather than a substitute for it. In a private note to Berelson, he complained that “if the B.S. as distributed in that conference could be used as fertilizer, the world would have no food problems.”¹⁵² Demeny described the focus on socioeconomic issues at Bucharest as “a conference on, say, railroad transportation where most speakers insist on discussing general disarmament.”¹⁵³ U.S. political scientists Jason Finkle and Barbara Crane described the conference as “an ideological confrontation over the structure of the international economic order, with population issues pushed into the background.”¹⁵⁴ These comments suggest that,

¹⁴⁹Quoted in Jr., “The World Population Conference: An Assessment,” see n. 111, 6.

¹⁵⁰Mauldin, “Outline of Report on the World Population Conference and Tribune, Bucharest, 1974,” see n. 129.

¹⁵¹“The Plan of Action,” Sept. 30, 1974, “Post-Bucharest,” box AD24, accession 2, 2.

¹⁵²Frank W. Notestein, “Uninhibited Notes on Bucharest – Not for Publication,” Sept. 12, 1974, folder 13, box 29.

¹⁵³Demeny, “Population Policy on the World Agenda – 1984,” see n. 67, 2.

¹⁵⁴Jason L. Finkle and Barbara B. Crane, “Ideology and Politics at Mexico City: The United States at the 1984 International Conference on Population,” *Population and Development Review* 11, no. 1 (1985): 1.

while proponents of the hardline position viewed the conference as one about population and proponents of the opposition position viewed the conference as one about economic development, proponents of the voluntarist position had attempted to discuss population in the language of economic development, and had been frustrated in this effort.

7.3.3 The Population Tribune: Rockefeller's Reversal

In Bucharest, the Population Tribune — the shadow conference for representatives of scientific and nongovernmental organizations — paralleled the debates of the official conference. As one of six “distinguished lecturers,” John D. Rockefeller III gave a much-anticipated speech, in which he announced that his understanding of population had changed over the 40 years since he had first told his father that birth control would be his major philanthropic focus.¹⁵⁵ He admitted that, despite the suggestion of interwar demographic transition theory that “industrialization had led to low birth rates,” when he established the Population Council in 1952, “family planning seemed simpler and more direct” a route to alleviating poverty in the global south.¹⁵⁶ But he had come to see that his approach was not working: “the absolute number of people in poverty has continued to grow” over the period of time that the Population Council had promoted family planning, suggesting that “the programs that have been undertaken have proved inadequate when compared to the magnitude of the problems facing us.”¹⁵⁷ He therefore called for “a deep and probing reappraisal of all that has been done in the population field... so that the years ahead may yield the results mankind so desperately wants.”¹⁵⁸

Rockefeller told his audience that he had come to recognize “that rapid population growth is only one among many problems facing most countries, that it is a multiplier and intensifier of other problems rather than the cause of them.” He did not suggest that family planning

¹⁵⁵John D. Rockefeller III to Carmen Miró, Feb. 22, 1974, folder 134, box 22, record group IV3B4.7.

¹⁵⁶John D. Rockefeller III, “Population Growth: The Role of the Developed World,” 1974, folder 134, box 22, record group IV3B4.7, 2.

¹⁵⁷*Ibid.*, 3.

¹⁵⁸*Ibid.*, 3.

should be abandoned, but urged governments “to place population policy solidly within the context of general economic and social development.”¹⁵⁹ He also contended that such a development plan “must be indigenous — created by the country and executed on the basis of its own initiative and wisdom.”¹⁶⁰ He acknowledged that there “should be much greater attention than in the past to more equitable distribution of the fruits of progress throughout all levels of society,” potentially including land reform.¹⁶¹ He argued that continued economic growth would be necessary to alleviate poverty, but critiqued the way in which “results are measured in numerical rather than human terms,” and suggested that “growth should be pursued not for its own sake, but to meet basic human needs for jobs, food, shelter, health, education.”¹⁶² Regarding the distribution and differential consumption of the Earth’s resources, Rockefeller acknowledged “a responsibility implicit in the good fortune of the industrialized and the resource-rich nations to assist in broadening the choices available to the poor nations,” without imposing the will and values of their own countries on other countries.¹⁶³

In contrast to Paul Ehrlich’s call to cut food aid to “overpopulated” countries, Rockefeller urged “the people of food-rich nations” to “substantially cut their own diets to help others,” and expressed the hope that the governments of food-exporting nations would “promote such sacrifices and waive trade considerations” if food supplies reached critically low levels in the global south.¹⁶⁴ Also in contrast to the rhetoric of Zero Population Growth, which called for limits on reproduction in order to sustain high levels of consumption, Rockefeller asked people in the countries of the global north to “moderate their levels of consumption.”¹⁶⁵ He concluded by calling for equal social, political, economic, and educational rights for women worldwide, just as his Commission on Population Growth and the American Future had rec-

¹⁵⁹III, “Population Growth: The Role of the Developed World,” see n. 156, 4.

¹⁶⁰Ibid., 5.

¹⁶¹Ibid., 5.

¹⁶²Ibid., 6.

¹⁶³Ibid., 7.

¹⁶⁴Ibid., 8.

¹⁶⁵Ibid., 8.

commended for the United States. Whereas the Population Council and other members of the population establishment had previously promoted family planning as a route to improving women's status, Rockefeller now echoed Kingsley Davis and Judith Blake in arguing that "provision of contraceptive information and services alone simply is not enough and will not be enough until women have alternatives to prolonged child-bearing and child-rearing."¹⁶⁶

The staff of the Population Council, particularly president Bernard Berelson and president emeritus Frank Notestein, were aghast at Rockefeller's Bucharest speech. Council trustee W. David Hopper of the World Bank received a frantic phone call from Bucharest, imploring him to stop Rockefeller from making such comments.¹⁶⁷ In a private note to Berelson, Notestein interpreted Rockefeller's speech to mean "he's given up on birth control," and went on to speculate that "the right-to-lifers and the priests and the communists are all greatly pleased" because "obviously he's joined their side." This reading was different than that of delegates from other countries, who described Rockefeller's speech as "a diversionary tactic," and "a sophisticated pushing of the capitalist line."¹⁶⁸ Indeed, the text of Rockefeller's speech did not sound much different from the official voluntarist position the Population Council and its affiliates took at both the official Conference and the Population Tribune. What Notestein recognized in Rockefeller's speech, however, was an admission that, although the Population Council paid frequent lip service to broader development goals, it had pursued population control as an end in itself. Notestein declared Rockefeller's speech to be "thoughtless and childish" and to have "undo[ne] much of the effort" of the Population Council.¹⁶⁹

Notestein's reading was correct: Rockefeller's speech did signal the culmination of a shift in his understanding of and approach to population that had begun with the final report of the PGAF Commission. In the early 1970s, Rockefeller had started to back away from many

¹⁶⁶III, "Population Growth: The Role of the Developed World," see n. 156, 9.

¹⁶⁷Joan Dunlop, "Population Council April Staff Meeting: Closing Comments of Mr. Hopper," Apr. 24, 1975, folder 491, box 72, sub-series 4, series 3, record group 5.

¹⁶⁸Bernard Berelson, "Memorandum to the File: World Population Conference, Bucharest – JDR's Speech," Sept. 4, 1974, "Bucharest," box AD30, accession 2.

¹⁶⁹Frank W. Notestein to Bernard Berelson, 1974, "Post-Bucharest," box AD24, accession 2.

of his charitable commitments, in part because he could not supply as much money as he had in the past, but also in part because he felt that his work was not having the results he had hoped. The Tax Reform Act of 1969 reduced the amount of money Rockefeller had available for charitable donations and, in response, he reduced his annual support for the Population Council from over \$400,000 to \$250,000.¹⁷⁰ Between 1970 and 1973, he resigned all of his organization chairmanships, including Lincoln Center, the Rockefeller Foundation, and the Population Council, explaining that “it will be in the best interests of those organizations for younger men and women to take over the leadership — people with fresh ideas and approaches who are prepared to give time and thought to the responsibilities and opportunities that lie ahead.”¹⁷¹ He nonetheless remained a member of the Population Council’s board of directors.

Recognizing that his approach to population — both in the U.S. and globally — was “not working,” and at the insistence of his wife and other associates that he needed more female perspectives, in 1972 Rockefeller hired Joan Dunlop, who was then working at the Fund for the City of New York, as his personal assistant for population matters. Dunlop had not attended college and had no previous experience with population, which Rockefeller viewed as an advantage. The first assignment he gave her was to “take a year and go around and go to meetings and listen to people and tell me what you think is wrong” with his approach to population.¹⁷² Rockefeller’s wife, Blanchette Ferry Hooker, instructed Dunlop, in Dunlop’s interactions with Rockefeller, to “consider [her]self to be his equal” and to “tell him the truth” about his population work.¹⁷³

¹⁷⁰It is unclear how much Rockefeller’s annual contribution to the Population Council was prior to 1970. After the Tax Reform Act he informed Berelson that he would “do my best – maybe a total of \$400,000” in terms of his annual contribution to the Population Council, suggesting that he had been contributing more previously. John D. Rockefeller III to Bernard Berelson, Feb. 21, 1973, folder 478, box 71, sub-series 4, series 3, record group 5, 2; Rockefeller’s 1973 contribution to the Population Council amounted to \$250,000. John D. Rockefeller III to Bernard Berelson, Oct. 23, 1972, folder 478, box 71, sub-series 4, series 3, record group 5, 3.

