The Social Life of *Khadi*:
Gandhi's Experiments with the Indian Economy, c. 1915-1965

by

Leslie Hempson

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(History)
in the University of Michigan
2018

Doctoral Committee:

Associate Professor Farina Mir, Co-Chair
Professor Mrinalini Sinha, Co-Chair
Associate Professor William Glover
Associate Professor Matthew Hull

Leslie Hempson

lhempson@umich.edu

ORCID iD: 0000-0001-5195-1605

DEDICATION

To my parents, whose love and support has accompanied me every step of the way

TABLE OF CONTENTS

LIST OF FIGURES

FIGURE

LIST OF ACRONYMS

AICC – All India Congress Committee

AISA – All India Spinners Association

AIVIA – All India Village Industries Association

BoT – Board of Trustees

CLA – Central Legislative Assembly

GoI – Government of India

IDA – International Decimal Association

IDS – Indian Decimal Society

INC – Indian National Congress

KP – Khadi Pratisthan

KVIB – Khadi and Village Industries Board

KVIC – Khadi and Village Industries Commission

SGA – Shri Gandhi Ashram

SSS – Sarv Seva Sangh

GLOSSARY OF KEY TERMS

Ashram – A utopian living community

Bobbin – A reel around which yarn is wound

Carding – The act of disentangling cotton fibers and arranging them in neat parallel rows called slivers

Charkha – A hand-powered spinning wheel

Ginning – The act of removing dirt, seeds, and other impurities from cotton fibers

Hank – (1) A skein of yarn; (2) A measure of length for yarn (see Appendix)

Pareta – A bobbin

Reeling – The act of winding spun yarn around a bobbin, or pareta

Sliver – A bundle of cotton fibers that has been ginned and carded

Spinning – The act of turning (cotton, silk, or wool) slivers into yarn

Weaving – The act of turning yarn into cloth

Yarn count – A numerical expression of the relative coarseness or fineness of yarn. It indicates the length per unit mass or the mass per unit length of yarn

ABSTRACT

This dissertation is a historical study of the socio-material and knowledge practices involved in the making of the modern Indian economy between approximately 1915 and 1965. It explores this subject through the lens of the khadi economy, the name I assign to the network of institutions established by Mohandas Karamchand Gandhi from the late 1910s to ameliorate rural unemployment and underemployment through the reintroduction of village industries in the Indian countryside. In contrast to most accounts of the khadi economy, which portray it as a traditionalizing zone rooted in a nostalgic vision of the past, I situate it at the heart of processes of modern economy formation in late colonial and early postcolonial India.

The history of the khadi economy, I argue, offers critical insights into some of the key developments in twentieth-century Indian economic life, ranging from the changing spatial relationship of agriculture to industry; to the rise of formal organizations and scientific management; to the establishment of standardized weights and measures; to technological innovation. In recuperating the khadi economy as one instance in the making of the modern Indian economy, I provide an alternative perspective on economic modernization. The khadi institutions discussed here did not resist the rise of a modern economy but instead worked to establish a modern economy on their own terms that deployed some of the same tools (scientific management, standardized weights and measures, etc.) in different ways. In attempting to create a modern economy that was nevertheless different from the modern economy that ultimately prevailed in India, khadi institutions offer a unique lens on what exactly was at stake in the modern economy's creation.

INTRODUCTION

Between 1957 and 1959, the Indian government published three pamphlets chronicling the past, present, and future of what it called the "silent economic revolution."[1] Elaborately illustrated and printed on handmade paper, these pamphlets told the story of a campaign established by Mohandas Karamchand Gandhi in the late 1910s to create a new economy for modern India. This campaign centered on rural India, home to over eighty percent of the Indian population, much of it unemployed or underemployed for large stretches of the year. Gandhi and a revolving cast of lawyers and scientists, writers and accountants, social theorists and bureaucrats attempted to reestablish the production of *khadi*, or handspun, handwoven cloth, in the Indian countryside as a way of combating the rural unemployment and underemployment crisis. Simultaneously, they worked to reconstitute the economy on what they regarded as a more egalitarian, cooperative, and self-limiting footing.

It is unclear whether Gandhi ever used the phrase "silent economic revolution" himself. Some of his fellow travelers did, however, including some of the khadi campaign's leading luminaries. In their hands, the phrase came to signal a specific approach to economic change, one grounded in the belief that it is the outcome of a "long and laborious evolutionary process," not a one-time event culminating in "thunder, storm, explosion, sound and fury."[2] The Indian nationalist leader J. B. Kripalani, for example, was fond of commenting, "It must be some kind

[1] Vijayadev, *Ambar Charkha: The Silent Revolutionary* (Bombay: United Asia Publications, 1957); *The Story of a Silent Economic Revolution* (Bombay: Khadi and Village Industries Commission, 1958); Vijayadev, *The Silent Revolution* (Bombay: Khadi and Village Industries Commission, 1959).
[2] J. B. Kripalani, *Politics of Charkha* (Bombay: Vora & Co., Publishers, Ltd., 1946), 31-2.

of intellectual and visual jaundice that fails to see beauty in small things and is impressed by the big and the powerful alone."[3] A long-time colleague of Gandhi's, he was perhaps the second- or third-most influential figure in the khadi campaign. In his hands, "silent economic revolution" took on an additional meaning—it was an admonishment to look beyond the obvious forces driving economic change to uncover those hidden from view.

This dissertation is a historical study of the socio-material and knowledge practices involved in the making of the modern Indian economy between approximately 1915 and 1965. I approach this subject through the framework of the khadi economy, the name I assign to the network of institutions, individuals, ideas, and material objects established by Gandhi and his associates to accomplish a variety of ends, including ameliorating rural poverty and inequality; presenting an alternative to market capitalism; and making cooperation, and not competition, the central feature of Indian? economic life. I argue that the history of the khadi economy offers key insights into some of the critical developments in twentieth-century Indian economic life, ranging from the changing spatial relationship of agriculture to industry; to the rise of formal organizations and scientific management; to the establishment of standardized weights and measures; to the invention of technologies to create new forms of employment.

The Modern Economy

Two concepts provide conceptual coherence to this dissertation, the first of which is "modern economy." "Modern economy" is a notoriously difficult term to define, in no small part because it is often treated as the inverse of the "traditional economy." Rather than presupposing the nature of the modern economy, this becomes the focus of my inquiry. I examine the modern

[3] *Ibid*, 23.

economy as it is constituted across multiple sites and scales of analysis—from a corporate boardroom in Bombay to the home workshop of an amateur technology enthusiast, from the pages of a mathematics textbook to poetry written in praise of the spinning wheel. All the while, I ask what the modern economy looks like and what it takes to produce one. In doing so, I follow the lead of the historical actors who are the subject of this study, asking when they thought their efforts would lead to the creation of a modern economy and why.

This approach, derived partly from science and technology studies (STS) literature, allows me to move beyond the tired framework of "success" and "failure" that has structured so many histories of the modern economy. Signal works in the social construction of technology have demonstrated "the need for a more symmetric focus of analysis that looks at cases of both failure and success in understanding technical and social change."[4] In the context of my project this means resisting the urge to tell what Daniel Immerwahr has labeled "Modernization Comes to Town" stories. Stories written in this vain describe "how a world that was once rooted in local, heterogeneous, informal, flexible, pluralistic, and, above all, small-scale institutions was lost." They implicitly "call for a reversal of that trend" while casting "the people and communities who have resisted modernization" as "tragic figures, doomed to failure."[5] In doing so, they divide the world into winners and losers, i.e. those who have modernized and those who have not.

Though powerful in their starkness, Modernization Comes to Town stories are too simplistic to grapple with the possibility that modernization might produce more than two

---

[4] This quotation comes from C. Shambu Prasad in his reinterpretation of "khadi science." See "Exploring Gandhian Science: A Case Study of the Khadi Movement," PhD diss. (Indian Institute of Technology, 2001), 116. A classic argument for the importance of viewing success and failure as two halves of the same whole is Trevor J. Pinch and Wiebe E. Bijker, "The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other," in *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, eds. Bijker, Thomas P. Hughes, and Pinch (Cambridge, MA: The MIT Press, 2012): 11-44.

[5] *Thinking Small: The United States and the Lure of Community Development* (Cambridge: Harvard University Press, 2015), 5-6.

outcomes. As I show in my dissertation, the khadi organizations that are the central protagonists of my story neither resisted the rise of the modern economy nor attempted to create its opposite. Instead, they established a modern economy of their own, using the same tools as other Indians.

Approaching khadi organizations not as reactionary bodies trying to revive an old way of life but as enthusiastic participants in the creation of a new economic order helps us to view the modern economy anew as the outcome of a competitive process. This competition transpired not just on the level of ideas, as in the case of disagreements between Gandhi and Jawaharlal Nehru over the shape of independent India's economy, but also on the level of everyday economic practice.[6]

Critical accounts of economic modernization portray it as a fundamentally dehumanizing process that generates a clearly identifiable set of "losers."[7] In doing so, these accounts suggest that there are only two alternatives: to modernize or to invite marginalization. The story I tell in this dissertation departs from this narrative, however. In this respect, I follow in the tradition of historians like Tirthankar Roy and Douglas Haynes, who have refused to present the making of the modern economy as a straightforward case of winners and losers.[8] But where Roy presents change within the artisanal sector as primarily modernizing in its direction—that is, as proceeding in a relatively straightforward fashion from the "traditional" to the "modern"—I tell a more complicated story in which economic change gave rise to not one but multiple moderns. In

[6] Nehru and Gandhi exchanged contrasting views of the economy on many occasions. One example is their famous 1945 correspondence, which can be found in "Gandhi-Nehru Dialogue," in *Hind Swaraj and Other Writings*, ed. Anthony J. Parel (Cambridge: Cambridge University Press, 2012), 143-9.
[7] James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven: Yale University Press, 1998.
[8] Douglas Haynes, *Small Town Capitalism in Western India: Artisans, Merchants, and the Making of the Informal Economy, 1870-1960* (Cambridge: Cambridge University Press, 2012) and Tirthankar Roy, *Artisans and Industrialization: Indian Weaving in the Twentieth Century* (Delhi: Oxford University Press, 1993).

this sense, my work tracks more closely with that of Haynes, who has argued that the artisanal economy in twentieth-century western India assumed multiple shapes, not just one.[9]

Economic Imagination

The second concept helping to organize this dissertation is "economic imagination," i.e. the ways in which individuals and groups of individuals envision economic life and "conceive and present arguments about the future direction" of the economy. I have adapted this concept from Ernesto Bassi's discussion of what he calls "geopolitical imagination." Bassi argues that his definition "allows for every person to be a geopolitical analyst—it democratizes geopolitics and the geopolitical imagination—thus taking the exclusive rights to a geopolitical imagination away from 'major actors and commentators' to put geopolitics within the reach of subalterns and other *minor* actors."[10] My definition of economic imagination has similar implications, inviting us to approach accountants, schoolteachers, salespeople, and other ostensibly "minor" actors as individuals whose economic imaginations open up onto vast worlds.

Economic imaginations are products of specific historical moments. As such, they tell us what the historical actors we study considered plausible and/or desirable at a given moment in time. This latter point is important because it allows us to move beyond the "success and failure" binary that structures so many analyses of modernization to a consideration of "the potential future outcomes that the historical actors we study believed could result from their present."[11] Historical actors' predictions about the future constitute their "horizon of expectations," alerting

[9] Haynes 2012, 10.
[10] Ernesto Bassi, *An Aqueous Territory: Sailor Geographies and New Granada's Transimperial Greater Caribbean World* (Durham: Duke University Press, 2016), 11.
[11] *Ibid*, 261.

us to what they considered possible at a given moment in time.[12] In this sense, a study of imaginary futures is always a study of the present. People can envision only those futures they deem plausible, and their understanding of what is plausible changes in relation to changes in the world in which they live. In examining imaginary futures, then, we learn not only about the "other worlds" our research subjects wished to inhabit but also about the relationship between changes in the political, economic, social, and cultural landscape, and changes in "conceptions of the historically possible."[13]

I explore the economic imagination associated with the khadi economy through a series of questions: Why was this imagination compelling to the diverse group of people who participated in the khadi economy at various moments in time? How was it shaped by its landscape, and how did it help to shape it in turn? Was it internally coherent? Who or what did it include and exclude? And, finally, how does this economic imagination help us to interrogate what we take to be normative about the Indian economy?

Unsurprisingly, the answers to these questions are incredibly varied. Although the modern economy envisioned by the subjects of my dissertation differed in important respects from the modern economy envisioned by other Indians, it also converged, particularly over the question of how a modern economy was to be made. As I show in the following chapters, the wide range of actors affiliated with khadi organizations recognized the power of standardization, bureaucratization, centralization, industrialization, etc. and attempted to incorporate these processes into their economy-building initiatives. They did so in ways that would have made

[12] "Horizon of expectations" is a concept Reinhart Koselleck discusses in *Futures Past: On the Semantics of Historical Time* (New York: Columbia University Press, 2004), 255-77.
[13] Manu Goswami, "Imaginary Futures and Colonial Internationalisms," *American Historical Review* 117, no. 5 (Dec. 2012), 1463.

little sense to some of their contemporaries, however—for example, employing modern accounting and financial practices to avoid the production of a profit.