¹⁷¹III to Berelson, Oct. 23, 1972, see n. 170, 1.

¹⁷²“Joan Dunlop, Interview with Rebecca Sharpless for the Population and Reproductive Health Oral History Project,” Apr. 14, 2004, URL: <http://www.smith.edu/libraries/libs/ssc/prh/transcripts/dunlop-trans.pdf>, 5.

¹⁷³Ibid., 5.

Dunlop noticed that, while much of the Population Council's rhetoric and activity focused on women as the targets of family planning and population control, women "were being treated as objects and a means to an end," a "vehicle" for the technological solution of contraception, with their own lives, desires, and aspirations never considered. Dunlop routinely received anonymous notes from women who worked at the Council describing the ways in which they were discriminated against within the organization, and noticed the "palpable" level of racism in the field of population control.¹⁷⁴ Adrienne Germain, who eventually became assistant to Bud Harkavy, director of the Ford Foundation's Population Office, was told in her initial interview, "I really don't think that we can even consider you for this job because you're married." Despite the fact that Germain had a B.A. in sociology from Wellesley College and had done graduate work at Berkeley with Kingsley Davis and Judith Blake, her interviewer (not Harkavy) told her, "you'll just work with us for a year or two and then you'll go and have babies."¹⁷⁵ While such sexist practices were common throughout the professions and in academia, in this instance they belie the claims of the Population Council and the Ford Foundation's population programs that their activities were aimed at improving women's status and autonomy.

After being turned away from the Ford Foundation, Germain took a job as a research assistant at the Population Council, where she was one of only three women in professional positions (Dunlop worked for Rockefeller, not for the Population Council).¹⁷⁶ She found that her male colleagues, in their speech and writing, "never referred to women as real people." Instead, "they referred to contraceptive acceptors or users or postpartum cases."¹⁷⁷ Germain pointed out to Bernard Berelson that, although family planning programs focused on women as the agents of reproduction, by asking them to have fewer children than their partners wanted, and fewer children than may have been required for their own economic security, these programs were putting women at risk of both poverty and domestic violence,

¹⁷⁴See n. 172, 6.

¹⁷⁵Paraphrased by Germain, see n. 239, 18.

¹⁷⁶Ibid., 20-21.

¹⁷⁷Ibid., 21.

risks that the directors of these programs never acknowledged.¹⁷⁸

Germain found that “the so-called population money” was the only source of international funding available to assist women in the global south. These funds provided only contraception (and sometimes abortion), when what women really needed was access to education and employment to protect themselves — both economically and physically — when they did have fewer children than their partners wanted, as well as access to health care for themselves and their families.¹⁷⁹ She criticized the ways in which family planning services were delivered in the global south, with programs offering no other health services, not being integrated in any way into existing health care systems, and not dealing with any other aspect of women’s lives.¹⁸⁰ In 1972, Bud Harkavy of the Ford Foundation offered Germain the job as his assistant on the basis of a critique she had written of Berelson’s “Beyond Family Planning” article.¹⁸¹ By that time, Germain had gotten divorced and had returned to Berkeley to complete her M.A. in demography, so the Ford Foundation no longer had to worry that she would leave to have babies. Harkavy himself was a close friend and colleague of Berelson, but by that point had begun to consider the value of alternative perspectives. At the Ford Foundation, only one other woman was working on any of the Foundation’s international programs.

Germain and Dunlop met in 1973.¹⁸² After their first conversation, Dunlop reported to Rockefeller that the population control movement “was shot through with unintended sexism and racism,” and that good new ideas were not being funded because money was controlled by three men — Reimert Ravenholt at USAID, Bud Harkavy at the Ford Foundation, and Bob Bates at the Rockefeller Brothers Fund — and ideas were controlled by another three men — Bernard Berelson at the Population Council, Ronald Freedman at the University of Michigan’s Population Studies Center, and Ansley Coale at Princeton University’s Office

¹⁷⁸See n. 239, 24.

¹⁷⁹Ibid., 48.

¹⁸⁰Ibid., 53.

¹⁸¹Ibid., 25, 54.

¹⁸²Ibid., 45.

of Population Research — all of whom were resistant to new approaches.¹⁸³ Rockefeller saw his 1974 Bucharest speech as a chance to insert some new ideas into the population field, and assigned its writing to Dunlop, who recruited Germain to assist her.¹⁸⁴ When Berelson learned that Dunlop and Germain were writing Rockefeller’s Bucharest speech, he complained that “it would just set back the field who knows how many years.” Rockefeller responded that Dunlop’s and Germain’s ideas were the ones he wanted to present.¹⁸⁵

The 1974 U.N. World Population Conference and John D. Rockefeller III’s speech at the shadow Population Tribune were watershed moments in the history of global population thought and population policy. They signaled the refusal of governments in the global south to accept population control programs in lieu of a more equitable system of international trade, and the recognition of one of the most powerful and prominent U.S. philanthropists that population control programs had failed to meet their stated goal of stimulating economic development in the global south and promoting well-being worldwide.

7.4 From Bucharest to Mexico City

7.4.1 Recovering From Bucharest

Philander Claxton Jr. and William Henry Draper Jr. returned from Bucharest with a very different perception of the outcome of the conference and the future of population control than did Rockefeller. Claxton continued to view global population control as necessary to protect U.S. national and economic security, and was not disheartened by the changes rendered to the World Population Plan of Action at the Bucharest conference. He declared its adoption a “triumph for international cooperation under U.N. auspices.”¹⁸⁶ He felt that the final Plan “contains all the necessary provisions for effective family planning programs

¹⁸³See n. 172, 7-8.

¹⁸⁴See n. 239, 49.

¹⁸⁵Ibid., 50.

¹⁸⁶“Bucharest and the Future: Conference for Non-Governmental Organizations on the World Population Conference,” Oct. 10, 1974, folder 15, box 29.

and population growth control programs at national and international levels,” and “lacks only plain statements of quantitative goals with time frames for their accomplishment.” This lack did not worry him, as he was confident that such goals would be established either individually by member states or in future U.N. documents.¹⁸⁷ He acknowledged that “although the results were not ideal and there were disappointments, . . . the fact that the World Conference on this difficult and delicate subject was held at all was an outstanding achievement.”¹⁸⁸ His subsequent actions, however, suggest that he was, in fact, concerned about maintaining ongoing support for the U.S. government’s population activities abroad.

Draper, together with former Senator Joseph Tydings, on behalf of the Population Crisis Committee, wasted no time in writing to President Gerald Ford — who had been sworn in just before the Bucharest conference — and to all U.S. Senators and Representatives, to restore the credibility of the economic overpopulation discourse after the damage it had sustained in Bucharest. In these letters, Draper and Tydings rehashed the then-familiar narrative of increasing population growth, pointing to the rate of growth as evidence of impending overpopulation. With feigned incredulity, they informed Senators and Representatives that “it is almost unbelievable, but nevertheless true, that in the past 35 years the world population has doubled from *two* billion to *four* billion people.” To emphasize the import of these numbers, they described the growth in another way: “as many have been added in one long generation as in the previous long history of the human race!” Draper and Tydings connected this population growth to future global poverty and strife by warning that “if unhappily this should happen again and double to eight billion in another generation, the resulting starvation and poverty and probable world conflicts would make life hardly worth living even for our own grandchildren.”¹⁸⁹ Perhaps because such growth was beyond the bounds of U.N. population projections, they bolstered their argument with reference to the Malthusian relationship between population and food, stating that population growth in

¹⁸⁷Jr., “The World Population Conference: An Assessment,” see n. 111, 11.

¹⁸⁸*Ibid.*, 1.

¹⁸⁹William H. Draper Jr. and Joseph D. Tydings, “Letter to U.S. Senators and Representatives about population,” Nov. 29, 1974, folder 15, box 29.

the “food deficit countries of the global south” averaged 2.5% per year, “and adds 65,000,000 annually who have to be fed.”¹⁹⁰ Draper and Tydings urged the recipients of their letters to step up U.S. activities aimed at population control in the global south, calling for “active and increased American leadership” to implement the World Population Plan of Action, and warning that “increasing starvation, privation and poverty are inevitable” if the Plan were not implemented quickly.¹⁹¹ They informed Ford that “your personal intervention and your world leadership in dealing with these two problems [population and food] can make the difference between reasonable success and probable failure.”¹⁹² Such statements came from within the economic overpopulation discourse, and clearly aimed to preserve its credibility, despite its rejection by much of the world at the World Population Conference.

Claxton reconvened the Commission for Observance of World Population Year, which former President Nixon had created just before his resignation. The original purpose of the Commission had been to publicize World Population Year and the World Population Conference; Nixon had not intended it to continue meeting after the Conference. Members of the population establishment had been shocked that, of the 20 people Nixon appointed to the Commission, only one — Frank Notestein — had expertise in demography or family planning. Other members of the Commission included former Secretary of Agriculture and current Vice-Chairman of the Ralston-Purina Company Clifford Hardin; Mrs. Norman Armitage, president of the National Federation of Republican Women; Helene Drown, a close friend of Pat Nixon; Edward Cole, president of General Motors; Audubon Society president Elvis Stahr; CBS president Aruthur Taylor; and professional track star Leah Seneth O’Neal.¹⁹³ As an example of their work, one broadcast sponsored by the Commission that aired just before the beginning of the conference described the conference as “130 nations trying to find the right path towards lowering the fertility rate, particularly in the lesser developed

¹⁹⁰William H. Draper Jr. and Joseph D. Tydings to Gerald Ford, Nov. 29, 1974, folder 15, box 29.

¹⁹¹Ibid.

¹⁹²Ibid.

¹⁹³“Intercom: The International Newsletter on Population and Family Planning,” July 1, 1974, “Bucharest,” box AD30, accession 2; “White House Press Release,” July 11, 1974, folder 1, box 15.

countries where overbreeding is a way of life.”¹⁹⁴ It neither defined “overbreeding” nor linked it to economic development, instead calling on the familiar racialized trope of the inherent “backwardness” and hyper-sexualization of the world’s non-white denizens and on fears of being outnumbered by them. The broadcast urged its audience “to give this your serious thought; to recognize the vital importance of the World Population Conference about to take place.” It aimed to stimulate public support for U.S. intervention in global population dynamics, stating “for once, we ask you not to scream about what our own government spends — because the money that Uncle Sam puts into this program is an investment not only in world stability but in a livable future for your grandchildren, their grandchildren, and beyond.”¹⁹⁵

Following the conference, Claxton tasked the Commission to promote the World Population Plan of Action as a success and a mandate for further U.S. efforts to slow population growth in the global south. The Commission specifically attempted to counter reports in the popular press that the Bucharest conference had failed in its goal of setting worldwide population policies.¹⁹⁶ The Commission designated October 24 — United Nations Day — as “World Population Day.”¹⁹⁷ For 1975, it organized a series of conferences on food and population under the auspices of the American Assembly, and a series of conferences sponsored by land-grant universities.¹⁹⁸ The Commission also worked with the National Science Foundation and the Smithsonian Institution Traveling Exhibit Services to stage four exhibitions on population and related matters during 1975.¹⁹⁹ The Commission’s publicity work focused on April 1975, which it asked President Ford to designate as “World Population Month.”²⁰⁰ The Commission recommended to the U.S. Postal Service that it issue a special stamp for

¹⁹⁴“Jefferson Pilot Broadcasting: World Population,” Aug. 15, 1974, folder 15, box 29.

¹⁹⁵Ibid.

¹⁹⁶See n. 246, 5.

¹⁹⁷LaRue R. Lutkins to Frank W. Notestein, Aug. 22, 1974, folder 15, box 29.

¹⁹⁸“National Commission for the Observance of World Population Year: Fourth Meeting,” Nov. 13, 1974, folder 15, box 29, 2-3.

¹⁹⁹Ibid., 3-4.

²⁰⁰Helene Drown to Charles H. Crutchfield, Jan. 27, 1975, folder 16, box 29.

1975 with the theme of “Population Control” or “Food and Population.”²⁰¹

In November of 1974, the Commission wrote to Caspar Weinberger, then Secretary of the Department of Health, Education and Welfare, urging him to “use the authority of his office to encourage the principal population, education, and research officials of the Department... to initiate a broad program of support for population education” at all levels.²⁰² As part of the ongoing efforts to promote “population education,” members of the Commission prepared a pamphlet titled “Facts and Fictions about the Population Problem,” which listed 11 “population fictions” and explained why each was untrue. This idea was proposed by Claxton, who recognized that “while there is little difficulty identifying basic demographic information, considerable disagreement exists as to the implications of the facts and what should be done about them.”²⁰³ The fictions included the idea that larger populations have greater productivity; that countries with vacant land needed to increase their populations; that economic development, industrialization, and increased living standards would automatically reduce fertility; that people in “developing countries” needed children for old age security; that family planning is too expensive and not rapid enough a solution to “the population problem;” that family planning programs have failed; that a birthrate of two children per couple will immediately end population growth; and that the World Population Conference had failed to produce international consensus on the need for a slowing of population growth. The pamphlet countered these “fictions” by pointing to population momentum and dependency ratios, and by arguing that “the experience of Europe and the U.S. in the last century is a bad guide for the developing world in the last quarter of this century,” because population was growing in the global south much more rapidly than it ever had in the global north and because “Europe had a superior industrial base and a kinder geography and climate to start with than does the developing world today.”²⁰⁴

²⁰¹ “National Commission for the Observance of World Population Year, Third Meeting,” Oct. 15, 1974, folder 15, box 29, 5.

²⁰² Clifford M. Hardin to Caspar Weinberger, Nov. 15, 1974, folder 15, box 29.

²⁰³ See n. 201, 3.

²⁰⁴ “Facts and Fictions about the Population Problem,” 1974, folder 15, box 29, 2.

Frank Notestein, who did not contribute to the drafting of the pamphlet, critiqued its demographic inaccuracies. In reference to a statement comparing age structure in populations with high fertility to age structure in populations with low fertility, Notestein commented that “there is no repairing the present statement. It must be redrafted from the beginning if the Commission is not to become a laughing stock for the knowledgeable [sic].”²⁰⁵ In response to the pamphlet’s statement that “the Conference aroused world consciousness and greatly raised its level to population problems as a major determinant of both the crisis and the solution of the human condition,” Notestein stated “alas, I fear it did not.” He continued that “there is considerable evidence that the Arabian and African worlds are tending to put the issue on the back burner.”²⁰⁶ He warned his fellow members of the Commission for Observance of World Population Year that “we will not help our image abroad or our reputation for candor by putting forward a view that other participants do not recognize as real.”²⁰⁷ Commission member Helene Drown also expressed her concern that “it would be tragic if we were accused of brainwashing instead of informing, of bias instead of fairness, of coercion instead of encouragement, of selling propaganda instead of prompting awareness, and of dictating and alarming instead of providing inspiration and hope.”²⁰⁸ The activities of the Commission suggest frantic last-ditch efforts by Claxton and Draper to shore up the economic overpopulation discourse.

7.4.2 The Passing of the Population Generation

During the 1970s and early 1980s, many of the men who had played prominent roles in the population establishment left the scene, and the key organizations funding demography and global population intervention changed their approach. Hugh Moore died in 1972 and

²⁰⁵Frank W. Notestein, “Comments on ‘Facts and Fictions about the Population Problem’,” 1974, folder 15, box 29.

²⁰⁶Ibid.

²⁰⁷Ibid.

²⁰⁸Drown to Crutchfield, Jan. 27, 1975, see n. 200.

General William Henry Draper Jr. died at the end of 1974.²⁰⁹ Bernard Berelson had, in 1973, asked to retire from his position as Population Council president. Rockefeller finally granted this request after he returned from Bucharest, replacing Berelson on an interim basis with family planning expert W. Parker Mauldin and organizing a sub-committee of the Board of Trustees, led by W. David Hopper of the World Bank, to review the Council's status and recommend a course for the future.²¹⁰ Berelson remained on the Council's board.

Hopper was an agricultural economist dedicated to planning *for* population rather than population engineering. Although he strongly supported family planning programs, he recognized that they played only a small role in improving the living standards of the world's people. As part of his dissertation research, he had moved to India with his wife, purchased six acres of land, and "tried to cultivate it along the directions of the agricultural economists in the West," which resulted in "a miserable failure." When he returned to the University of Chicago to defend his dissertation he "just squeaked through" because "much of his thesis ran directly contrary to accepted academic wisdom in the field."²¹¹

Hopper's review of the Population Council's activities and his recommendations for the future generated discussion about the fact that, from its establishment, the Population Council had used the word "population" as a shorthand for population control through the provision of birth control. He demonstrated that, although the Council had originally described itself as "a group devoting itself to the scientific study of population in its many interrelationships" as "a help to all others engaged in furthering the well-being of man," its activities had focused very narrowly on fertility reduction.²¹² He stated that, for the Population Council, "the population 'problem' was fundamentally a question of controlling human fertility," such that "'population' activities became synonymous in the public mind with family plan-

²⁰⁹James W. Riddleberger and J. George Harrar, "Letter to Friends of the Population Crisis Committee," Jan. 7, 1975, folder 452, box 68, sub-series 4, series 3, record group 5.

²¹⁰John D. Rockefeller III, "Sample Population Council Letter," Oct. 10, 1974, folder 491, box 72, sub-series 4, series 3, record group 5.

²¹¹Joan M. Dunlop, "Population Council Search Committee's Meeting with David Hopper on January 26," Jan. 30, 1974, folder 491, box 72, sub-series 4, series 3, record group 5.

²¹²W. David Hopper, "The Population Council: A Review," May 9, 1975, folder 491, box 72, sub-series 4, series 3, record group 5.

ning, birth prevention or birth control. ‘Population’ programs became fertility reduction activities, and the ‘population’ policies of nations were considered coincident with efforts to permanently equate national birth and death rates by the development of family planning delivery and motivation programs.” As a result, the Council had come to be viewed, both by observers and by staff, as “essentially a family planning agency.”²¹³ Hopper attributed recent declines in the Population Council’s funding to the global perception of it as a U.S. organization working toward U.S. interests, and suggested that “its attractiveness to potential grantors would be enhanced if the international, especially developing country membership of the Council’s governing Board and staff were expanded.”²¹⁴ At that point, around 90% of the Council’s funding came from John D. Rockefeller III, the Rockefeller Foundation, the Rockefeller Brothers Fund, the Ford Foundation, the Scaife/May (Mellon) family, USAID, and UNFPA.²¹⁵

Hopper recommended that the organization return to what he viewed as its original mission, particularly if it was to gain international support and legitimacy. This proposal was met with approbation by the Population Council’s staff, who argued that Hopper had misinterpreted the Council’s original mission: according to Council staff, the organization had always been a family planning agency, but had to use the language of “population” to avoid opposition from various antagonists of family planning, particularly in the 1950s. They argued that, “at the time the Council was created birth control and family planning were simply not talked about.” For that reason, they contended, “the whole question was a *sub rosa* one and the early reports of the Population Council don’t mention it,” but “underneath concern with the birth rate was absolutely basic.”²¹⁶ Archival materials from the Council’s founding, discussed in Chapter Four, certainly support this view.