Attention to the economic imagination embedded in khadi organizations reveals a wider range of orientations toward economic life than we have accounted for thus far. While popular portrayals of Gandhi sometimes view his economic outlook as hopelessly naive, the fact that it was shared to varying degrees by other participants in the khadi economy—scientists, mathematicians, teachers, accountants, lawyers, technologists, middle managers, etc.—suggests that we should take another look. We can do so by situating the history of the khadi economy more squarely within the context of post-World War I India and not primarily, as we are so accustomed to doing, the pages of *Hind Swaraj* and Gandhi's other great writings on the evils of modern civilization.

Historical Context

The khadi economy began to take shape at a time of great political and economic turmoil in the Indian subcontinent. Gandhi returned to India from a two-decades-long sojourn in South Africa shortly after the outbreak of World War I, an event of enormous significance for India. The British colonial government recruited heavily in India, and by 1918, the size of the Indian army had grown to 1.2 million. India's defense expenditures increased by approximately 300% as a result, and the colonial state's attempts to increase its coffers created inflationary pressures in India at the very moment a four-decades-long world trade boom came to an end. This period marked a shift in India's economic relationship with Britain. India had functioned as a classical colonial economy since the mid-nineteenth-century, becoming a net exporter of cheap raw

materials and a net importer of British manufactured goods. Now, India was beginning a slow shift toward an import-substitution model that would endure in one form or another until 1991.[14]

The shift in India's economic relationship with Britain had not resolved one of its greatest problems, though: the existence of a large surplus labor force in rural areas with little access to regular work. Historians have written extensively about the rural reconstruction programs established throughout India to make a dent in this problem. While a diverse group of people—Indian nationalists, colonial officials, foreign capitalists and missionaries, and American philanthropists—had taken a keen interest in Indian villages from the late nineteenth century, their interest—and attempts to intervene—heated up in the interwar period. This is an important fact to keep in mind, since it shows that the khadi economy was far from the only intervention in the rural Indian economic landscape. In fact, khadi organizations shared much with organizations established by individuals such as the British bureaucrat Francis Brayne and the American missionary Spencer Hatch to provide work to rural dwellers.[15] Nicole Sackley has noted that the global depression of the 1930s lent even more urgency to rural reconstruction as people around the world began to "question industrial capitalism and envision instead a return to the social and communal bonds of rural life, where even industry would be relocated to the countryside."[16] As a project designed to reestablish khadi production in village India, the khadi economy would seem to fit right in.

This point notwithstanding, a wide range of Indians—many of them broadly sympathetic to Gandhi's economic mission—questioned why he had decided to focus his vast resources on

---

[14] My summary of the economic history of this period comes from B. R. Tomlinson, *The Economy of Modern India, 1860-1970* (Cambridge: Cambridge University Press, 1996), 119 and 154-5.
[15] Subir Sinha, "Lineages of the Developmentalist State: Transnationality and Village India, 1900-1965," *Comparative Studies in Society and History* 50, no. 1 (2008), 61-71.
[16] "The Village as Cold War Site: Experts, Development, and the History of Rural Reconstruction," *Journal of Global History* 6, no. 3 (2011), 488.

the spinner and not the farmer or handloom weaver instead. Sam Higginbottom, the Presbyterian missionary whose experiments in scientific agriculture made him one of India's most sought after agricultural experts, is one example of a Gandhi confidante who believed that economic change was best effected by improving the condition of the farmer. Both before and after he assumed a seat on the executive board of Gandhi's All India Village Industries Association (AIVIA), Higginbottom urged Gandhi to abandon spinning for what he regarded as the far more important task of increasing agricultural productivity. Gandhi, Higginbottom suspected, was mired in a "traditionalist" mode of thinking.[17]

The initial decision to focus khadi organizations' resources on hand-spinning as opposed to, say, hand-weaving or agriculture seems to have been as much pragmatic as it was ideological, however. In conversations with his nephew Maganlal, who wanted to turn part of Sabarmati Ashram into a farm, Gandhi advised him to pursue only those agricultural activities that would generate a profit for the Ashram and devote the rest of his time to the charkha. "We should drop or curtail, one by one, those of our activities which we think others are likely to take up," Gandhi wrote to Maganlal in June 1919, "and pay more attention to those in which others have less faith, or none, but which are all the same essential. Spinning is one such activity."[18] Spinning, as he elaborated on another occasion, was a dying occupation and therefore in need of more immediate attention than agriculture. Besides, large-scale agricultural reform could proceed only with the cooperation of a national government. Those who proposed tackling agricultural reform thus

[17] Sam Higginbottom, *Sam Higginbottom, Farmer: An Autobiography* (New York: Charles Scribner's Sons, 1949), 179-80 and Gary R. Hess, *Sam Higginbottom of Allahabad: Pioneer of Point Four to India* (Charlottesville: The University Press of Virginia, 1967), 62-3.
[18] "Letter to Maganlal Gandhi," June 1, 1919, *CWMG* Vol. 14, 340.

"presupposed the existence of an independent Indian state," and not the colonial one that wielded power.[19]

When viewed from this perspective, Gandhi's decision to pursue khadi production made a great deal of sense. A low-skilled activity that could be performed virtually anywhere with little training or capital investment, it promised a steady, if small, stream of supplementary income. Though some of Gandhi's contemporaries ridiculed his plan to ease village India's unemployment crisis through the reintroduction of handspinning to rural households, he remained firm in his convictions. "The sole claim urged in its favour," he wrote in 1927, "is that it is the only immediately practicable supplementary occupation that can be offered to the vast mass of the population that is starving or half-fed in consequence of abject poverty and enforced idleness for nearly half the year."[20] Over time, Gandhi would amend this argument to make it more ambitious, proposing that Indians turn to handspinning as a full-time occupation instead.

Historiography

Khadi

This dissertation intervenes in three bodies of scholarship, the first of which is the literature on khadi and the khadi economy. The historiography on khadi is a rich and voluminous field that has contributed to our understanding of subjects as diverse as the rise of mass nationalism, scientific and technological development, small-scale industry, changing sartorial preferences, and of course, Gandhian economic thought.[21] Until recently, however, it was

---

[19] Prasad 2001, 90 and Thomson 1993, 111-2.
[20] *Khadi Guide, 1927* (Ahmedabad: The All India Spinners' Association, 1927), 1.
[21] For mass nationalism, see Rebecca Brown, "Spinning Without Touching the Wheel: Anticolonialism, Indian Nationalism, and the Deployment of Symbol," *Comparative Studies in South Asia, Africa and the Middle East* 29.2 (2009), 230-45; Partha Chatterjee, *Nationalist Thought and the Colonial World: A Derivative Discourse* (London: Zed Books, 1993; Lisa Trivedi, *Clothing Gandhi's Nation: Homespun and Modern India* (Bloomington: Indiana University Press, 2007); and Rahul Ramagundam, *Gandhi's Khadi: A History of Contention and Conciliation*. New

dominated by a focus on khadi's symbolic and political dimensions to the near total exclusion of other concerns.[22] A more recent body of revisionist scholarship has attempted to bridge the gap between khadi's symbolic aspects, on the one hand, and its technical aspects, on the other, and, in doing so, to show that khadi's "meaning and efficacy" is "not only political/cultural *or* technical but both at the same time."[23]

I build upon this revisionist literature in my dissertation to present an alternative perspective on the khadi economy. While most accounts have portrayed it as a traditionalizing zone rooted in a nostalgic vision of the past, I reframe it as an instance in the making of the modern Indian economy.[24] In doing so, I draw upon the work of scholars, such as Ross Bassett, C. Shambu Prasad, and Rahul Ramagundam, who have emphasized some of the explicitly modern dimensions of the khadi economy, including its contributions to science and technology, and to business models and practices.[25]

Delhi: Orient Blackswan, 2009). For scientific and technological development, see Ross Bassett, *The Technological Indian* (Cambridge: Harvard University Press, 2016) and Prasad 2001. For small-scale industry, see Abigail McGowan, *Crafting the Nation in Colonial India*, (New York: Palgrave MacMillan, 2009); Deepak Mehta, "A Sociological Study of Gandhian Institutions: Work, Weavers, and the Khadi and Village Industries Commission." PhD diss. (Delhi University, 1991); and Thomson 1993. For sartorial concerns, see C. A. Bayly, "The Origins of Swadeshi (Home Industry): Cloth and Indian Society, 1700-1930," in *The Social Life of Things: Commodities in Cultural Perspective*, ed. Arjun Appadurai (Cambridge: Cambridge University Press, 1986), 285-321; Susan Bean, "Gandhi and *Khadi*: The Fabric of Indian Nationalism," in *Cloth in Human Experience*, ed. Annette Weiner and Jane Schneider (Washington, DC: Smithsonian Institution Press, 1989), 356-65; Rebecca M. Brown, *Gandhi's Spinning Wheel and the Making of India* (London: Routledge, 2010); Dipesh Chakrabarty, "Khadi and the Political Man," in *Habitations of Modernity: Essays in the Wake of Subaltern Studies* (Chicago: University of Chicago Press, 2002); Bernard S. Cohn, "Cloth, Clothes and Colonialism in the Nineteenth Century," *Colonialism and Its Forms of Knowledge* (Princeton: Princeton University Press, 1996); and Emma Tarlo, *Clothing Matters: Dress and Identity in India* (Chicago: University of Chicago Press, 1996). For Gandhian economic thought, see Ajit K. Dasgupta, *A History of Indian Economic Thought* (London: Routledge, 1993); Bhabatosh Datta, *Indian Economic Thought: Twentieth Century Perspectives, 1900-1950* (New Delhi: Tata McGraw-Hill Publishing Company Ltd., 1978); David Hardiman, *Gandhi in His Time and Ours: The Global Legacy of His Ideas* (New York: Columbia University Press, 2004); Claude Markovits, *The UnGandhian Gandhi: The Life and Afterlife of the Mahatma* (London: Anthem Press, 2004).

[22] This emphasis on the symbolic can be found in Bean 1989, Cohn 1996, Mehta 1992, Tarlo 1996, among others.

[23] Prasad 2001, 15. Bassett and Ramagundam also epitomize this approach.

[24] Datta 1978 and Dasgupta 1993 are two examples.

[25] Only Ramagundam is specifically interested in the question of economy, though.

Reframing the khadi economy as one instance of the making of the modern Indian economy helps us move beyond the tradition-modernity dualism that has structured so many studies of khadi. It also helps us move beyond another common tendency: to use the metrics of "success" and "failure" to evaluate the khadi economy. Many historians of khadi have anchored their analyses partly in the question of whether Gandhi and the khadi organizations with which he was associated succeeded in accomplishing their aims. They have more often than not answered this question in the negative, concluding, as in the case of Richard G. Fox, that: "Neither as an experiment in bread labor, nor as a major employer of India's rural unemployed, nor as a check on mill owners' greed, but only as a destination for government funds has khadi succeeded."[26]

While there is nothing inherently wrong with a success-failure framework, it is nevertheless a limiting one, especially when applied to essentially experimental projects such as khadi. Shambu C. Prasad, issued a call for moving away from such a framework in his excellent study of khadi as an example of "science in civil society." Work in science and technology studies, and the sociology of technology, he wrote, "have pointed out the need for a more symmetric focus of analysis that looks at cases of both failure and success in understanding technical and social change. The actual development process of a technical artefact in fact follows a multidirectional instead of a linear model of technical change."[27] In practical terms,

[26] *Gandhian Utopia: Experiments with Culture* (Boston: Beacon Press, 1989), 181. Tarlo 1996 and Thomson 1993 are two other examples of scholars who have embraced "success" and "failure" as parameters for evaluating the khadi project. While Tarlo, contra Susan Bean and others, argued that Gandhi failed to transmit a single comprehensible message through his khadi clothing, Thomson argued that Gandhi's ashrams (Thomson characterizes them as laboratories for experiments in areas such as khadi) failed to live up to his expectations.
[27] Prasad 2001, 116. Ramagundam has also moved away from the success-failure framework, albeit in a less explicit fashion.

this means approaching success and failure as two components of the same whole and not, as is so often the case, as opposing positions in a binary.[28]

This dissertation makes two additional moves. First, it extends its history of the khadi economy beyond the conventional stopping point of August 15, 1947. Most studies of the khadi economy stop there, perhaps on the assumption that the khadi economy's significance came to an end with the attainment of independence and later Gandhi's death in January 1948.[29] In selecting 1947 as a stopping point, these studies reduce the history of the khadi economy to that of the nationalist movement, however, while reinforcing the longstanding break in South Asian economic history between analyses of the colonial and postcolonial periods. My study, by contrast, shows continuities and changes in the khadi economy around the moment of independence, showing how the economic imagination associated with khadi organizations continued to evolve.

Second, it refuses the tendency to portray Gandhi as a lone genius who established and operated the khadi economy on his own. While it is true that Gandhi was the primary architect behind the khadi economy's creation, he did not exercise total control over it but helped institute an organizational culture that would distribute decision-making power to many other individuals. Situating Gandhi within the context of other projects to remake the rural economy and showing his reliance on others to enact his agenda is an important step in showing that the khadi economy enjoyed popular backing. If the khadi economy is simply a story about khadi, it is easy to dismiss its appeal. By bringing others into the picture—the abovementioned accountants, weaving masters, repair workers, etc.—we can link the history of the khadi economy to other histories, too.

---

[28] This is similar in some ways to how historians have dissembled the tradition-modern binary.
[29] Mehta 1992 and Prasad 2001 are exceptions.

Having said that, in tracing khadi's mobilization across a variety of contexts, this dissertation also shines new light on Gandhi and the larger body of economic thought and practice that bears his name. Long considered an innovative political thinker, he is rarely recognized as an astute economic one. My research demonstrates not only that Gandhi was an important economic thinker, but also that his economic imaginings had real-world consequences. Nowhere was this more evident than with khadi, which represented his most successful attempt to transform the Indian material landscape. Gandhian economic thought has been resurrected repeatedly around the world by social movements committed to the creation of a more egalitarian economic order. I show how this influential but underexamined economic tradition operated in practice and, in doing so, intervene in debates about the historical significance of Gandhism and the lessons it holds for those working to establish a more just and environmentally sustainable economy.

Textiles

The second body of historiography in which this dissertation intervenes is the literature on the Indian textile industry. In 1835, the Governor-General of India Lord William Bentinck reported that "the bones of the cotton weavers are bleaching the plains of India."[30] This evocative image of handloom weavers felled by forces beyond their control would become one of the primary frameworks through which a diverse array of people—Indian nationalists, foreign missionaries, and even some British colonial officials—understood changes in the organization of the Indian economy in the nineteenth and early twentieth centuries. The first generation of Indian nationalists, for example, made the handloom weaver a centerpiece of their critiques of

[30] Governor General's report of 1834-5. Karl Marx introduced Bentinck's words to a global audience in *Capital: A Critique of Political Economy*, Vol. I, trans. Ben Fowkes (London: Penguin Books, 1990 [1867]), 558.

colonial rule. British colonialism had destroyed handloom weaving and other indigenous industries, they argued, while obstructing the development of modern, machine-based ones. Partly as a result, handloom weavers and other native artisans had been forced to seek employment in the agricultural sector, increasing already high demographic pressures on the land. Indians' growing dependence on agriculture was dangerous, they continued, because it contributed to the further fragmentation of landholdings and exposed an ever-larger section of the population to the inherent vagaries of the agricultural calendar.[31] Although these early nationalists explored the impact of increased agriculturalization on a wide range of Indians, including small-scale farmers and agricultural laborers, their decision to begin their account of economic change with the handloom weaver established a precedent for subsequent analyses of the economy.

Many economic historians, too, have made the handloom weaver the central focus of their studies of economic change in nineteenth- and early-twentieth-century India. This is especially true of historians engaged in the so-called "deindustrialization debate," which hinged on the question of whether changing trade patterns, colonial economic policies, and competition from foreign industrial goods had a mostly negative impact on Indian industry. While many historians writing in the 1970s and 1980s agreed with early Indian nationalists that British rule had essentially deindustrialized India, subsequent historians challenged this assertion by demonstrating that some artisans not only survived but also thrived under colonial conditions.[32]

---

[31] Bipan Chandra, *The Rise and Growth of Economic Nationalism in India: Economic Policies of the Indian Leadership, 1880-1905* (New Delhi: Har-Anand, 2010), 59-62.

[32] Amiya Kumar Bagchi, "Deindustrialization in India in the Nineteenth Century: Some Theoretical Implications," *Journal of Development Studies* 22.1 (1978), 135-64 and Irfan Habib, "Colonization of the Indian Economy, 1757-1900," *Social Scientist* 8.3 (1975), 23-53. For a revisionist perspective, see Roy 1993; Tirthankar Roy, *Traditional Industry in the Economy of Colonial India* (Cambridge: Cambridge University Press, 1999); and Haynes 2012.

Even as they arrived at different conclusions, however, both sides of the debate shared at least one key assumption in common: that the handloom weaver constituted the natural starting point for an analysis of the effects of colonial rule on native industry. A logical decision in many respects—handloom weaving was the largest employer of Indians after agriculture—it has nonetheless proved confining insofar as it has encouraged historians to read industrial change through the figure of the handloom weaver rather than the many artisans who produced goods other than cloth.[33] This implicit weaver bias, as we might call it, has had a profound impact on how historians have theorized economic change and evaluated Indian and other responses to the damage wrought by colonial rule.

Though productive of many vital insights, a weaver-centric approach to economic history has also come at a cost. In addition to deemphasizing the experiences of non-weaver artisans, it has also established the weaver as the de facto framework through which other small-scale industrial producers are assessed. Nowhere is this so evident as in the case of the khadi economy, whose work force was composed almost entirely of handspinners. These handspinners, most of whom approached spinning as a form of supplementary employment to be pursued only when they were not performing agricultural labor, produced yarn of varying quality to be sold to khadi organizations for a fixed sum. Economic historians have sometimes questioned Gandhi's decision to make the hand-spinner, and not the handloom weaver, the centerpiece of his economic program, arguing that the rise of textile mills dedicated exclusively to spinning yarn had rendered handspinning obsolete.[34] In doing so, they have compared the hand-spinner

[33] A notable exception is Tirthankar Roy, *Traditional Industry in the Economy of Colonial India* (Cambridge: Cambridge University Press, 1999). Although most of his early work focused on the handloom weaver, his 1999 monograph also addressed the experiences of other artisans, including manufacturers of brassware, leather, and gold thread (*jari*).

[34] Haynes 2012 has noted in passing that the khadi program held little appeal to handloom weavers who rarely competed with imported textiles or used foreign yarn (233-4). Abigail McGowan has noted that Gandhi devalued

unfavorably to the handloom weaver, whose superior technology and ability to react quickly to changing market signals, they suggest, made it possible for him to pursue weaving as a full-time occupation. Indeed, it is likely that some of these historians would agree with one of Gandhi's harshest critics, who once accused him of attempting to perform "artificial respiration" on the spinning wheel.[35]

By making the spinner and not the weaver a significant figure in my dissertation, I show a different side of the small-scale Indian textile industry, one grounded in the experiences of rural agriculturists who worked at cloth production in their spare time. This move decenters the artisan from histories of small-scale industry while simultaneously showing that the khadi economy—a space long presumed to exist at a distance from artisanal industry—began to look more like the handloom, powerloom, and even large-scale mill industries during the early and mid-twentieth centuries. This is broadly in line with the experience of the handloom industry, which, as Haynes and Roy have shown so elegantly, came to share many characteristics in common with the large-scale mills, including high degrees of centralization, specialization, and commercialization.[36]

Why, then, has the history of the khadi economy existed at a remove from that of other histories of cloth production? In large part, this is a function of the decision to emphasize difference over similarity as well as an inability to see past the ostensibly "preindustrial hardware" employed by khadi organizations.[37] Narrating the history of the khadi economy alongside that of other textile-related economies reveals an important point, however. Haynes

---

"the role of master weavers capable of producing the finest cloth by insisting that anyone could learn spinning—and indeed, that it was so simple that everyone *should* learn it..." (197).

[35] S. Ramanathan with Pattabhi Sitharamayya and N. S. Varadachari, "The superstition of khadi: A discussion" (Erode: Kudi Arasu Publishing House, 1931), 3.

[36] Haynes 2012; Roy 1993; and Roy 1999. McGowan 2009 also makes this point (15-8).

[37] Bassett 2016 employs this phrase while arguing that Gandhi joined "preindustrial hardware" to "industrial values" (80-1).

has argued in the context of the western-Indian handloom and powerloom industries that the decisions made by weaver capitalists and laborers in the 1940s and 1950s played a key role in shaping the informal economy that emerged there.[38] While khadi organizations did not participate in the creation of the informal economy, they helped to create a separate but linked economy using many of the same tools as the subjects of Haynes' study.

Economic Modernization

This brings me to my final point. One of the central arguments of the dissertation is that the socio-material and knowledge practices discussed in the individual chapters gave rise not to one but to multiple modern economies. Khadi institutions did not resist the rise of a modern economy or attempt to construct its opposite, but instead, they worked to establish a modern economy of their own that deployed some of the same tools (standardized weights and measures, formal institutions, scientific management, new technologies) in different ways. This insight helps shed light on what was specific about the modern economy that arose in India. While we rightly take standardization, bureaucratization, and other processes discussed in this dissertation to be defining features of modern economic life, my research suggests that they can take many different forms. In attempting to create a modern economy that was nevertheless different from the modern economy that ultimately prevailed, khadi institutions offer a unique lens onto what exactly was at stake in the modern economy's creation.

Where then did the difference of the khadi economy lie? I suggest that it lay primarily in its economic imagination, which, for example, saw the potential for using accounting as a technique for avoiding the generation of profit and the creation of new weights and measures as

[38] Haynes 2012, 303-10.

tools for making conceptual knowledge available to a greater range of people. This is not to say that the materiality of weights and measures, accounting charts, and spinning wheels did not matter, however. On the contrary, it was the material world that made it possible for the economic imagination embedded in the khadi economy to flourish. In this, it shared much in common with other economic actors, who also recognized the power of standards, scientific management, and formal organization. I thus cast the creation of the modern economy in explicitly political terms. We can embrace formal institutions, weights, and finance and still arrive at a different modern economy than the one we got.

Chapter Outline

This dissertation is organized around four themes, each pertaining to a different aspect of the khadi economy. These themes—which range from the changing spatial relationship of agriculture to industry; to the rise of formal institutions and scientific management; to the establishment of standardized weights and measures; to technological development—are often taken to be constitutive elements of economic modernization. As such, they present the occasion to view the making of the modern Indian economy from multiple perspectives.

Chapter 1 examines the material and intellectual foundations of the khadi economy. It argues that khadi did not emerge primarily out of an overarching critique of capitalist modernity or a recognition of the symbolic importance of cloth in Indian society but rather as a response to a specific problem in the Indian economy. This problem—the existence of a large surplus labor force in rural India with little to no access to work for large portions of the year—was a product of changes in India's economic geography whereby agriculture and industry increasingly transpired in separate social spaces. Khadi institutions were not the only actors committed to

ameliorating rural unemployment and underemployment through the reestablishment of village industries programs, however. This chapter both situates the khadi economy within that larger milieu and shows how its approach to the surplus labor problem differed. Khadi institutions were guided by an agrarian imaginary that mostly excluded artisans, such as handloom weavers. In exploring the contours of that imaginary, I argue that decentering artisanry from studies of small-scale industry offers a new lens onto India's changing economic landscape.

Chapter 2 examines the role of business—as a set of institutions, ideas, and practices—in the constitution and operation of the khadi economy. It argues that the historiography's tendency to explore the relationship between business and khadi (as well as other Gandhian projects) through the lens of the capitalist classes has obscured the contributions of a substantially larger group of mid-level merchants, shopkeepers, and entrepreneurs to the everyday life of Gandhian enterprise. In placing business expertise at the center of a project designed to ameliorate rural inequality, khadi organizations carved out a prominent place for businesspeople in the moral and economic guidance of the nation. The chapter begins by considering the franchising system that connected distant khadi organizations to one another before exploring the careers of two khadi workers cum businesspeople who played a key role in formulating the administrative and sales guidelines that structured khadi organizations' day-to-day activities. These guidelines, which covered subjects such as making prices, account keeping, and exchanging khadi *hundis* (specialized credit instruments), were at once attempts to ensure standardization across the khadi economy and components of a larger moral vision. In fact, we can understand many of these guidelines as efforts to harness business as a tool for responsibly embedding the market in social relations. This chapter thus introduces another vision of business to place beside the much-maligned concept of trusteeship.

Chapter 3 examines the relationship between pedagogy, labor, and knowledge production in the khadi economy. It does so through an investigation of a range of projects designed to help the rural poor in overcoming their innumeracy. A lack of familiarity with mathematical concepts and methods (and, in some instances, an inability to count beyond a certain number), innumeracy negatively impacted villagers' lives in ways that illiteracy and other more familiar problems did not. While standard accounts of Gandhian constructive work portray it as primarily disciplining in its thrust, I move away from a focus on pedagogy as a disciplining project to a consideration of how pedagogical encounters transpired in practice. In doing so, I argue that the main aim of khadi organizations' pedagogical initiatives was not primarily, as some have suggested, to discipline the rural poor, but rather to create the conditions under which the rural poor could gain control over their own material and conceptual labor. This chapter shows that the economic actor valorized by khadi organizations was not simply a morally upright individual committed to bread labor but also an intellectually curious one who approached bread labor as a gateway to other forms of knowledge.

Chapter 4 traces the rise and fall of the khadi economy through the framework of technological development. The narrative thread is an account of a competition to develop a better spinning wheel that attracted contestants from across India and the world. Initiated by Gandhi in 1919, it did not conclude until after his death in 1948. The winner, referred to as the ambar charkha, became the focus of efforts to transform khadi work from a part-time to a full-time occupation and the village from an industrial backwater to the industrial engine of the Indian economy. These efforts made the ambar charkha appealing to an audience that extended beyond rank-and-file Gandhians. Members of the Indian planning establishment viewed the ambar charkha as a technology potentially capable of providing full-time employment at little

cost to the state. By moving away from well-trodden debates about whether Gandhi was pro- or anti-technology and toward a consideration of how his unique perspective on technology operated in practice, I show how changes in the charkha's material qualities opened new possibilities while foreclosing others. Ultimately, I argue that khadi organizations' greatest triumph—the unveiling of the ambar charkha—was simultaneously the occasion for their decline.