Following Hopper’s report, the board of directors appointed a new president, George Zeidenstein, who had been nominated by Dunlop. Notestein and Berelson strongly opposed

²¹³Hopper, see n. 212.

²¹⁴Ibid.

²¹⁵Hopper, see n. 212; Warwick, see n. 154, 58.

²¹⁶See n. 27.

this choice, most likely because Zeidenstein lacked training or expertise in demography or family planning. Notestein and Berelson both resigned from the Council's Board of Trustees following Zeidenstein's appointment.²¹⁷ Zeidenstein, born in 1929, was a graduate of Harvard Law School. After ten years as a corporate and securities lawyer on Wall Street, he had resigned from his job to work with voter registration drives for African Americans in Mississippi and Arkansas in the early 1960s. He later worked in Nepal as Country Director for the Peace Corps, and in Bangladesh as a representative of the Ford Foundation.²¹⁸ In Bangladesh, he met Adrienne Germain, who by then had focused her career on development programs centered on women's rights and women's economic activities in South Asia. After Berelson's resignation as president of the Population Council, Germain recommended Zeidenstein to Dunlop, who nominated him to the Board of Trustees.²¹⁹

In 1976, after consulting with Population Council staff (both in New York and overseas) and trustees, Zeidenstein wrote a document outlining the future course of the Council. He began with the premise that "concern with human welfare must underlie all of the Council's programmatic efforts."²²⁰ He continued by acknowledging that many countries had high fertility rates, but argued that it "is a problem mainly in relation to the disposition and consumption of resources, inequities in the distribution of capital, income and social and economic opportunities, and inadequate realization of the full potentials of women and men."²²¹ For that reason, he urged that "to our long-standing emphasis on population growth, we must add related concerns with economic, social, and cultural factors such as

²¹⁷I have been unable to discover the objections of Notestein and Berelson to Zeidenstein's appointment, but Notestein wrote to Rockefeller, "I am so completely out of sympathy with the decision at our last meeting that my continuation (on the board) would only embarrass you, our other colleagues, and myself." Frank W. Notestein to John D. Rockefeller III, Oct. 27, 1975, folder 15, box 13; Rockefeller responded that "for me to be a party to something which appears so counter to your thinking and judgment makes me very sad," but explained that "each of us in the last analysis has to do what we believe is right and sound which accounts for Joan Dunlop's and my recommendation to the Trustees, and now your resignation." John D. Rockefeller III to Frank W. Notestein, Oct. 31, 1975, folder 15, box 13; Berelson tendered his resignation a few months later. John D. Rockefeller III to Bernard Berelson, Apr. 8, 1976, folder 15, box 13.

²¹⁸Caitlin Gullickson, "Guide to George Zeidenstein Papers (FA263)," Nov. 11, 2010.

²¹⁹See n. 239, 65-66.

²²⁰George Zeidenstein, "Future Directions of the Population Council," June 9, 1976, folder 477, box 71, sub-series 4, series 3, record group 5, 3.

²²¹Ibid., 4.

resources, income and capital, consumption, productivity, the roles and status of women, health, education, housing, employment, social security, and institutional structures; and we should pay greater attention to issues related to migration, urbanization, and mortality.”²²² Zeidenstein’s document stated that the Council’s policy decisions would no longer be made centrally by U.S.-oriented experts, but would, in the future, take into account “the views of people from countries in which the Council works.”²²³ He stated the goal of “recruiting a larger proportion of our trustees from nations other than the United States” and making Council staff, both in New York and overseas, more internationally representative.²²⁴

Zeidenstein restructured the Council, keeping its technical assistance division but turning its biomedical division into a Biomedical Research Center and turning its demographic division into a Center for Policy Research, under the direction of former demographic director Paul Demeny.²²⁵ In contrast to the demographic division’s previous research on reducing fertility, Zeidenstein proposed that the Center for Policy Research “should investigate important interrelationships between existing and anticipated development processes, policies, and programs and demographic behavior.”²²⁶ The Center was to be staffed by “an interdisciplinary group of researchers, drawn primarily from the social sciences,” including “economics, sociology, political science, public administration, demography, systems analysis, operations research, anthropology, and social psychology.”²²⁷ This list signals the Council’s shift from a narrow focus on fertility to a broader focus on socioeconomic development. Zeidenstein indicated his hope that the Center would “be able to develop and maintain strong interaction with the Council’s international programs, and hence be in close touch with perceived needs of policymakers,” and “establish cooperative ties with research centers in the developing world.”²²⁸ He also emphasized that the Center’s research activities would include a variety

²²²Zeidenstein, see n. 220, 4.

²²³Ibid., 13.

²²⁴Ibid., 13.

²²⁵Ibid., 5.

²²⁶Ibid., 7.

²²⁷Ibid., A-3.

²²⁸Ibid., A-3.

of scales of analysis, not only the “micro-analyses focused on the household level that have been attracting an increasing amount of research input recently,” exemplified by the fertility research of the 1950s and 1960s.²²⁹ Zeidenstein recognized the importance of families and of social institutions between the level of the family and the country in fertility and other population dynamics. The Journal *Population and Development Review*, which the Population Council had launched in 1975 “to advance knowledge of the interrelationships between population processes and socioeconomic development and to provide a forum for discussion of related issues of public policy,” would fall under the editorship of the Council’s Center for Policy Research, with the directive “to pay particular attention to the needs of policymakers in developing countries.”²³⁰

According to Zeidenstein’s plan for the Council’s future, the Center for Biomedical Research would focus on four areas. The first was the development of methods of “fertility regulation” (including contraception, sterilization, and abortion) that are “more effective and accessible, and that require less costly and sophisticated delivery systems,” such as the ones promoted by Reimert Ravenholt of USAID and described in Chapter Six.²³¹ In particular, Zeidenstein sought new forms of long-term contraception — including implants and vaginal rings, both of which would be developed under Population Council auspices in the next few decades — and non-surgical methods of abortion and sterilization. The second focus was application of the existing basic knowledge of reproduction. The third was research on the safety and health effects of currently-available methods of contraception. Previous research had focused on the efficacy of these methods, but with this new research area, the Population Council would investigate the long-term safety of systemic contraception methods, as well as geographically-specific issues in the areas the Council’s programs served.²³² The fourth area would be the internationalization of the field of reproductive biomedicine, attracting to the field scientists who could develop family planning interventions sensitive to

²²⁹Kirk, “Proposals for Board of Trustees Meeting of May 13, 1959,” see n. 116, A-7.

²³⁰Zeidenstein, see n. 220, A-11.

²³¹Ibid., B-2.

²³²Ibid., B-4.

the needs of their own societies. Through this initiative, Zeidenstein also hoped to increase the proportion of women in reproductive biomedicine. In addition to providing fellowships for training, the Population Council would train scientists in its own laboratories, which Zeidenstein hoped would “help to internationalize our method-development effort, even at the laboratory stage.”²³³ These new research foci demonstrate Zeidenstein’s concern with meeting the health and family planning needs of the Council’s constituents worldwide, in contrast to the Council’s earlier overriding concern with reducing fertility.

Rockefeller strongly approved of Zeidenstein’s plans for the Council’s future. In his annual report to the Board of Trustees for 1977, Rockefeller stated that his views on population had “matured” with his recognition just before Bucharest that “the fundamental purpose of population programs is human welfare, not fertility decline,” and that “any significant lowering of birth rates cannot be achieved by technology or propaganda or force.”²³⁴ In general, Zeidenstein aimed to make Population Council staff and leadership less male, less white, and less American. As part of this initiative, he restructured the organization to offer a “career ladder” for secretaries, typists, and clerks to move into paraprofessional positions, including grant administration, logistic support for field staff, and budget work.²³⁵

Similar changes began to occur at the Ford Foundation beginning in 1979, when McGeorge Bundy retired as president. Bundy was replaced by Frank Thomas, who had been raised in poverty in New York City by a single mother from Jamaica. One of Thomas’s first acts as president was to state that the programs of the Ford Foundation would be re-oriented around the core value of nondiscrimination — specifically citing gender and race — and to invite anyone who did not share this value to leave the Foundation.²³⁶ In the early 1980s, Thomas appointed Germain head of the Ford Foundation’s Bangladesh office, where she attempted to turn the population program into a reproductive health program

²³³Zeidenstein, see n. 220, B-6.

²³⁴John D. Rockefeller III, “Introduction to Annual Report of the Population Council — Final Draft,” Apr. 4, 1977, folder 493, box 73, sub-series 4, series 3, record group 5.

²³⁵Zeidenstein, see n. 220, C-5.