CHAPTER ONE:

The Agro-Industrial Divide

> Imagine a nation working only five hours per day on an average, and this not by choice but by force of circumstances, and you have a realistic picture of India. If the reader would visualize the picture, he must dismiss from his mind the busy fuss of the city life or the grinding fatigue of the factory life or the slavery of the plantation. These are but drops in the ocean of Indian humanity. If he would visualize the picture of the Indian skeleton, he must think of the eighty per cent of the population which is working its own fields, and which has practically no occupation for at least four months in the year, and which therefore lives on the borderland of starvation.[1]

Mohandas Karamchand Gandhi wrote these words in November 1921 shortly after one of his many trips to the Indian countryside. An urban creature more accustomed to London's high streets than village India's dirt roads, he had nevertheless taken a keen interest in rural life several years earlier, convinced that India's future lay in its villages, not its cities. The rural landscape Gandhi encountered on his trips would have given him little reason to feel optimistic about the country's future, however. As he noted on many occasions, the countryside was a bleak space afflicted by acute poverty, crippling debt, widespread landlessness, agrarian distress, and even starvation. To make matters worse, a very large percentage of the rural population had little to no work for large portions of the year, a condition Gandhi referred to as "enforced idleness."[2] "Enforced idleness" in rural areas, he explained, was perhaps the most pressing issue facing the Indian economy: "Without some supplementary occupation to sustain him, the agriculturist cannot live."[3]

---

[1] M. K. Gandhi, "Cooperation," *Young India* (3 Nov. 1921), *CWMG* Vol. 21, 391.
[2] *Annual Report: 1926-27* (Ahmedabad: The All-India Spinners' Association, 1927), 1.
[3] Gandhi, Cooperation," 391.

This chapter examines the material and intellectual foundations of the khadi economy. It argues that khadi did not emerge primarily out of an overarching critique of capitalist modernity or a recognition of the symbolic importance of cloth in Indian society but rather as a response to a specific problem in the Indian economy. This problem—the existence of a large surplus labor force in rural India with little to no access to work for large portions of the year—was a product of changes in India's economic geography whereby agriculture and industry increasingly transpired in separate social spaces. Reframing khadi as a response to the surplus labor problem helps us understand what was at stake in its revival. While scholars such as Partha Chatterjee have suggested that Gandhi's arguments about the economic necessity of khadi were "practical" ones designed to convince those who did not share his "moral presuppositions," I situate economic necessity at the very heart of the khadi project.[4] At a time when the colonial state adopted a hands-off approach to agrarian crisis and land reform seemed a remote possibility, khadi represented both a plausible short-term fix to the surplus labor problem and the centerpiece of a larger vision to reshape the Indian economy.

The Agro-Industrial Divide

Spatial considerations have recently played an important role in studies of the Indian economy and Indian economic thought. Most notably, Manu Goswami has argued that India began to emerge as a territorially bounded national space and economy in the final third of the nineteenth century. She has further shown how "national economy" became the conceptual category through which Indian nationalists sought to make sense of the deterritorializing effects of British colonial rule and, in turn, to reterritorialize the Indian economy.[5] When the new field

[4] *Nationalist Thought and the Colonial World: A Derivative Discourse* (London: Zed Books, 1993), 118.
[5] Goswami 2004.

of Indian economics arose in the early twentieth century, it made the spatial unit of the village one of its primary objects of analysis. According to one of the field's leading practitioners, Radhakamal Mukherjee, the village had been the worst casualty of colonial rule, which had redirected scarce economic resources from rural areas to urban spaces.[6] The spatial categories Mukherjee employed—village-city, on the one hand, and rural-urban, on the other—have structured many subsequent analyses of the Indian economy.[7] Indeed, in the popular and scholarly literature alike, Gandhi is indissolubly tied to the village and, by extension, to a vision of the economy in which the needs of the village take precedence over those of the city.[8]

Without disputing the fundamental significance of the spatial categories utilized by Mukherjee and later by historians as well, this section proposes paying closer attention to another set of categories: agriculture and industry. "Agriculture" and "industry" refer not so much to a particular spatial location as they do to a set of economic activities that are located in space. Though agriculture-industry sometimes maps onto the village-city and, especially, the rural-urban dyads, the fit is imperfect at best. Prior to the second half of the nineteenth century, a large percentage of industrial activity had been located in agrarian areas, where it enjoyed a largely complementary relationship to agriculture. By the beginning of the twentieth century, however, industry and agriculture increasingly transpired at a remove from one another as a result of the phenomenon I have termed the agro-industrial divide. Before explaining how the divide functioned as a key moment in the history of Gandhian economics, it is useful to investigate the

---

[6] Mukherjee has been credited with prefiguring some of Gandhi's arguments. His best-known work is probably *The Foundations of Indian Economics* (London: Longmans Green, 1916).
[7] Rajnarayan Chandavarkar critiques what he terms the "implicit and natural dualism" that once structured studies of the colonial economy, particularly the assumption that the urban, industrial economy and rural, agrarian economy were separate from one another, in *The Origins of Industrial Capitalism: Business Strategies and the Working Classes in Bombay, 1900-1940* (Cambridge: Cambridge University Press, 1994), 1-2.
[8] For a survey of this literature, see Jan Breman, "The Village in Focus," in eds. Jan Breman, Peter Kloos, and Ashwani Saith, *The Village in Asia Revisited* (Delhi: Oxford University Press, 1997), 15-75.

circumstances surrounding the divide's production and to determine what a focus on agriculture and industry can show us that a focus on other spatial categories cannot.

The term "agrarian" is a good starting point insofar as it is often conflated with one of the terms I have already introduced: "agriculture" or "agricultural." Following David Ludden, we can define "agriculture" as "the social organisation of physical powers to produce organic material for human use." "Agriculture" thus encompasses a range of activities: "not only farming but also animal husbandry, pastoralism, fishing, and harvesting the forest."[9] "Agrarian" refers to an even broader set of concerns: "A region or social space is agrarian not because farming forms the material basis for other activities, but rather because a preponderance of social activity engages agriculture in some way or another during seasons of cultivation and circulation."[10]

The distinction between "agricultural" and "agrarian" is important, since it alerts us to the fact that, for much of human history, agrarian spaces have been home to both agricultural and industrial activities. In fact, the nature of the agricultural calendar is such that land-poor peasants and agricultural laborers, in particular, have frequently turned to industry to sustain themselves at certain times of year. After all, crops have a life cycle of their own that, after a certain point, cannot be speeded up by additional labor. While better-off peasants were sometimes able to maintain themselves during the agricultural offseason using stored up foodgrains or other working capital, most had to borrow from the local moneylender, thus entering into a cycle of debt and dependency from which few would ever emerge. Rural industry, which could be practiced close to home using minimal capital inputs, held out the promise of a third way.[11] Rarely remunerative enough to serve as a full-time occupation, it nevertheless generated a

[9] David Ludden, *An Agrarian History of South Asia* (Cambridge: Cambridge University Press, 1999), 18.
[10] Ludden 1999, 31.
[11] Shahid Amin provides a useful overview of the agrarian cycle in *Sugarcane and Sugar in Gorakhpur: An Inquiry into Peasant Production for Capitalist Enterprise in Colonial India* (Delhi: Oxford University Press, 1984), 64-8.

modest income at lean times of year and/or presented the opportunity to self-provision outside of the market.[12] This is not to say that part-time industrial work was a panacea for struggling agriculturists but rather that it was sometimes the only safety net available to them.

The nature of colonial record keeping policies makes it difficult to determine just how many agrarian households worked at some type of rural industry or what percentage of their total labor time they devoted to it. This is because colonial surveys and censuses tended to ignore supplementary occupations, reporting only primary occupations instead. For example, an agriculturist who derived part of his income from weaving or pressing oil appeared in the census as an agriculturist rather than an agriculturist who was also a weaver or an oil presser. In foregoing accuracy for statistical neatness, colonial record keepers muddied the historical record. Still, the ethnographic evidence compiled by a range of colonial and non-colonial sources suggests that rural industry was a common part-time pursuit for agriculturists for much of the nineteenth century.[13] Historians generally concur, noting that in many parts of India, women of virtually every class performed handspinning and food processing work in their spare time. Food processing encompassed a range of industries, including grain husking, rice pounding, and flour grinding.[14] Male agriculturists worked at a number of industrial activities as well, especially

[12] For example, Chandavarkar 1994, 131-2 and Samita Sen, *Women and Labour in Late Colonial India: The Bengal Jute Industry* (Cambridge: Cambridge University Press, 1999), 80.
[13] Francis Buchanan, *The History, Antiquities, Topography, and Statistics of Eastern India: Comprising the Districts of Behar, Shahabad, Bhagalpoor, Goruckpoor, Dinajpoor, Purniya, Rungpoor, and Assam, in relation to their geology, mineralogy, botany, agriculture, commerce, manufactures, fine arts, population, religion, education, statistics, etc.*, R. Montgomery Martin, ed. (London: Wm. H. Allen, 1838) is one example.
[14] Tirthankar Roy, *Rethinking Economic Change in India: Labour and Livelihood* (London: Routledge, 2005), 160-1; Prasannan Parthasarathi, *The Transition to a Colonial Economy: Weavers, Merchants and Kings in South India, 1720-1800* (Cambridge: Cambridge University Press, 2001), 57-9; Michelle Maskiell, "Embroidering the Past: Phulkari Textiles and Gendered Work as 'Tradition' and 'Heritage' in Colonial and Contemporary Punjab," *The Journal of Asian Studies* 58, no. 2 (May 1999), 369; Sen 1999, 33, 76-80; and Hari Ranjan Ghosal, *Economic Transition in the Bengal Presidency (1793-1833)* (Patna: Patna University, 1950), 8-9.

cotton weaving, sugar manufacturing, and oil pressing. While some migrated short distances to pursue this work, most of them stayed relatively close to home.[15]

This state of affairs began to change in the late nineteenth and early twentieth centuries as the agro-industrial divide took hold around India. The product of a diverse array of changes sweeping the countryside and the capitalist world economy, the divide was attributable to three developments, in particular. The first of these was the decline of many forms of rural industry, starting in the second half of the nineteenth century. A combination of changing trade patterns, colonial economic policies, and competition from foreign industrial goods decimated many such industries.[16] The establishment of textile mills, jute factories, and other large-scale industrial concerns in major Indian cities struck a fatal blow against others.[17] Funded by mercantile capital, the large-scale industries that arose in Bombay, Ahmedabad, and Calcutta in the final third of the nineteenth century were the second development.[18] Displaced artisans, along with landless and land-poor peasants, migrated to these cities and, later, smaller urban centers in search of factory work.[19] Finally, certain sections of the artisanry adapted to the changed economic landscape by seeking out new technologies and markets, and creating ever more specialized production lines.[20] Artisanry was already a predominantly urban occupation but became even more so at this time as

---

[15] Tirthankar Roy, *Traditional Industry in the Economy of Colonial India* (Cambridge: Cambridge University Press, 1999), 75 and 82-3; and Amin 1984.
[16] Amiya Kumar Bagchi, "Deindustrialization in India in the Nineteenth Century: Some Theoretical Implications," *Journal of Development Studies* 22.1 (1978), 135-64 and Irfan Habib, "Colonization of the Indian Economy, 1757-1900," *Social Scientist* 8.3 (1975), 23-53. For a slightly different perspective, see Tirthankar Roy, *Artisans and Industrialization: Indian Weaving in the Twentieth Century* (Delhi: Oxford University Press, 1993); Roy 1999; and Douglas Haynes, *Small Town Capitalism in Western India: Artisans, Merchants, and the Making of the Informal Economy, 1870-1960* (Cambridge: Cambridge University Press, 2012).
[17] B. R. Tomlinson, *The Economy of Modern India, 1860-1970* (Cambridge: Cambridge University Press, 1996), 106-8.
[18] Tomlinson 1996, 109-12 and Chandavarkar 1994, 64-5.
[19] Ahmedabad and Calcutta initially utilized a local labor force but began importing labor from greater distances around the turn of the twentieth century. Sen 1999, 24-6; Tomlinson 1996, 114; and Chandavarkar 1994, 129 and 146.
[20] Haynes 2012, 243-50; Roy 1999, 43; and Roy 1993 5.

some rural artisans abandoned their profession to join the agricultural labor market and others migrated to small towns to avoid a similar fate.[21] These three changes—the decline of many forms of rural industry, the establishment of large-scale industry in urban centers, and the growing urbanization of artisanry—combined to alter industry's spatial location. This is not to say that industry exited the countryside entirely but rather that, by the early twentieth century, a much smaller percentage of industry transpired in rural spaces than ever before.

On the level of the economy as a whole, then, rural industry was becoming something of a misnomer. Once a ubiquitous feature of agrarian environments, it was unequivocally on the decline—not yet extinct but growing scarcer day-by-day. The anthropologist Mary Douglas has referred to dirt as "matter out of place."[22] Similarly, rural industry had become "industry out of place," that is, industry where it was not supposed to be. I will have cause in later chapters to discuss the discomfort with which the first generation of development economists treated the category of rural industry. Many of them wrote rural industry out of their models altogether, operating instead as though urban areas were industry's natural location.[23] Some of Gandhi's contemporaries would adopt a similar attitude, approaching rural industry's decline not as a problem to be solved but as a necessary, if painful, step on the road to economic development.[24] Economic historians have occasionally grappled with the problem of rural industry but have more often given it short shrift by subsuming it under the more general category of "industry." This is especially true of those historians who have investigated how small-scale industrial

[21] Haynes 2012, 56-7 and 74-5; Roy 1999, 45-6.
[22] *Purity and Danger: An Analysis of Concepts of Pollution and Taboo* (New York: Praeger, 1966).
[23] The paradigmatic example of this is W. Arthur Lewis, "Economic Development with Unlimited Supply of Labor," *The Manchester School* 22, no. 2 (May 1954), 139-91. Sanyal 2014 provides an excellent analysis of this in 144-9.
[24] Jawaharlal Nehru is one example of this line of thought.

producers successfully adapted to economic change.[25] In assigning more importance to the overall health of Indian industry and less importance to its health in particular locations, they run the risk of treating industrial change as an exclusively *industrial* problem and not as a simultaneously *agrarian* one. By contrast, the framework I employ here—that of the agro-industrial divide—is designed to focus our attention on both the agricultural and industrial dimensions of agrarian change.

The Peasant-Industrial Producer

The "where" question is our point of entry into Gandhian economics, which, I suggest, was first formulated in the early 1920s to grapple with the spatial dislocations precipitated by the agro-industrial divide. Not coincidentally, this was also the moment at which the khadi economy, the name I have assigned to the space in which a diverse array of organizations worked to reestablish khadi production in rural areas, began to acquire an institutional home outside of the *ashram*. A residential community intended as an experiment in utopian living, the ashram was the space in which Gandhi and some of his closest followers lived and worked. Gandhi established his first ashrams in South Africa, followed by another one in western India in 1917. Named Sabarmati Ashram for its location on the banks of the Sabarmati River, this latter ashram was the site where the khadi economy was born.[26] Gandhi's elevation to head of India's leading nationalist organization, the Indian National Congress (INC), in 1920 provided him with the opportunity to establish khadi work on a broader institutional footing. At his urging, the INC

[25] This is true of both sides of the so-called "deindustrialization" debate, which have generally tracked economic change through the figure of the urban artisan. Leading statements of the "deindustrialization thesis" are Bagchi 1978 and Habib 1975. Leading revisionist statements are Roy 1993, Roy 1999, and Haynes 2012.
[26] Gandhi discusses the early days of the khadi economy in *An Autobiography: Or the Story of My Experiments with Truth*, Trans. Mahadev Desai (Ahmedabad: Navajivan Publishing House, 1927), 450-7.

opened a khadi department in 1922, followed by a semi-independent body called the All India Khadi Board in 1924. Both the department and the board liaised with provincial- and district-level INC offices to make khadi production a central focus of the INC agenda. These coordination efforts bore mixed fruit and so, in September 1925, the INC transferred responsibility for khadi work to an independent organization named the All India Spinners Association (AISA).[27] Gandhi headed up this new organization, and some of the INC's leading lights, including Jawaharlal Nehru and Rajendra Prasad, sat on its executive board.[28]

AISA dedicated its first decade to two tasks: increasing khadi production and consumption, on the one hand, and justifying its existence to both internal and external audiences, on the other. As a corollary to this second task, it compiled hundreds of pages of institutional records detailing the decisions made at monthly (sometimes weekly) meetings of the executive board, along with summaries of the operations of each of its provincial branches.[29] It also published dozens of pamphlets and manuals for circulation to khadi institutions and the public. I have located and reviewed approximately thirty of them, which spanned a variety of genres, including annual reports, political-economic manifestos, and technical manuals.[30] Though diffuse in their concerns, these institutional records and publications regularly circle back to a single issue: the spatial reconfiguration of the Indian economy I have termed the agro-industrial divide.

---

[27] Trivedi discusses these institutions at length in Trivedi 2007, chapter 1.
[28] The remaining members were Shaukat Ali, Jamnalal Bajaj, Shankarlal Banker, Satishchandra Dasgupta, Gangadharrao Deshpande, Maganlal Gandhi, Lakshmidas Purushottam, C. Rajagopalachari, and Konda Venkatappaya. All India Spinners' Association, *Annual Report: 1926-27* (Ahmedabad: The All-India Spinners' Association, 1927), 55.
[29] These records can be found in Akhil Bharat Charkha Sangh Papers/All India Spinners Association Papers (hereafter cited as AISA Papers), Nehru Memorial Museum and Library (hereafter cited as NMML). The majority of these records are written in Hindi.
[30] A comprehensive list of these publications is included at the end of the chapter.

Consider the 235-page essay co-authored by S. V. Puntambekar, a professor of history and politics at Benares Hindu University in the United Provinces (UP), and N. S. Varadachari, a law graduate from South India who would go on to become editor of Gandhi's weekly journal *Young India*. This essay, titled *Hand-Spinning and Hand-Weaving*, was the winner of a 1925 competition for "the best essay on spinning" as determined by a committee comprised of M. K. Gandhi, Maganlal Gandhi, Shankarlal Banker, and Ambalal Sarabhai. Sponsored by the INC Joint Treasurer Revashankar Jagjivan Mehta, the competition attracted sixty-eight entries from across India and carried a Rs. 1,000 prize.[31] AISA published the winning essay in 1926 with a foreword written by M. K. Gandhi. In it, Gandhi commended Puntambekar and Varadachari for convincingly demonstrating that handspinning constituted the best supplementary occupation for the millions of Indians who had no work for at least four months of the year.[32]

We can understand *Hand-Spinning and Hand-Weaving* not merely as a statement of the authors' opinion but also as an institutionally sanctioned, and in some ways co-authored, document. This is partly because of the nature of the competition itself. The search committee, composed of leading members of the AISA executive board, had previously announced a set of specifications the winning essay would have to meet. In selecting Puntambekar and Varadachari's essay and in recommending its publication to AISA's publishing wing, they lent it their institutional seal of approval. And, finally, Puntambekar and Varadachari drew extensively upon publications issued by AISA and its predecessor organizations when preparing their essay. *Hand-Spinning and Hand-Weaving*, in turn, was often cited in subsequent AISA publications, further solidifying its position in a rapidly expanding canon.[33]

---

[31] Rs. 1,000 would have been a very large sum at a time when the average annual income was approximately Rs. 50.
[32] S.V. Puntambekar and N.S. Varadachari, *Hand-Spinning and Hand-Weaving: An Essay* (Ahmedabad: All India Spinners' Association, 1926), 1-2.
[33] Putambekar and Varadachari 1926, bibliography.

Now for the content of the essay itself. Though ostensibly a history of the changing fortunes of the Indian handspinning and handweaving industries, Puntambekar and Varadachari's text is simultaneously an account of the emergence of the agro-industrial divide. The authors open their essay with a discussion of spinning and other village industries, which, they argue, were ubiquitous in the countryside prior to the arrival of the British. In their words, at the beginning of the nineteenth century, "the vast majority of homes, possibly not even one excluded, took to spinning as an occupation to fill idle hours and supplemented their agricultural and other incomes with earnings thereby." "The spinners together with the carders, cotton retailers and the hand-ginners covered a seventh part of the population. The weavers were not less numerous if we take account of them along with their families."[34]

Puntambekar and Varadachari substantiated their assertions with data obtained from a wide variety of sources, including an economic survey of the eastern Indian provinces of Bengal and Bihar conducted by the Scottish physician and English East India Company (EIC) employee Francis Buchanan at the turn of the nineteenth century.[35] Sprawling in its remit, Buchanan's survey purported to provide a comprehensive overview of eastern India's economic and social geography at the very moment the British had begun to consolidate their control over the subcontinent. Of all the information Buchanan had compiled, Puntambekar and Varadachari chose to emphasize one point in particular: that most spinners were women who plied the *charkha,* or spinning wheel, only in their spare time but who were nevertheless well compensated for their labors. These women, paraphrased Puntambekar and Varadachari, "brought no little addition to the home; for, their earnings usually varied from Rs. 2 to 4 a year per spindle, which would, measured in present money values, amount to Rs. 10 to 20." Those

[34] *Ibid*, 72-3.
[35] This survey was conducted between 1807 and 1814.

who worked at spinning full-time "made as much as 11 ½ to 12 annas a month or nearly Rs. 9 a year, which again rendered into present money values would represent Rs. 45 or thereabout."[36] By way of comparison, the average annual household income in 1926 was about Rs. 50.[37] To Buchanan's findings, Puntambekar and Varadachari added those of the British historian Robert Orme, who was appointed official historiographer to the EIC in 1769. Writing in 1782, Orme estimated that half of all Indians derived a portion of their livelihood from cotton manufacture: "Spinning and weaving were the lightest tasks which a man could be set to and the numbers that did nothing else in the country were exceeding." "While weaving as a pursuit was held in high esteem and was seen to be prosperous, spinning kept pace with it being universal and widespread."[38]

British "terrorism" destroyed this state of affairs, however, forcing the vast majority of rural dwellers to give up their industrial pursuits.[39] Puntambekar and Varadachari grouped a number of different practices under the heading of "terrorism," including the imposition of heavy import duties on Indian manufactures in Britain, the reconfiguration of the subcontinent as an open market for British industrial goods, and restrictions placed on the free movement of artisans.[40] Some artisans, they continued, had even cut off their own thumbs in order to avoid becoming slaves to the British.[41]

---

[36] Puntambekar and Varadachari 1926, 70-3.
[37] All India Spinners' Association, *Khadi Guide: 1927* (Ahmedabad: The All India Spinners' Association, 1927), 7.
[38] Quoted in Puntambekar and Varadachari, 68-70. Orme was the author of the *History of the Military Transactions of the British Nation in Indostan*, first published in 1763 and 1778, as well as *Historical Fragments of the Mogul Empire, the Morattoes and English Concerns in Indostan from 1659* (1782).
[39] Puntambekar and Varadachari 1926, 68.
[40] *Ibid*, 94-5.
[41] *Ibid*, 68. The story of artisans, usually weavers, cutting off their thumbs to avoid becoming subordinates of the EIC is a common one. Puntambekar and Varadchari are unusual in that they credit silk winders, and not weavers, with having taken this drastic step.

Puntambekar and Varadachari's concern for the artisan would have been familiar to many of their contemporaries. After all, starting in the late nineteenth century, elite Indians and colonial officials alike tracked industrial change through the figure of the artisan.[42] A specialized worker in possession of an exclusive, often hereditary, cultural tradition, the artisan functioned for the former as an emblem of the destructive impact of colonial rule on India and, for the latter, as a symbol of Indian backwardness.[43] The artisan has become a key trope in the scholarly literature as well, especially for those historians concerned with the question of whether colonialism "deindustrialized" the Indian economy.[44] But Puntambekar and Varadachari do not stick with the artisan for very long, instead quickly transitioning to a discussion of another, less familiar figure.

That figure is the peasant who was simultaneously an industrial producer, that is, the peasant who worked at rural industry in her spare time. Peasant-industrial producers were far more numerous than artisans, yet attracted considerably less attention from their contemporaries.[45] They are also all but absent from conventional accounts of industrialization, which tend to regard the artisan as the small-scale producer par excellence.[46] This is an unfortunate oversight since peasant-industrial producers were uniquely vulnerable to the divide's effects, straddling as they did the twin worlds of agriculture and industry. While they had

---

[42] Abigail McGowan, *Crafting the Nation in Colonial India* (New York: Palgrave MacMillan, 2009) shows how the artisan became a central figure in struggles by elite Indians and British colonial officials "to establish authority over the lower classes as well as the state itself" in the late nineteenth century (4).

[43] Some colonial officials also viewed artisans as living embodiments of Indian tradition, to be preserved and perhaps even modernized. McGowan discusses this strain of thought in 2009, chapters 3 and 4. Arindam Dutta also discusses how artisans became a key trope in British efforts to render India more productive in *The Bureaucracy of Beauty: Design in the Age of its Global Reproducibility* (New York: Routledge, 2007).

[44] Bagchi 1978, Habib 1975, Roy 1993, Roy 1999, and Haynes 2012.

[45] It is hard to arrive at even an educated guess regarding the number of peasant-industrial producers in nineteenth- and early-twentieth century India. For a discussion of the changing composition of Indian industry as peasant-industrial producers exited the workforce, see Roy 2005, 121-3. This discussion and the accompanying quantitative analysis strongly suggest that peasant-industrial producers once accounted for a very large percentage of the industrial workforce.

[46] Bagchi 1978, Habib 1975, Roy 1993, Roy 1999, and Haynes 2012.

previously hedged their bets by supplementing agricultural work with industrial pursuits, the divide pulled them in two different directions, forcing them to choose one or the other. Some fell back on work as agricultural laborers, while others journeyed to faraway urban areas in search of industrial employment. Still others worked sometimes at agriculture and sometimes at industry, but never in the same space as had been the case previously.