²³⁶See n. 239, 67-68.

that included maternal and child health along with contraception and menstrual regulation (abortion was illegal in Bangladesh).²³⁷ In the first years of her work in Bangladesh, she raised the ire of the U.S. government by making grants to USAID programs to add health care services to their family planning offices, as these were the services being requested by their clients and were unavailable elsewhere.²³⁸ Germain also shifted the focus of the Ford Foundation's agriculture programs from cash crops grown by men for the global market to food crops grown by women for local consumption, and promoted the diversification of the rural economy.²³⁹ Together with Zeidenstein, Germain helped Muhammad Yunus secure the funding to establish the Grameen Bank, one of the first microlenders.²⁴⁰

John D. Rockefeller III died in a car accident in 1978, and Bernard Berelson passed away in 1979. In 1980, Reimert Ravenholt resigned from USAID as a result of considerable opposition by anti-abortion groups.²⁴¹ Frank Notestein died in early 1983.²⁴² These deaths and retirements, and the institutional changes they precipitated at the Population Council and the Ford Foundation helped to bring the activities of the U.S.-based population establishment into line with the needs of the countries in which they operated, as expressed at the 1974 World Population Conference. In contrast to the U.S. Department of State, where Philander Claxton dug in his heels and refused to acknowledge his defeat at Bucharest, the Population Council and the Ford Foundation responded by changing their population-oriented programs to better suit the needs of their clients. Yet, ironically, just at the moment when the population establishment was beginning to recognize the global complexities surrounding population issues, they faced a new threat: conservative backlash against *any* attempts to intervene in reproductive issues, whether intended to stimulate economic development or to increase reproductive health and autonomy.

²³⁷See n. 239, 73.

²³⁸Ibid., 75-76.

²³⁹Ibid., 76-77.

²⁴⁰Yunus and the Grameen Bank were awarded the Nobel Peace Prize in 2006. *ibid.*, 77.

²⁴¹Warwick, see n. 154, 51.

²⁴²"Princeton University Press Release," Feb. 21, 1983, folder 3, box 13.

7.4.3 Mexico City

In 1984, the U.N. again held its decadal World Population Conference, this time with the goal of assessing progress on the World Population Plan of Action adopted in Bucharest in 1974. Recommendations drafted beforehand included increasing funding to UNFPA and encouraging member states to consider population policies in their development programs. The U.S. government participated actively in drafting these recommendations. However, at the conference itself, the U.S. delegation took a stance completely at odds with the previous twenty years of foreign and domestic policy related to population and family planning, stating that “population growth is, of itself, a neutral phenomenon” and that “the relationship between population growth and economic development is not necessarily a negative one.” Rather, growing population was a danger only in the context of “governmental control of economies” or “economic statism.”²⁴³ The U.S. delegation recommended that “those developing countries experiencing population pressures should reduce government interference in their economies in order to promote economic growth and thereby reduce fertility” because “population control programs alone cannot substitute for the economic reforms that put a society on the road toward growth.”²⁴⁴ The delegation concluded that there was “no *global* population crisis that require[d] drastic forms of intervention by governments.”²⁴⁵

On the surface, this new U.S. stance seemed to be in line with the interwar demographic transition theory championed by leaders from Asia, Africa, and Latin America in 1974, as it contended that development was, in fact, the most effective contraceptive — as the Indian delegation had contended at the previous conference. However, the “economic reforms that put a society on the road toward growth” recommended by the U.S. delegation in 1984 were those associated with neoliberal market fundamentalism rather than the reforms associated with the new international economic order that had held so much promise a decade earlier.

Neoliberalism — which David Harvey defines as “a theory of political economic practices

²⁴³Finkle and Crane, see n. 154, 2, 11.

²⁴⁴Ibid., 1, 11.

²⁴⁵Ibid., 11, emphasis in the original.

that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade²⁴⁶ — was not the only right-wing U.S. ideology on display in Mexico City. The U.S. delegation also announced that U.S. funds could no longer be supplied to organizations that performed or counseled abortion.²⁴⁷ Led by James L. Buckley (brother of *National Review* founder William F. Buckley Jr.), an undersecretary of state in the Reagan Administration with strong pro-life credentials, the U.S. delegation stated that “the United States does not consider abortion an acceptable element of family planning programs.” This statement precipitated a new alignment with the Vatican, whose delegation proceeded to propose that abortion be excluded from the forms of family planning recognized by the U.N., though it had originated in the rise of evangelical Christianity in the U.S. rather than the political power of Catholicism.²⁴⁸ As a corollary of this policy, USAID ceased funding the International Planned Parenthood Federation (IPPF). USAID had previously been one of IPPF’s largest donors, but IPPF had become a target of the growing political opposition to abortion rights in the U.S. The Pathfinder Fund discontinued its abortion-related activities in order to maintain support from USAID.²⁴⁹ The policy also threatened U.S. support for UNFPA, requiring that UNFPA eschew support for abortion in order to continue receiving funds from the U.S., its largest donor. U.S. funds had already been restricted from the direct support of abortion by the 1973 Helms Amendment to the 1961 Foreign Assistance Act, but the new policy was much more restrictive. The timing of the conference only months before the U.S. presidential election, at which Reagan would be up for re-election, certainly contributed to this stance.

The U.S. position at the 1984 conference was a sharp reversal of its position at the 1974 conference, where the U.S. delegation had pushed hardest for the adoption of quantitative demographic targets and deadlines for meeting those targets. Prior to 1984, the U.S. govern-

²⁴⁶David Harvey, *A Brief History of Neoliberalism* (New York: Oxford University Press, 2005), 2.

²⁴⁷Finkle and Crane, see n. 154, 1.

²⁴⁸*Ibid.*, 13.

²⁴⁹*Ibid.*, 18.

ment had been the strongest proponent of population limitation worldwide, and the largest source of funds for population research and control. USAID had population offices in more than 40 countries and provided funds to family planning programs in more than 90 countries. Multilateral efforts of the UN, the World Bank, and the International Planned Parenthood Federation were all spearheaded by U.S.-based leaders.²⁵⁰

Between 1974 and 1984, the geopolitical situation had again shifted. Attempts by countries in Asia, Africa, and Latin America to establish commodity cartels on the OPEC model had failed, and the growing economic differences between countries in the global south had begun to undermine political-economic solidarity among them. Their indebtedness to the countries of the global north — mainly the U.S. — forced them to acquiesce with the structural adjustment mandates of the International Monetary Fund, which required privatization, deregulation, free trade, and the dismantling of social welfare programs.²⁵¹ Following their assertion in the 1974 World Population Plan of Action that population programs must be designed in the context of development planning, heads of state in the global south had begun to welcome family planning assistance — both monetary and technical — from the UNFPA, non-governmental agencies, and bilateral agreements with countries in the global north. Having adopted its one-child policy in 1979, China sent a 27-member delegation to Mexico City in 1984 to promote family planning and population control policies worldwide, also representing a sharp reversal from its 1974 position that “population is not a problem under socialism.”²⁵²

In its preparations for the conference, the U.N. Population Division attempted to minimize opportunities for political debate by specifying that discussions at the conference were to remain “within the framework of the existing WPPA [World Population Plan of Action], the principles and objectives of which continue to be fully valid.”²⁵³ The organizers decided not to hold a shadow conference for nongovernmental organizations, as had been done in

²⁵⁰Finkle and Crane, see n. 154, 9.

²⁵¹Ibid., 3.

²⁵²Finkle and Crane, see n. 154, 5; Demeny, “Bucharest, Mexico City, and Beyond,” see n. 115, 99.

²⁵³Quoted in Finkle and Crane, see n. 154, 5.

Bucharest, to avoid disruption and additional politicization of the conference. Mexico City was selected as the venue because Mexico had joined the population control bandwagon after 1974. The U.N. Population Commission viewed it as “an example for other countries that may be at earlier stages of population policy development,” and hoped that Mexico would “provide diplomatic leadership for the developing countries and promote a smooth conference.”²⁵⁴ However, the conference’s proximity to the U.S. facilitated attendance by American journalists and lobbyists, turning it into a venue for U.S. electoral politics.

The strongest opposition to the U.S. position came not from the delegations from other countries, but from the U.S.-based demographers and population activists present at the Conference. Finkle and Crane speculate that delegates from other countries were not terribly worried about the U.S. position because they recognized its motivation in the upcoming U.S. election, and assumed it would be undermined by intense opposition within the U.S.²⁵⁵ As a strong signal of this opposition, six members of Congress flew to Mexico City to hold a press conference “to air their dissatisfaction and to decry the lack of consultation between the Executive Branch and Congress in formulating the position.”²⁵⁶ Following the Mexico City conference, Congress approved a \$50 million increase to the USAID population budget for fiscal year 1985, bringing it to \$290 million.²⁵⁷

Although observers within the U.S. and worldwide were dismayed by the position taken by the U.S. delegation at Mexico City, they were not surprised, as the Reagan Administration had unofficially circulated a statement of the position prior to the conference. This statement was heavily influenced by the work of University of Illinois economist Julian Simon, who was an advisor to the Reagan Administration. Over the previous decade, Simon — introduced in Chapter Six — had become the most vocal neoliberal critic of both economic and environmental overpopulation discourses, championing the free market as the mechanism that

²⁵⁴Finkle and Crane, see n. 154, 7.

²⁵⁵Between June and September 1985, 245 editorials opposed the official U.S. position. 37 supported it and 20 were mixed. *ibid.*, 15 and note 59.

²⁵⁶*Ibid.*, 15.