Returning to Puntambekar and Varadachari, the central protagonist of the second half of their essay is the peasant-industrial producer confronted with two equally unappealing options: to enter the agricultural labor market or to migrate to the city in the hope of securing factory employment. Peasant-industrial producers did not previously have to decide between agriculture and industry, the authors suggest, but with "none of their old subsidiary occupations left to them," they had little choice. To make matters worse, the 1901 census had recorded a large increase in the number of agricultural laborers, while the 1921 census revealed that the urban manufacturing sector had not "been able to absorb a tenth part of the population" displaced by rural industry's decline. Instead, agriculture continued to support seventy-one percent of the Indian population, while "organized industry" supported only one percent. Partly as a result, a new generation of peasant-industrial producers increasingly traveled back and forth between the village and the city, sometimes working as factory or casual labor in urban areas, other times returning "home" to meet family or to help with the harvest.[47] These occasional visits reinforced the essential interconnectedness of industry and agriculture while simultaneously emphasizing the growing spatial distance between the two.

Of course, Puntambekar and Varadachari did not use the term "peasant-industrial producer" to refer to this new class of Indians. Instead, they (along with authors of other AISA-

[47] Puntambekar and Varadachari, 133-4.

sanctioned literature) employed a number of other terms, including "the unemployed and underemployed masses," "idle hands," "the poor villagers of India," "the poor masses of India," and, in at least one instance, "surplus people."[48] This latter phrase is especially important, since it allows us to connect the changing fortunes of the peasant-industrial producer to yet another important development in the history of late colonial India: the swelling of the ranks of the surplus labor force.

In contrast to these thinkers, however, khadi institutions regarded the destruction of rural industry as an unequivocal evil.[49] "Without cottage industries," Gandhi once remarked, "the Indian farmer is poor. He cannot maintain himself through the fruit of the land alone. He is in need of some industry in order to make up this shortfall."[50] Or, on another occasion: "The destruction of the Indian farmer is assured in the absence of some type of home industry. He cannot fill his stomach through farming alone. He also needs some industry to support him."[51] And finally: "Farming and spinning [once the most ubiquitous form of rural industry] are the Indian national body's two lungs. It is essential to protect them from decay."[52] Gandhi employed cottage industry, home industry, and village industry as synonyms for the more general category of rural industry, the revitalization of which, he claimed, was the most pressing problem facing India.[53]

---

[48] Respectively, All India Spinners' Association, *Khadi Guide: 1927* (Ahmedabad: The All India Spinners' Association, 1927), 4-6; All India Spinners' Association, *Annual Report: 1927-28* (Ahmedabad: The All India Spinners' Association, 1928), 25; Trustee Mandal, June 20-22, 1941, AISA Papers, NMML; and Puntambekar and Varadachari 1926, 3.

[49] Sanyal 2014, 118-9. See especially Vladimir Ilyich Lenin, *The Development of Capitalism in Russia: The Process of the Formation of a Home Market for Large-Scale Industry* (Moscow: Foreign Languages Publishing House, 1956). Originally published in 1918. See also Bhikhu Parekh, "Nehru and the National Philosophy of India," *Economic and Political Weekly* (Jan. 5-12, 1991): 35-48. Both Lenin and Nehru acknowledged the large-scale violence entailed in the destruction of rural industry but regarded it as a necessary stage in the development process.

[50] Quoted in Ram Gopal Gupta, *Khaddar* (Lucknow: 1941), 15. Translated from Hindi.

[51] Quoted in Akhil Bharat Charkha Sangh, *Marg Suchika*, Part 1 (Wardha: Akhil Bharat Charkha Sangh, 1942) 17. Translated from Hindi. First published in a 1919 letter.

[52] Quoted in Gupta, *Khaddar*, 16. Translated from Hindi.

[53] Puntambekar and Varadachari, 126-7.

Consider Puntambekar and Varadachari's response to one economist's proposal that unemployed Madrasis (residents of Madras state) be sent to Burma to take up industrial work. They compared him to the "mad Emperor" Muhammad bin Tughlaq, who in 1327 ordered the residents of the capital city Delhi to leave their homes and join him several hundred miles away in another city. Tughlaq, they noted with no small measure of satisfaction, had been forced to rescind his order in the face of the abject failure of the new city to thrive.[54]

In some regards, these Gandhian economists merely extended the critique of classical political economy that Indian nationalists had made a generation or two before. If those nationalists had argued that the Indian nation and not the British empire should serve as the natural site of capital accumulation, Gandhian economists were arguing that the Indian nation was still so expansive a space as to reproduce some of the dislocating effects associated with colonialism.[55] But in another regard, they were taking this critique in an entirely different direction by identifying the agro-industrial divide, and not British colonialism, as the most pernicious influence on the Indian economy. The toolkit required to address the former would be very different from the one Indian nationalists had developed to challenge colonial rule.

Restoring Rural Industry to Place

Another way of getting at the constitutive relationship between the agro-industrial divide and Gandhian economics is to examine how the latter operated in practice. If the previous section provided an overview of the theoretical apparatus the first generation of khadi institutions

[54] Puntambekar and Varadachari wrote that the economist's suggestion "almost reminds one of the transfer of populations which one mad Emperor once proposed as between Delhi and Doulatabad" (156). While accounts written by contemporary historians such as Ibn Battuta and Ziauddin Barani reported that all of Delhi's residents were compelled to leave (in Barani's words, "Not a cat or dog was left"), recent histories have painted a more nuanced picture. Regardless, Tughlaq shifted the capital back to Delhi in 1335.
[55] Goswami 2004, 11-2.

constructed to guide their work, this section provides an overview of its material counterpart. It is by now well known that Gandhi and his colleagues attempted to turn India into a nation of spinners. That is, they encouraged all Indians, particularly those resident in rural areas, to ply the charkha daily and to have their clothes manufactured out of its yarn. Ramanathan spoke for many Indians when he dismissed the khadi economy in these terms: "The spinning wheel is dead, in fact it died some time before Mahatma Gandhi made the attempt ten years ago to give it artificial respiration. Its proper place is the museum and you can no more give it life than you can give life to the many dry bones that fill the museum."[56] Interpretations such as this one hinge on the flawed assumption that khadi was primarily an intervention in the industrial economy. The historiographical literature is rife with similar assertions, most of which firmly, if charitably, conclude that Gandhi's efforts to sway Indian industrial producers to his idiosyncratic vision of development were less than successful.[57] While certainly true, that is largely beside the point, for as I have indicated previously, khadi was above all an intervention in the agrarian economy. More specifically, it was an attempt to ameliorate some of the worst effects of the agro-industrial divide.

Handspinning is usually portrayed as a low-skilled industrial occupation performed by the most menial members of rural society.[58] By contrast, I understand it as an agro-industry, not in the popular sense of agriculture developed along industrial lines, but instead as an activity that combines elements of both industry and agriculture, thus blurring the already hazy boundaries between the two. Handspinning is one of many intermediate stages in a lengthy production

[56] Ramanathan 1931, 3. "Mahatma" is an honorific that is literally translated as "great soul." Many Indians, even those who considered themselves opponents of Gandhi, attached it to the beginning of Gandhi's name.
[57] For example, Claude Markovits, *Indian Business and Nationalist Politics, 1931-39: The Indigenous Capitalist Class and the Rise of the Congress Party* (Cambridge: Cambridge University Press, 1985), 189; and Haynes 2012, 233-4.
[58] Roy 2005, 160-1 and Roy 1999, 19.

process generally culminating in the manufacture of an article of clothing. Material inputs change form at each stage in the process as cotton fibers are transformed into thread and thread into cloth. The first stage is clearly agricultural, pertaining as it does to cotton cultivation, i.e. the sowing of cottonseeds, tending of cotton plants, and harvesting of cotton fibers. The next stages combine elements of both agriculture and industry, however. Cotton, the fiber removed from around the seeds of the cotton plant, must be cleansed of its impurities through an activity known as ginning. Sometimes performed by the harvesters themselves, other times by a specialized group of individuals stationed at a hand-powered or mechanized machine, ginning separates dirt, seeds, and other waste products from the fibers. Once ginned, cotton has also to be carded, its fibers disentangled from one another and arranged in parallel rows. Ginners employed by khadi organizations used, first, their fingers and, second, a sharp-toothed comb to perform this operation, shaping previously unruly fibers into neat bundles called slivers. Large-scale textile mills, by contrast, employed carding machines, some of them mechanized, others of them operated by hand. Carding could transpire in a variety of locations: the fields, the village hut, a seasonal processing unit, a permanent processing unit, or the wing of an urban factory. In each instance, laborers turned an agricultural good (cotton) into an agro-industrial good (cotton slivers). They then fed these slivers into a spinning wheel to produce thread. That thread, in turn, would be twisted, arranged into new bundles, strengthened through the application of a substance called sizing, and, finally, attached to the weaver's loom. Washing, and sometimes dyeing, followed, usually marking the final stage in the cloth production process.[59]

[59] This description of the cloth production process is drawn from a number of sources, including Prabhakar Diwan, *Katne ki Kala* (Raipur: Sunderlal Tripathi, 1935); Satyan, *Otna, Tunna, v Dhunna* (Sevagram: Hindustani Talimi Sangh, 1940); and Keshav Deodhar, *Dhanush Takua* (Sevagram: Khadi Vidyalay, 1944).

If conducted in relatively close proximity to the cotton fields, handspinning functioned more or less as an extension of the agricultural labor that produced raw cotton. In fact, it makes little sense to draw a sharp distinction between "agricultural" and "industrial" work in such a setting, except perhaps on the basis of their occasionally divergent temporalities.[60] If conducted at a distance from the cotton fields, spinning no longer functioned as an extension of agricultural labor, however. Instead, it became a different order of activity and thus separate from many of the tasks that proceeded it in the production process.

To restate the point slightly differently, spatial division in the form of the agro-industrial divide produced a distinction between agricultural and industrial work. We saw this previously in the case of the peasant-industrial producer forced to choose between agricultural and industrial pursuits. We see it again in the case of handspinning, which had been rendered virtually obsolete by the turn of the twentieth century because of the rise of machine-powered spinning mills.[61] Handspinning's decline, when accompanied by the emergence of spinning mills in urban areas, had the effect of disaggregating spinning into agricultural and industrial components. As we will

[60] Whereas intensive agricultural work could transpire at only certain times of year, industrial work could occur at virtually any time, although it tended to pick up steam in the agricultural offseason.

[61] Handspinning began to decline at slightly different times in different parts of India. Tomlinson estimates that handspun yarn supplied fifty percent of the domestic market by weight in the early 1880s, twenty-five percent in 1900, eighteen percent prior to World War I, and less than ten percent from the late 1920s (Tomlinson 1996, 106-8). In the context of Bengal, Hari Ranjan Ghosal asserts that handspinners' position declined from the 1820s (Ghosal, *Economic Transition in the Bengal Presidency (1793-1833)* (Patna: Patna University, 1950), 44). In the context of western India, Haynes asserts that handspinning supplied an important supplementary cash income to rural and urban dwellers until the mid-19th century (Haynes 2012, 45-7). In an earlier publication, he concluded that most handloom weavers began to use yarn from European or Indian spinning mills in the early- to mid-19th century (Haynes 1991, 179). In the context of the Central Provinces, Peter Harnetty argues that millspun yarn was pervasive by the final quarter of the nineteenth centuries (Harnetty, "'Deindustrialization' Revisited: The Handloom Weavers of the Central Provinces of India, c. 1800-1947," *Modern Asian Studies* 25.3 (1991), 465-6). Sumit Guha reports that the number of handspinners active in the Central Provinces had declined significantly by 1901 and was virtually zero by 1911 (Sumit Guha, "The Handloom Industry of Central India: 1825-1950," in Tirthankar Roy, ed., *Cloth and Commerce: Textiles in Colonial India* (Walnut Creek: AltaMira, 1996), 227-9). In the context of South India, Prasannan Parthasarathi has concluded that handspinning died out by the late nineteenth century (2001, 59). Punjab may be a partial exception. Michelle Maskiell argues that, although millspun yarn replaced handspun yarn for most "commercial urban textile production" in the nineteenth century, village women continued to practice handspinning into the twentieth century (Maskiell, "Embroidering the Past: Phulkari Textiles and Gendered Work as 'Tradition' and 'Heritage' in Colonial and Contemporary Punjab," *The Journal of Asian Studies* 58, no. 2 (May 1999), 380-1).

see shortly, khadi organizations' efforts to reestablish handspinning in rural areas were oriented toward joining those components back together.

Because handspinning could be performed at virtually any time of year, it possessed a fundamental flexibility that most types of agricultural work lacked. Khadi organizations drew upon this flexibility in a variety of ways, most notably by making part-time and not full-time employment the centerpiece of their program to reestablish industry in rural areas. Indeed, their genius lay partly in the recognition that, under certain circumstances, it might be more useful for people to pursue multiple forms of part-time employment than to work full-time at a single job. Many types of work have always been performed on a less than full-time basis, including seasonal, casual, and home work. This was certainly true in the early 1920s when the khadi economy began to take shape. Not only agriculturists but also factory workers rarely held down a single job, instead exchanging industrial for agricultural employment during the harvesting season or even working at multiple jobs in the same day.[62] Partly because most employment was so insecure, many of the reform efforts launched during the late colonial period were oriented toward supplying Indians with reliable forms of full-time work.[63] And yet the insecurity that was a hallmark of the time did not stem from anything inherent in the nature of part-time employment but rather from a variety of other forces, including the agro-industrial divide.