²⁵⁷*Ibid.*, 20.

could most effectively balance populations, economies, and natural resources. In 1980, Simon challenged Paul Ehrlich to what is now one of the most well-known scientific bets.²⁵⁸ Arguing that if resources were becoming increasingly scarce as a result of population growth — as Ehrlich and other proponents of the environmental overpopulation discourse argued — scarcity would be reflected in rising prices for those resources. Following this logic, he proposed a bet to Ehrlich: Ehrlich could choose a portfolio of \$200 worth of any five metals, totaling \$1,000. If the inflation-adjusted prices of the metals increased over the next ten years, Simon would pay the difference; if the prices fell, Ehrlich would pay the difference. Ehrlich, together with his colleagues John Holdren and John Harte, selected chromium, copper, nickel, tin, and tungsten, all of which had seen dramatic increases in their nominal prices during the 1970s.²⁵⁹ Over the next decade, the price of all five metals fell, even as the world's population grew from 4.5 billion to 5.3 billion; in 1990 Ehrlich paid \$576.07 to Simon.²⁶⁰ Historian Paul Sabin has detailed the historically-specific reasons for the fall in the price of these metals, demonstrating that the effects of economic, technological, and political factors were stronger than that of population growth. While Simon's victory in this well-publicized bet suggests that population growth has little direct impact on the price of metals, observers — particularly those looking to vindicate neoliberal approaches to governance — drew much more sweeping conclusions, arguing that Simon's victory “proved” environmental regulation and population control unnecessary. Sabin has suggested that the 1980 presidential election in the United States was a popular referendum on conservation (Carter) versus growth (Reagan), with Reagan's sweeping victory signaling a public preference for growth rather than conservation.²⁶¹

Reagan's 1984 statement was also influenced by the work of economist P.T. Bauer, who published a collection of essays, *Equality, the Third World, and Economic Delusion*, in 1981, inveighing against what he called the “myth” of the “population explosion” as a barrier to

²⁵⁸Sabin, see n. 13.

²⁵⁹Ibid., 135.

²⁶⁰Ibid., 181.

²⁶¹Ibid.

economic development.²⁶² However, in contrast to the overpopulation critics of the previous decade, who attributed poverty in the global south to the inequities of international trade, Bauer attributed it to deficient “aptitudes, aspirations, and attitudes” on the part of the poor themselves. Just as dependency theorists, world systems theorists, and other critics of the economic overpopulation discourse had dismissed population as a red herring — arguing that economic development was being prevented by other obstacles — Bauer too dismissed population as irrelevant to development, arguing that the market would reduce population growth, and that its discipline would cure the character deficiencies that, he believed, perpetuated poverty. He theorized that “if rapid population growth should substantially threaten living standards, this would induce people to modify their reproductive behavior.”²⁶³ Reagan echoed these economists in a televised presidential debate in October 1984, stating that the “population explosion” had been “vastly exaggerated — over-exaggerated.”²⁶⁴

The Mexico City conference signals the final dissolution of the economic overpopulation discourse. While the older Malthusian attribution of individual poverty and societal misery to population growth continues to appear in journalism,²⁶⁵ the specific framing of high fertility rates in countries of the global south as a barrier to social, economic, and political “modernization” had been abandoned by its last proponent, the U.S. government. By the 1980s, neoliberal observers in the U.S. no longer needed high fertility to explain poverty and global inequality and thereby elide the effects of imperialism and economic domination; they could now simply blame the poor themselves, as Bauer did in *Equality, the Third World, and Economic Delusion*. But, as described in Chapters Four and Five, the field of demography had expanded considerably during the postwar period as a result of the financial support and legitimacy it had accrued from its patrons and clients, to whom it had offered intellectual

²⁶²T.W. Hutchison, “Review of *Equality, the Third World and Economic Delusion* by P.T. Bauer,” *Economica* 49, no. 194 (1982): 212.

²⁶³Quoted in Paul Demeny, “Review of *Equality, the Third World, and Economic Delusion*,” *Population and Development Review* 8, no. 1 (1982): 192.

²⁶⁴Quoted in Finkle and Crane, see n. 154, 28, note 75.

²⁶⁵See, for example, Kenneth R. Weiss, “Fertility Rates Fall But Global Population Explosion Goes On,” *Los Angeles Times*, July 22, 2012, part of a five-part series.

support for the economic overpopulation discourse. The final part of this section discusses how demography adapted to its new political environment.

7.4.4 Demography After 1984

In response to the circulated draft of the Reagan Administration's 1984 statement, demographer Michael S. Teitelbaum, as chair of the Public Affairs Committee of the PAA, appeared before Congress to protest the government's stance, arguing that the author of the Reagan Administration's statement was "either unaware of 50 years of demographic research, or deliberately ignored it."²⁶⁶ However, Teitelbaum himself seems to have been unaware of much of the demographic research produced over the preceding 50 years. With the signal exception of Coale and Hoover's *Population Growth and Economic Development in Low Income Countries* (1958), much of the demographic research of the half-century prior to the Mexico City conference challenged the economic overpopulation discourse rather than supporting it.

Following the Mexico City Conference, the National Academy of Sciences (NAS) returned to the question of the relationship between population growth and economic development, which it had first addressed in 1963, as discussed in Chapter Four. This time, the NAS Working Group on Population Growth and Economic Development and the Population Committee represented a new generation of demographers. Although it included Ronald Freedman of the University of Michigan and Charles Westoff of OPR, it also included several younger demographers, most notably Ronald D. Lee, a Berkeley demographer who had completed his M.A. in demography with Kingsley Davis and Judith Blake at Berkeley before going to Harvard to study with Nathan Keyfitz for his Ph.D.; University of Pennsylvania demographer Samuel H. Preston, a former student of Ansley Coale at OPR; and Jane Menken, a Princeton demographer who had also studied with Ansley Coale, but whose research focused heavily on women's reproductive health and the role of women in economic development.

²⁶⁶Finkle and Crane, see n. 154, 27, note 60.

Menken and Preston were in 1984 both recent presidents of the PAA.²⁶⁷

In its review of recent scholarship on the relationship between population growth and economic development, the NAS group found that, although “common sense” and theoretical studies had suggested that rapid population growth would impede economic development, over the period from 1960 to 1985, “developing countries have achieved unprecedented levels of income per capital [sic], literacy, and life expectancy,” despite equally unprecedented levels of population growth.²⁶⁸ Moreover, with the exception of parts of Africa, food production worldwide had increased more rapidly than population from the mid-1960s to the mid-1980s, while the real price of food had declined.²⁶⁹ The members of the NAS Population Committee argued that “simple correlations between population growth and per capita income. . . provide little insight into the causal impact of a policy-driven decline in fertility,” something that had been largely ignored in the scientific literature.²⁷⁰ As discussed in Chapters Four and Five, after the 1958 publication of Ansley Coale and Edgar Hoover’s *Population Growth and Economic Development in Low Income Countries*, which was widely interpreted as providing empirical evidence for the economic overpopulation discourse first articulated by Notestein in 1947, demographers had largely focused their attention on how to reduce fertility in the global south, neglecting to examine the social, economic, and political consequences of fertility reduction in agrarian societies.

The report of the NAS Population Committee, published in 1986, validated the Reagan Administration’s position that population growth, in and of itself, was socioeconomically neutral. The Committee found that there was no hard and fast relationship between population growth and economic development; rather, the socioeconomic consequences of population growth or fertility decline depended on a host of structural and institutional factors. The report also supported the contentions of demographers in the 1970s, described in Chapter

²⁶⁷<http://www.emilyklancher.com/digdemog/paa/paafields.html>

²⁶⁸National Research Council, *Population Growth and Economic Development: Policy Questions* (Washington, D.C.: National Academies Press, 1986), 4.

²⁶⁹*Ibid.*, 20.

²⁷⁰*Ibid.*, 7.

Six, that population growth does not automatically lead to resource depletion and environmental degradation, explicitly invoking Barry Commoner's method — also described in Chapter Six — for decomposing changes in pollution levels into the amounts produced by population growth, rising per-capita consumption levels, and technological changes, pointing to “economic activity in the developed countries” as the major culprit.²⁷¹ The report called for regulation and conservation rather than population control as a means of protecting environmental quality. One such solution it recommended was a “market in pollution rights.”²⁷² The recommendation, along with the suggestion that market forces would lead to resource substitution as non-renewable resources grew increasingly scarce, echoed the optimism of earlier generations of demographers about the ability of the market to allocate scarce resources. However, the report did not share the neoliberal market fundamentalism of the Reagan Administration and its economic advisors, arguing that “perfectly functioning markets are no guarantee against starvation when there are extreme disparities of wealth.”²⁷³

The NAS report is representative of a shift that began to occur within demography after 1974 and picked up pace after 1984. The Population Council's new journal, *Population and Development Review* (*PDR*), became an outlet for demography scholarship that did not fit the traditional mold, as represented by the journals *Population Studies* and *Demography*, discussed in Chapter Five. Edited by Paul Demeny, *PDR* devoted considerably less space to quantitative analysis than did either of the other journals — roughly 10% of journal content, as compared to 30% for *Population Studies* and 50% for *Demography*. It also devoted substantially less space to studies of fertility and more space to research on economic development and issues specific to the global south, reflecting Zeidenstein's goal of internationalizing population research.²⁷⁴ New journals also joined the scene, including *Population and Environment*, established in 1980, and *Population Research and Policy Review*, established in

²⁷¹National Research Council, *Population Growth and Economic Development: Policy Questions*, see n. 268, 37.

²⁷²*Ibid.*, 36.

²⁷³*Ibid.*, 34.

²⁷⁴<http://www.emilyklancher.com/digdemog/tmod/topjournal.html>.

1982.

Beginning after 1974, the PAA began to elect presidents whose research focused on areas other than fertility, or whose research on fertility did not fit neatly into the family planning model. These included Judith Blake (1981) and Richard Easterlin (1978), both strong opponents of family planning as a route to economic development, as discussed in Chapters Four and Five; Evelyn Kitagawa (1977) and Charles B. Nam (1979), who studied mortality; and Sidney Goldstein (1976) and Reynolds Farley (1988), who worked on migration and urbanization. In 1986, Paul Demeny served as president of PAA, signaling an ongoing connection between the Population Council, the PAA, and the field of demography. By 1974, the U.S. government had taken over the majority of funding for population research centers at U.S. universities, through the National Institutes of Health (NIH) and USAID. After 1984, NIH became the main funder of demography research, with fertility studies funded by the National Institute of Child Health and Human Development and mortality studies funded by the National Institute of Aging. The field has also acquired new foundation funders, including Gates and Hewlett.

After 1974, the passing of the first generation of demographers, combined with the reorientation of the organizations that served as demography's major patrons and clients, seems to have created an institutional environment more open to a variety of research topics and approaches, in which scholars have more autonomy vis-a-vis their funders. Demographer Dennis Hodgson has described the 1950-1984 period as one of intellectual "orthodoxy," in which views that contradicted what I have called the economic overpopulation discourse were marginalized within the field. This dissertation has aimed to reveal the specific mechanisms and relationships through which demography's patrons and clients exercised influence over the intellectual content of the field, and this chapter and the end of the previous one have detailed the empirical and political challenges to overpopulation discourses and the institutions that protected them.

Conclusion

Between 1970 and 1984, the economic overpopulation discourse succumbed to the accumulation of empirical anomalies and direct political attack, from both progressive and conservative critics. Many countries of the global south experienced both fertility decline and economic growth, without the benefits of modernization promised by demographers, modernization theorists, and the governmental and inter- and non-governmental agencies that promoted family planning worldwide as the solution to poverty, inequality, and strife. Demography graduate students, concerned that their field might be doing more harm than good in the world, laid bare the U.S.-based interests served by global population control and their influence on demographic scholarship. Although the Concerned Demographers had disbanded and largely joined the faculty ranks of the field before the 1974 U.N. World Population Conference, delegates from the global south made similar critiques, rejecting population control as a poor substitute for the real economic reforms embodied in the recently-adopted Declaration of a New International Economic Order.

Following the 1974 conference, population interests within and close to the U.S. government — most prominently Philander Claxton and William Draper Jr. — tried to shore up the economic overpopulation discourse and promote continued U.S. government efforts to control population growth in the global south. In contrast, the Population Council and the Ford Foundation changed their approach, aiming to align their population programs with the needs of those in the countries they sought to help rather than the desiderata of U.S. geoeconomic and geopolitical hegemony. This transition was facilitated by the resignations of Frank Notestein and Bernard Berelson at the Population Council and the retirement of McGeorge Bundy at the Ford Foundation. These resignations, along with the deaths of several central figures in this story, broke up the tight white male network that characterized the field of demography and its relationship to its patrons and clients, which had allowed patrons and clients considerable leverage over the content of the field.

After Bucharest, several nongovernmental organizations engaged in the provision of family planning services shifted their focus from population control to reproductive health. This new agenda, however, was threatened in 1984, when the U.S. delegation to the World Population Conference in Mexico City announced what has come to be known as the “Mexico City Gag Rule” — the prohibition on U.S. government funding to organizations that perform or counsel abortion anywhere in the world. This new law — which, in the years since 1984, has been repealed by every Democratic U.S. President and reinstated by every Republican U.S. President — reflected the growing strength of the religious right wing of the Republican Party in U.S. politics. Facilitating this antiabortion victory was the simultaneous growth of neoliberal market fundamentalism, which held that markets could adequately allocate scarce resources among growing populations and moderate population growth, much as demographers and eugenicists had argued throughout the twentieth century. However, in contrast to demographers and eugenicists, many of whom had recommended the public provision of birth control, abortion, and some public services (including education and school lunches), as well as a measure of government control in markets for reproduction and environmental goods, neoliberals promoted privatization, deregulation, and the elimination of social welfare provisions.

In its statement that “population growth is, of itself, a neutral phenomenon” the Reagan administration echoed earlier critiques of the economic overpopulation discourse.²⁷⁵ However, while the critiques of the 1970s had originated in radical politics and were therefore accompanied by proposals for measures to promote greater equality, redistribution, and fair international trade, those of the Reagan administration originated in neoliberalism and were accompanied by calls for structural adjustment. Whereas the economic overpopulation discourse had naturalized poverty in the global south as a function of high fertility, neoliberal theory naturalized it as an outcome of market forces.

²⁷⁵Finkle and Crane, see n. 154, 2.

Conclusion

In 2011, economist and demographer David Lam gave a presidential address to the Population Association of America titled “How the World Survived the Population Bomb: Lessons from 50 Years of Extraordinary Demographic History.” His address covered the second half of the period discussed in this dissertation, but offered a very different narrative. In effect, Lam told demography’s success story: After World War II, falling mortality in the global south produced rapid population growth, which threatened to outpace food production, prevent economic development, and deplete the world’s resources. However, even as population grew, per-capita food production increased, non-energy commodity prices fell, and population growth rates declined. Lam attributed the world surviving “the population bomb” to three economic factors (market responses, innovation, and globalization) and three demographic factors (urbanization, fertility decline, and investment in children).²⁷⁶ His story was one of triumphant modernization undeterred by rapid population growth.

While Lam explored how the world survived the population bomb, this dissertation has examined how the population bomb was built in the first place: which discursive circuits were connected and by whom to turn population growth into an economic and environmental threat after World War II. In doing so, I have traced the material history of the postwar concept of overpopulation from its interwar components to its dissolution in the 1980s. The concept includes elements with very long histories, and pieces of it continue to exist in certain domains, including public opinion, population genetics, population ecology, biodemography, the environmental movement, and reproductive health. However, the configuration of overpopulation specific to the postwar period — the one that entered the popular imagination during the Cold War — becomes identifiable only in the 1920s, and fades from view begin-

²⁷⁶David Lam, “How the World Survived the Population Bomb: Lessons from 50 Years of Extraordinary Demographic History,” *Demography* 48, no. 4 (2011): 1231–1262.

ning around 1980. The previous seven chapters have described not the intellectual origins of the concept, but rather how it took form as a particular socio-technical assemblage, and then how it traveled between scientific, governmental, philanthropic, and public domains, incorporating and shedding various elements, before ultimately falling apart.

I have distinguished this inquiry from earlier studies of population thought and politics by interrogating two assumptions typically made by the existing literature. The first is the assumption that the postwar concept of overpopulation was more or less the same as — or simply an updated version of — Malthusian thought. The second is that evidence or credible predictions of population growth transparently signaled impending disaster. The story began by challenging the former assumption: Chapters One through Three demonstrated that, prior to World War II and particularly during the interwar period, population growth was multivalent. It could signal poverty and weakness at the individual level and wealth and power at the national level. Population growth also remained multivalent after World War II. Although this story has focused on narratives of impending overpopulation, narratives of depopulation continued into the postwar period, in both the global north and the global south. French demographers and the French government were very concerned about the possibility of absolute population decline in France and its colonies (and former colonies), and Brazil's leaders attributed their country's poverty to lack of the requisite population to adequately exploit natural resources. If population growth is not inherently dangerous, it then remains to examine how enough people came to believe in the inherent danger of population growth to make this perception dominant in U.S. public opinion and domestic and foreign policy from the 1950s through the 1970s, which is the topic of Chapter Fours through Six. Chapter Seven examines how the perception lost its dominance during the 1980s.

This story demonstrates that a relatively small number of men — and an even smaller number of women — were in large part responsible for the crystallization and perpetuation of the postwar overpopulation discourses. Of course, while these men had the power to bring

overpopulation discourses to the attention of publics and policy makers, the stabilization of the discourses also required the work of many other human and nonhuman actors. Universities, scholarly journals, and the mass media endowed certain ideas with authority. The actual growth of population, degradation of the environment, and existence of poverty provided the evidence overpopulation discourses cited. The Cold War heightened anxiety about global political unrest. The economy as a new statistical object that could be measured provided something to measure against population growth. Demographic transition theory and the cohort component projection method predicted and projected future population growth, but also opened space for the “natural” growth associated with demographic transition theory to go awry. Fertility surveys linked individual reproductive activities to aggregate population growth. IUDs offered the promise of control over other people’s fertility. This overpopulation assemblage gained further support from citizens of the U.S. and the global south who believed and repeated it, and from the U.S. government, the U.N., and governments in the global south, all of which developed policies on the basis of it.

However, this story also demonstrates that the assemblage would not cohere indefinitely and points to the factors that precipitated its dissolution after the mid-1970s. Many of its key proponents died. New empirical evidence from the global south demonstrated that fertility decline and economic growth did not necessarily trigger the “modernization” that was supposed to alleviate poverty and improve living standards. Evidence that environmental deterioration was outpacing population growth pointed to other causes. Religious opponents of birth control and abortion gained political power. New ideologies of the free market obviated the necessity of government involvement in population or the environment. Those whose fertility was deemed dangerous resisted control.