Khadi institutions' efforts to reestablish part-time employment in rural areas were firmly aimed at addressing one of the divide's primary consequences: the partial evacuation of industry

[62] For example, Chandavarkar 1994 reports that in 1934, one-third of the labor force employed in Bombay's cotton mills was hired on a daily basis from among the ranks of the long-term unemployed (82).
[63] The *badli* system, introduced by Bombay millowners in 1935, had the effect of making industrial employment both more and less secure. It divided the workforce into two camps: permanent employees and *badlis*, who although not permanent employees, were nevertheless required to report to their mill every morning. Vacancies in the permanent workforce were to be filled from amongst the ranks of badlis and not the so-called casual laborers who had previously been hired on a daily basis. Badlis themselves enjoyed no security of tenure and could wait years before being offered a permanent position (Chandavarkar 1994, 156-7).

from the countryside. Consider the following statement, issued in 1927 and repeated in various forms over the course of the next two decades:

> It is necessary at the outset to remove one misapprehension which again and again crops up in the arguments used against the Charkha. Spinning is not put forward as the sole occupation for any class of people; it is not intended that it should compete with, or displace, any existing type of industry. There is therefore no meaning in comparing the earnings out of spinning [to] other whole-time occupations and declaring them to be too meager.[64]

Presented as a riposte to critics who argued that handspinning was too unremunerative to serve as a full-time occupation, this statement made clear that it had never been intended to do any such thing. On the contrary, it was carefully designed to address what had been perhaps the divide's most enduring consequence: the widespread loss of supplementary employment in rural areas.

A low-skilled, labor intensive occupation that produced an essential consumer good using only minimal capital inputs, handspinning was uniquely suited to this task. Charkhas could be procured for as little as Rs. 2 in 1925 and were so simple to handle, Gandhi declared in his weekly journal, that they could be operated by the elderly, infirm, and "ignorant" alike.[65] AISA launched a massive campaign to popularize the spinning wheel in late 1925. In support of this effort, its executive board met as often as twice a month to monitor the progress of khadi work and to consider requests from AISA's provincial branches for funding and technical assistance. In 1925 and 1926, the board dedicated the bulk of its time to consolidating finances, appointing new employees, or *karyakartas*, and establishing district-level production and sales centers. By

---

[64] AISA, *Khadi Guide 1927*, 1. Puntambekar and Varadachari 1926 make a similar claim (129).

[65] Prices, and presumably the quality of the charkha as well, varied by institution. Institutions affiliated with the Bombay Provincial Khadi Board sold several charkhas, ranging in price from 4 to 8 rupees. Another organization, the Saugor Khadi Bhandar in the Central Provinces, sold its charkhas for a little over 2 rupees. See *Khadi Guide, August 1925* (Sabarmati: Khadi Information Bureau, 1925), 29 and 32. By way of comparison, the Satyagraha Ashram manufactured and sold two varieties of handlooms in 1927, one for Rs. 20, the other for Rs. 40. In *Khadi Guide 1927* (Ahmedabad: The All India Spinners' Association, 1927), 88. For Gandhi's comment, see *Young India* (1 Oct. 1926) in *Khadi Guide, 1927*, 5.

the end of 1925, AISA directly employed about six hundred karyakartas, many of them concentrated in a handful of states.[66] At the beginning of 1927, Tamil Nadu alone was home to at least 120 AISA karyakartas and Bihar to eighty-six.[67] In some states, such as Bengal and UP, semi-independent organizations employed the majority of khadi workers.[68] In other states, especially Tamil Nadu, small-scale merchants operated a number of khadi shops.[69] By mid-1927, AISA had opened almost four hundred production and sales centers, and started khadi work in approximately 1,500 villages.[70]

Karyakartas were charged with performing a number of tasks, including instructing rural dwellers in carding, ginning, and weaving; supplying would-be handspinners with a charkha and a weekly allotment of raw cotton; collecting the yarn produced by handspinners and transporting it to a production center to be turned into khadi; compensating handspinners for their labor; and selling finished khadi to urban and rural consumers.[71] I will discuss each of these initiatives at length in subsequent chapters, but for now it is enough to gesture toward their existence and their broad aim: repopulating the countryside with rural industry.

Table 1.1 presents my best estimate of employment totals within the khadi economy between 1927 and 1945. Based on figures compiled by khadi organizations themselves, these estimates are admittedly imperfect. On balance, they are more likely to be underestimates than

---

[66] Akhil Bharatvarshiya Charkha Sangh, *Salana Report, 1925-26* (Ahmedabad: Akhil Bharatvarshiya Charkha Sangh, 1926), 1.
[67] AISA, *Annual Report: 1926-27,* 14-5.
[68] UP's Shri Gandhi Ashram (SGA) is one such example. Bengal's Khadi Pratisthan is another. For an overview of SGA's activities, see *Shri Gandhi Ashram-Charkha Sangh: Ashram-Vidhan* (Meerut: Ramswarup Sharma, 1934), 2 and J. B. Kripalani, "Shri Gandhi Ashram," J. B. Kripalani private papers, NMML, 2-8. For an overview of Khadi Pratisthan's activities, see Satis Chandra Das Gupta, *Khadi Manual*, Vol. I (Parts 1-3) (Calcutta: Khadi Pratisthan, 1924).
[69] *A Khadi Tour: Concerning Some Information about Khadi Gathered in the First Months of 1924* (Information Bureau, All India Khadi Department, 1924).
[70] AISA, *Annual Report: 1926-7,* 51 and Akhil Bharatvarshiya Charkha Sangh, *Salana Report, 1925-26*, 10.
[71] *Akhil Bharatvarshiya Charkha Sangh: Salana Report, 1925-6* (Ahmedabad: All India Spinners Association, 1926) provides a comprehensive overview of the different components of this program.

overestimates. This is partly because many state-level khadi organizations, especially those with no formal affiliation to AISA, failed to submit information for publication some years. It is also because the below table includes only spinners and weavers in the total and not the smaller, although still substantial, group of carders, washers, dyers, and other miscellaneous individuals who helped to produce khadi. Khadi organizations reported employing almost as many workers as cotton textile mills between the mid-1930s and the mid-1940s: almost 350,000 at one point as compared to the textile mills' 400,000.[72] By way of comparison, the economic historian Rajnarayan Chandavarkar has estimated that the textile mills located in Bombay, the heart of India's large-scale industrial sector, directly employed about 151,000 workers in 1922 and 130,000 in 1945.[73] Thus, far from being a marginal phenomenon as some historians have suggested, on the level of employment, at least, the khadi economy was well on par with one of the other major industrial developments of the day.

Table 1.1 Employment, 1927-1945[74]

Year	Number of spinners	Number of weavers	Total
1927	83,339	5,193	88,532
1928	97,700	4,944	102,644
1930	179,453	13,733	193,186
1939	265,253	17,545	282,798
1940	254,968	16,801	271,769

[72] Puntambekar and Varadachari 1926, 214 and Gulzarilal Nanda, "Some Aspects of Khadi," Congress Jubilee Brochure, no. 3 (Allahabad: All India Congress Committee, 1935), 1.

[73] Chandavarkar, 78, 115, and 250. It is extremely difficult to compile accurate employment figures for the textile mills. Government surveys frequently undercounted industrial workers, who routinely moved between jobs or left factory employment entirely for extended periods. In addition, a large percentage of the industrial workforce was composed of casual laborers, who reported to the factory on a daily basis but were only occasionally offered employment. Finally, we must distinguish between the individuals directly employed by textile mills and the far greater number of individuals who derived some portion of their income from allied sectors of the economy. The latter group consisted of the street vendors who sold refreshments to mill hands, the construction workers who built vital infrastructure, the carters who transported raw materials, and the brokers, traders, and financiers who kept the mills afloat.

[74] All India Spinners' Association, *Annual Report: 1926-27* (Ahmedabad: The All-India Spinners' Association, 1927); All India Spinners' Association, *Annual Report: 1927-28* (Ahmedabad: The All India Spinners' Association, 1928); All India Spinners' Association, *Khadi Guide: 1931* (Ahmedabad: The All India Spinners' Association, 1931); and Akhil Bharat Charkha Sangh, *Varshik Vivaran: 1941-42* (Wardha: Akhil Bharat Charkha Sangh, 1942).

1942	324,391	23,785	348,176
1943	221,981	19,044	241,025
1944	239,332	21,041	260,373
1945	272,154	19,997	292,151

The Spinner: A Microhistory

Khadi organizations' efforts to restore rural industry to place are best comprehended from the bottom up. While the agro-industrial divide reconfigured India's entire economic geography, rendering millions of people surplus labor in the process, it had its greatest impact at the level of the individual household. Puntambekar and Varadachari once wrote of handspinning that its spread "acts even as a shower of rain distributed evenly and over a wide surface."[75] The agro-industrial divide spread in a similar fashion, covering so much ground that its initial effects were nearly invisible except to the individuals stripped of vital sources of supplementary income and forced to reduce consumption or to migrate elsewhere in search of work.

Khadi organizations' initial progress, if any, would have been similarly invisible, at least on the level of the economy as a whole. To locate it, we must turn to the land-poor peasant or agricultural laborer presented with a spinning wheel and promised modest compensation for the yarn she produced. I am unaware of any first-person accounts of the khadi economy authored by spinners themselves. I am similarly unaware of any attempts on the part of khadi organizations to document the individual experiences of the spinners they served. While Gandhi and several of his colleagues wrote extensively about their experiences producing and consuming khadi, it is unclear how much these accounts can tell us about the hundreds of thousands (even millions) of nameless individuals who at one point or another spun yarn within the khadi economy.[76] In the

[75] 1926, 195-6.
[76] Examples are Gandhi 1926; B. Pattabhi Sitaramayya, *I Too Have Spun: Being a Collection of Notes on Spinning* (Bombay: Hind Kitabs Limited, 1946); and J. B. Kripalani, "Shri Gandhi Ashram," 1975, J. B. Kripalani private papers, NMML, 2-20.

absence of such personalized information, we are forced to turn elsewhere for guidance, namely the institutional reports and aggregate statistical data I have referenced throughout this chapter. This does not mean that there is nothing for us to say about the people who experienced firsthand the consequences of the agro-industrial divide and who were the targets of khadi institutions' initiatives to reestablish industry in rural areas. On the contrary, by patching together evidence from a variety of sources, we can write a microhistory of a typical spinner and, in doing so, provide some indication of what restoring rural industry to place might have looked like on the ground. The following microhistory was compiled from information contained in the institutional records and publications described in the previous section. Where appropriate, I have cited the names of individual sources. A full list of publications consulted is available in Appendix 1.

While the specific circumstances facing spinners differed from district to district, and even from household to household, let us take a look at one spinner, a woman in her thirties living in a village in Muzaffarpur District in the eastern Indian state of Bihar.[77] Located about seventy kilometers from the Ganges River in the northern portion of the state, Muzaffarpur District was a flat plains area crosscut by many rivers. Although plagued by frequent flooding, the district's farmers simultaneously benefited from the soil's high moisture content, as a result of which they were able to pursue agriculture year-round. Our typical spinner almost certainly belonged to an agricultural household, most likely one in possession of a small parcel of land. Her family may have owned this land outright or rented it from a more substantial farmer. Cash rents were common in her part of the state.[78] Her family probably raised theirs by selling crops in the marketplace and/or by taking out a loan from the local moneylender. The principal crops in

[77] Bihar was one of the highest producing khadi states in the country, along with Tamil Nadu and UP.
[78] Gyan Prakash, *Bonded Histories: Genealogies of Labor Servitude in Colonial India* (Cambridge: Cambridge University Press, 1990), 15-6.

her area were wheat, rice, pulses, and oil-seeds. She and other members of her household—at a minimum, a husband, children, parents-in-law, and perhaps other relatives from her husband's side of the family—worked in the fields for many hours a day. She also had responsibility for numerous domestic tasks, including cooking, washing, and tending to small children.

The appearance of a khadi worker in her village may or may not have had an immediate impact on her life. Let us say that the first one arrived in 1927 from AISA's state headquarters in Muzaffarpur town. Clad in coarse white khadi and wearing a Gandhi cap on his head, he would have looked very different from her neighbors. M. K. Gandhi had passed through the district just a few months before as part of a tour to drum up support for the khadi program.[79] Partly as a result, the khadi worker's arrival would not have come as a complete surprise, although it was still sufficiently unusual as to attract considerable attention.