When I began research for this project, I expected to trace the formation and circulation of ideas, which I did. I tracked the logistic law of population growth, demographic transition theory, the cohort component projection model, mainstream and free-market eugenics, and the economic and environmental overpopulation discourses. What I did not expect, however,

was that — in the archives, oral histories, datasets, and publications that form the corpus for this study — I would actually witness these ideas being passed between people and institutions, circulated through the press and scientific publications, embedded in survey instruments, enshrined in policy, and enacted on bodies. I found that information travels with less friction when communicated directly from person to person, and that money lubricates the spread of ideas, for example through the purchase of newspaper space or the funding of research and the communication of its results. When General William Henry Draper Jr. recommended to President Eisenhower in 1959 that U.S. foreign aid programs should include population control, he did not pull that idea from a vacuum or from pre-existing common knowledge of the dangers of population growth, as other scholars have suggested. Rather, as I describe in Chapter Four, Draper recommended population control to Eisenhower because Moore had brought it to Draper's attention, sending him descriptions by the Population Reference Bureau of Coale and Hoover's 1958 *Population Growth and Economic Development in Low-Income Countries* to bolster his claims. The Coale-Hoover study had been funded by World Bank president Eugene Black; the Population Reference Bureau was funded by the Population Council (and by other organizations through the Population Council), a nongovernmental organization established by John D. Rockefeller III. Many of these men knew each other and traveled in the same circles, though it was always clear who worked for whom.

I do not wish to argue that overpopulation was a conspiracy masterminded by John D. Rockefeller III or anyone else. Clearly, postwar overpopulation discourses contained multiple elements, some with long histories, and required the work of many people, institutes, and things to make them cohere. Rockefeller's ideas were not shared by everyone else in the population establishment. Indeed, the divergent and conflicting approaches taken by Rockefeller and Moore likely generated more support, credibility, and publicity for overpopulation discourses than either approach would have generated on its own. Nonetheless, I was surprised to find that the circulation of overpopulation discourses could be traced to personal and

institutional links involving a very small number of people, and I have sought to highlight these links in the narrative. I was also surprised to find that the people I identified as the points of exchange were mostly not demographers but rather their patrons and clients.

The heavy reliance of overpopulation discourses not on demographers but on their patrons and clients suggests that postwar overpopulation discourses depended on demographic theories, data, and analyses (including population projection), but were neither reducible to nor overdetermined by the field of demography. This interdisciplinary science emerged from the intersection of twentieth century population change and political anxieties about that change. Population change provided would-be demographers with something to measure, theorize, and analyze; political anxieties about population change provided would-be demographers with patrons to fund their work and give it institutional legitimacy, and with clients to mobilize their work and bolster its authority. Demography, in turn, produced scientific justification for the political projects of its patrons and clients, whether those projects were the legalization of birth control and abortion, eugenics, immigration restriction, pronatalism, the government provision of family planning services, or financial incentives to limit family size.

Future research for this project will include examination of additional archives related to demography's patrons, clients, and antagonists, and interactions between these actors and demographers. In particular, I plan to examine the records of the Population Investigation Committee, the Ford Foundation, Hope Eldridge's investigation by the House Un-American Activities Committee, and Federal Bureau of Investigation surveillance of demographers during the Cold War. I also plan to read more of the Spanish-language demography literature of the 1960s and 1970s, and to examine the role of the Catholic Church in the construction, maintenance, and dissolution of the postwar overpopulation discourses in the U.S. and globally.

In the period since 1984, demographers have focused increasing attention on three new population trends. First, mortality in the global south has failed to decline to the levels

achieved in the global north, as a result of continuing poor living standards and lack of access to safe water and effective medical care.²⁷⁷ Second, fertility has fallen below replacement in many countries of Europe and East Asia, producing concern about the social and economic consequences of a top-heavy age structure.²⁷⁸ Third, with mortality stabilizing and fertility falling, migration plays a larger role in population change (at sub-global levels), though it remains much more difficult to measure, model, or predict than mortality or fertility.²⁷⁹ The new concept of “replacement migration” has emerged to describe the desirability of welcoming more immigrants to countries with very low fertility to fill in the bottom of the age pyramid.²⁸⁰

These new trends suggest considerable slowing of the rate of population growth, though natural increase at the global level is still positive, a result of population momentum. World population reached 7 billion in 2011. The *U.N. World Population Prospects* for 2010 projected a population of just over 10 billion in the year 2100 as its medium variant.²⁸¹ In 2012, the U.N. revised the projection upward to nearly 11 billion in the year 2100.²⁸² Demographers continue to keep the end of population growth in their sights, even though recent trends suggest it may result from very low fertility in some countries and relatively high mortality in others, rather than low mortality and replacement fertility everywhere. However, other

²⁷⁷Davidson R. Gwatkin, “Indications of Change in Developing Country Mortality Trends: The End of an Era?” *Population and Development Review* 6, no. 4 (1980): 615–644.

²⁷⁸Fred R. Harris, ed., *The Baby Bust: Who Will Do the Work? Who Will Pay the Taxes?* (Lanham: Rowman & Littlefield, 2006).

²⁷⁹For a new approach to modeling migration, see Andrei Rogers, *Multiregional Demography: Principles, Methods and Extensions* (New York: Wiley, 1995).

²⁸⁰D.A. Coleman, “Replacement Migration, or Why Everyone is Going to Have to Live in Korea: A Fable for Our Times from the United Nations,” *Philosophical Transactions of the Royal Society of London B* 357 (2002): 583–596.

²⁸¹United Nations Population Division, *World Population Prospects, the 2010 Revision: Volume I, Comprehensive Tables* (New York: United Nations, 2011), URL: http://esa.un.org/unpd/wpp/Documentation/pdf/WPP2012_Methodology.pdf (accessed 04/14/2015).

²⁸²United Nations Population Division, *World Population Prospects, the 2012 Revision: Volume I, Comprehensive Tables* (New York: United Nations, 2013), URL: http://esa.un.org/unpd/wpp/Documentation/pdf/WPP2012_Methodology.pdf (accessed 04/14/2015); these population projections continue to rely on the cohort component projection method, but employ statistically sophisticated methods of fitting future fertility and mortality curves for each country, United Nations Population Division, *World Population Prospects, the 2012 Revision: Methodology of the United Nations Population Projections and Estimates* (New York: United Nations, 2014), URL: http://esa.un.org/unpd/wpp/Documentation/pdf/WPP2012_Methodology.pdf (accessed 04/14/2015).

observers have continued to express anxiety about global population growth.

In July 2012, *The Los Angeles Times* published a five-part series by Kenneth R. Weiss and Rick Loomis on rapid population growth in Asia and Africa.²⁸³ The series — in which the authors link population growth to poverty, hunger, unrest, and environmental degradation — hits notes of the postwar overpopulation discourses, though there are also differences: now, concern about unrest focuses on young Muslim men rather than communists, and concern about the environment focuses on climate change rather than resource depletion. In contrast to the 1960s and 1970s, when the supply of contraceptive drugs and devices provided by the Population Council, USAID, and the International Planned Parenthood Federation exceeded demand, today demand exceeds supply, a result of cutbacks to family planning programs and the ongoing inadequacy of health care in many parts of the world. The authors acknowledged that fertility rates were falling, but argued that they were not doing so rapidly enough, and that economic growth was exacerbating the environmental devastation wrought by population growth. This series, like the postwar overpopulation discourses, individualizes and naturalizes systemic social, political, and economic problems, attributing them to the biology of population rather than the global political and economic order.

Perhaps the most visible new overpopulation discourse is that of the Anthropocene, the name proposed by geologists to describe the current geological era, in which human activity is the most powerful driver of biogeochemical activity.²⁸⁴ The Anthropocene designation usefully calls attention to the effects of certain human activities on the Earth, altering not just its land, water, and atmosphere, but also its very substance. However, the concept also threatens to naturalize the human influence on the environment and to collapse distinctions between such activities as pre-industrial agriculture and the extraction and burning of fossil fuels.²⁸⁵ It also elides the interests that are advanced by and therefore promote the activities

²⁸³<http://www.latimes.com/world/population/> (accessed 4/14/2015).

²⁸⁴Will Steffen et al., “The Anthropocene: Conceptual and Historical Perspective,” *Philosophical Transactions of the Royal Society A* 369 (2011): 842–867.

²⁸⁵Andreas Malm, “The Anthropocene Myth,” *Jacobin* (Mar. 30, 2015), URL: <https://www.jacobinmag>.

that have the strongest detrimental impact on the environment.²⁸⁶ By attributing recent biogeochemical trends to humanity and its expansion, rather than to specific human activities, the Anthropocene revives the spectre of population growth as a threat to the natural world and to human survival, and renews the temptation of the per-capita solution of population control.²⁸⁷

Previous research has demonstrated that the practice of population accounting facilitates the calculation of per-capita measures of social, economic, political, and environmental goods and bads. This dissertation has teased out an important political implication of per-capita measures: they can suggest per-capita causes of and solutions to social problems. These solutions work well under certain theoretical assumptions. For example, if economic output is fixed, then reducing population will increase per-capita output. If per-capita carbon emissions are fixed, then reducing population will reduce aggregate carbon emissions. Per-capita formulations of these problems or their solutions often obscure the inaccuracy of these assumptions and thereby misidentify the sources of the problems. They also elide inequality and the role of inequality in producing the very problems they attempt to explain. This dissertation has suggested that inequality matters in very concrete ways: those who have the ear of presidents or the money to fund scientific research have the power to shape the world according to their vision — or at least have considerable influence over how others perceive the world.

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²⁸⁶Oreskes and Conway, see n. 57.

²⁸⁷Angus and Butler, see n. 186.

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