The khadi worker had come to her village to persuade its residents to take up handspinning, promising to supply them with cotton and spinning wheels, and to pay them for their yarn. She herself knew nothing of spinning, which was no longer practiced in her village, but for one reason or another, she soon found herself in possession of a charkha.[80] Perhaps her family had nationalist leanings. Perhaps a prominent member of her community was sympathetic to the khadi project. Perhaps she or her husband was swayed by the khadi worker's promises of the additional income a charkha might accrue. But, regardless, the khadi worker entered her name in a register, gave her spinning lessons, and stopped by once a week to collect the yarn she had spun and to provide her with a new supply of cotton.[81]

---

[79] Lakshmi Narayan, "Report of Khadi Work in Bihar, 1926-27" (Patna: Central Printing Press, 1927), 3-4. The Bihar portion of the tour lasted three weeks, concluding in the capital city, Patna, with the opening of a khadi exhibition.
[80] Handspinning was practiced in very few Indian villages by the 1920s. See footnote #73.
[81] The basic protocol khadi workers were expected to follow is described in Das Gupta 1924, 6-15. Also, Narayan 1927, 11.

In other parts of the country, she might have grown this cotton herself or procured it from a neighbor. However, Muzaffarpur was not a cotton-growing region and so khadi workers purchased cotton from neighboring districts, such as Saran and Darbhanga, or from as far away as Cawnpore in the United Provinces.[82] AISA's executive board hired a "cotton expert" in November 1925 to oversee the procurement and transportation of cotton from cotton-surplus areas to cotton-deficit ones.[83] The expert purchased cotton from central marketplaces at harvest time and stored them in warehouses for later use. Provincial branches facing a cotton deficit petitioned the executive board to allocate part of its stockpile to them. In December 1925, for example, the Bihar branch requested (and subsequently received) Rs. 50,000 worth of cotton from the board to distribute among its district branches.[84]

The sprawling network that transported cotton from faraway agricultural fields to the handspinner's doorstep partly resembled the supply chains established by textile mills. But even as khadi workers requested regular allocations of cotton, they attempted to bring cultivation closer to home by supplying spinners with cotton seeds or unginned cotton to be processed by hand. In later years, they would insist that handspinners grow cotton plants in the dirt patches alongside their homes or in pots in their courtyards. Our spinner might have cleared a small strip of land just outside her hut or even installed a row of cotton plants in her field. Too small in number to generate enough cotton for sale in the market, these plants were nevertheless capable of providing an adequate supply for home use.[85]

---

[82] Narayan 1927, 12-3.
[83] Trustee Mandal, 10-15 November 1925, AISA Papers, NMML.
[84] Trustee Mandal, 25-27 December 1925, AISA Papers, NMML
[85] M. K. Gandhi, "Tin Zaroori Shartein," *Harijan* (February 2, 1942), reproduced in Keshav Deodhar, *Dhanush Takua* (Sevagram: Khadi Vidyalay, 1944), 2; Gandhiji, *Rachnatmak Karyakaram: Uska Rahasya aur Sthan*, Trans. Kashinath Trivedi (Ahmedabad: Navjiwan Prakashan Mandir, 1959 [1946]), 22; and Akhil Bharat Charkha Sangh, *Kapas ki Samasya: Khadi ki Drishti se* (Sevagram: Akhil Bharat Charkha Sangh, 1950), 4 and 15.

During the agricultural season, the spinner would almost certainly have saved her spinning work for the end of the day to avoid disrupting her household's preexisting routine. Rising early in the morning, she probably prepared food for her family before heading out into the fields with her husband and children. In the evenings, she ginned and carded her weekly allotment of cotton. Ginning and carding were relatively simple jobs that khadi organizations urged spinners to assign to other members of their family. If our spinner followed their advice, she might have asked her children to clean the cotton and her mother-in-law to card it. Otherwise, she would have completed both tasks herself, beating the cotton with a stick to remove large waste particles, before picking out smaller waste particles with her fingers and separating the cotton fibers into parallel rows. Because she and other villagers possessed limited space in their homes, they preferred to perform these tasks outdoors.[86]

Finally, our spinner set up her charkha outdoors or in a corner of her home and began to spin cotton into thread. In all likelihood, she would have worked clumsily at first but gained in skill over time.[87] The yarn she produced would have been of a low or medium count, probably in the eight-to-fifteen range, as was the case in much of Bihar.[88] Low- and medium- count yarn was best suited to the production of relatively coarse garments capable of withstanding regular use. By contrast, high counts were used to produce fine-quality garments that would have been little use to agriculturists except on all but the most festive of occasions.

In the best-case scenario, the spinner would have earned a modest supplementary income for her labors. In 1927, AISA's Bihar state unit paid spinners of ten-to-twelve count yarn (low

[86] Akhil Bharat Charkha Sangh, *Varshik Vivaran: 1941-42*, 13-4.
[87] Khadi organizations frequently complained that handspinners produced poor-quality thread. See Akhil Bharatvarshiya Charkh Sangh, *Salana Report, 1925-26* (Ahmedabad: Akhil Bharatvarshiya Charkha Sangh, 1926), 15.
[88] Narayan 1927, 8.

counts) an average of a little over Rs. 1 per month. Those who spun yarn of twenty-to-twenty-four counts (medium counts) received closer to Rs. 2 instead.[89] Over the course of a year, then, she might have generated an additional Rs. 12-24 for her family, a sizeable increment at a time when the average annual income was only Rs. 50. Many agrarian households earned far less than Rs. 50, making a supplementary income of this size even more valuable.

In the worst-case scenario, our spinner might have quickly abandoned the charkha. Many Indians did so in the 1920s as khadi institutions struggled to manage their finances and to recruit and train khadi workers. In early 1927, many of Bihar's district khadi units curtailed production for want of liquid capital and transport networks capable of shifting yarn from village huts to small town sales departments.[90]

It is quite possible that no one, including the khadi worker assigned to her, would have noticed the spinner's absence. Certainly, her decision to stop spinning would not have impacted India's gross national product or total yarn output in any appreciable way. But consider many such spinners, perhaps the 83,000 at work in 1927 or the 324,000 who would be at work in 1942. Still too few to make much of a dent in overall employment figures, they each nonetheless represented an instance in which the agro-industrial divide had been closed, even just a little bit.

Conclusion

I have argued in this chapter that, by the early twentieth century, rural industry had become economy out of place. An outcome of the progressive spatial separation of agriculture and industry, rural industry's out-of-placeness aggravated the plight of rural dwellers already badly affected by the movement of global markets and accelerating population pressures on the

[89] *Ibid*, 11-2.
[90] *Ibid*, 4-5.

land. Out-of-placeness assumed the status not only of a material reality but also of a normative assumption. This latter dimension probably accounts for some of the hostility with which many of Gandhi's contemporaries greeted the khadi program, which seemed an affront to both conventional economics and to social commonsense. In contrast to the historiographical literature which views the khadi program as an intervention in the industrial economy, I have characterized it as an intervention in the agrarian economy instead. More specifically, khadi organizations' handspinning initiative constituted an *industrial* intervention in the *agrarian* economy, albeit one that sought to effect—and benefit from—simultaneous agricultural improvement.

CHAPTER TWO:

Accounting for Business

Prafulla Chandra Ray was an unlikely candidate to assume a leading position within M. K. Gandhi's khadi economy. Born in 1861 in Bengal's Jessore District, he earned a doctorate in inorganic chemistry from the University of Edinburgh in 1888 and accepted an assistant professorship in the chemistry department of Calcutta's Presidency College the following year.[1] While Ray seems to have been a capable teacher, he devoted most of his energy to research, especially research designed to bridge the gap between the scientific laboratory and the needs of Indian industry. After failed attempts to produce citric acid and to develop a chemical test for detecting the presence of adulterants in foodstuffs, he turned to what would be his primary focus for at least the next three decades: the manufacture and sale of pharmaceuticals.[2] India imported almost all its pharmaceuticals from abroad when Ray started his research in the late nineteenth century. As a result, the business he established in 1897 or 1898 was India's first pharmaceuticals company.[3]

As news of his company's success traveled throughout the subcontinent, Ray began to refashion himself as a public authority on business and what he regarded as its capacity to effect positive social change. In addition to delivering lectures on entrepreneurialism and time-

[1] Prafulla Chandra Ray, *Autobiography of a Bengali Chemist* (Calcutta: Orient Book Company, 1958 [1932]), 2 and 58-62.
[2] *Ibid*, 68-9 and 74.
[3] *Ibid*, 84-5.

discipline, he chided Indians for lacking a "spirit of enterprise and business instinct."[4] Indeed, many passages from his 1932 autobiography read like a homage to "the initiative, the dash, the pluck, the resourcefulness…that go to the making of a businessman or an entrepreneur or a captain of industry."[5] Bengal's high unemployment rate would plummet, he argued, if only the middle-classes took up business rather than succumbing to the "insane craze for university education." "The average graduate is found to be a licensed ignoramus," he added, with little to contribute to the crucial task of setting the Indian economy on a firmer footing.[6] Ray also asserted that business values, among them industriousness, initiative, and organization, would stand Indians in good stead in all aspects of their lives. His own company, he suggested, was a small experiment in the power of business to ease unemployment and spread commercial culture to new areas of human life.[7]

Given his status as an outspoken advocate of business, Ray's decision to involve himself in khadi work came as a surprise to his investors and colleagues, many of whom viewed khadi as a distinctly un-businesslike proposition. Ray addressed their skepticism head-on in his autobiography, writing: "Being an industrialist on a humble scale, at first I scoffed at the very idea of this primitive, uncouth instrument competing with machinery. But mature deliberation soon convinced me of the efficacy of spinning in every rural household during the odd hours of unemployment. It is the only subsidiary occupation possible to the teeming millions of India, who live from hand to mouth and are often on the verge of starvation."[8] While Ray did not leave behind a written record of his khadi work, we know from other sources that he was intimately

---

[4] *Ibid*, 169-72 and 362. In one of those lectures he encouraged his audience to read Benjamin Franklin's autobiography and learn from it the value of time-discipline. He also drew an implicit comparison between himself and Franklin, suggesting that both of them had developed perfect schedules for managing their time (173-5).
[5] *Ibid*, 74.
[6] *Ibid*, 213-4.
[7] *Ibid*, 74.
[8] *Ibid*, 297.

involved with the operation of Khadi Pratisthan, an organization established by his one-time student and employee Satish Chandra Dasgupta in 1924. Khadi Pratisthan quickly became the largest khadi enterprise in Bengal and one of the largest in India, thanks in no small part to Ray's contributions.[9]

Ray was just one of many businesspeople who took up khadi work in the 1920s. While very few of them left behind a corpus of writing as extensive as his, these merchants, shopkeepers, and entrepreneurs constituted the backbone of the khadi economy, bringing their business expertise to bear on a project designed to ameliorate rural poverty. These mid-level businesspeople have mostly escaped the attention of the historiography, however, which has focused instead on the financial contributions of large-scale capitalists to khadi and other Gandhian projects.[10] While wealthy merchant-industrialists like G. D. Birla provided some of the money that kept the khadi economy running, Ray and other businesspeople gave it shape by acting as agents of standardization.

This chapter follows the efforts of AISA's Executive Board to connect an unruly network of production centers, sales departments, showrooms, and independent businesses to one another through a certification process and the elaboration of uniform financial and accounting techniques. It begins by examining the franchising system that functioned as the primary mechanism through which outside individuals and organizations gained admission into the khadi economy. While franchisees were free to depart at any time, membership conveyed multiple advantages, including the right to market merchandise using AISA's brand. In return, franchisees

[9] Satis Chandra Das Gupta, *Khadi Manual*, Vol. I (Parts 1-3) (Calcutta: Khadi Pratisthan, 1924).
[10] Historians writing in this vein have concentrated primarily on Gandhi's attempts to absorb the capitalist classes into the nationalist movement. Claude Markovits, *Indian Business and Nationalist Politics, 1931-39: The Indigenous Capitalist Class and the Rise of the Congress Party* (Cambridge: Cambridge University Press, 1985) is one example of this trend.

agreed to adhere to a set of guidelines regulating almost every aspect of their business. The second half of the chapter introduces the concept of standardizing labor—that is, the work of formulating and maintaining standards. By moving back and forth between the businesspeople who created standards and the accountants, salespeople, and minor clerks charged with applying them, it sheds light on a form of interpretive labor often hidden from view. I highlight three varieties of standardizing labor performed by khadi workers: making prices, account keeping, and exchanging specialized credit instruments. Attention to these activities shows the imbrication of moral concerns with standardization. Standardization is never merely a technical procedure, but always also a deeply ethical enterprise.

The Khadi Franchise

The principal feature of AISA's business model was its franchising system. A partial inheritance from its predecessor organization, the AIKB, it was the primary mechanism through which AISA sought to exert control over a far-flung network of production centers, sales depots, and administrative headquarters. In 1926-7 alone, AISA estimated that it oversaw 177 production centers and 204 sales depots, with a presence in 2,831 villages.[11] AISA's Board of Trustees (BoT) was initially the central node in this network with the exclusive power to determine which organizations would receive franchises. By the late 1920s or early 1930s, the khadi economy had grown too large to be directed by AISA's BoT alone, however. As a result, the BoT established a special department to oversee the certification process. Called the Certification Department (*Praman Patra Vibhag*), it reviewed applications for certification, issued certificates (*praman*

[11] *Annual Report, 1926-7* (Ahmedabad: The All-India Spinners Association, 1927).

patra), oversaw annual audits of certificate-holders, and investigated claims that certificate-holders had failed to live up to the terms of the licensing agreement.[12]

Prospective franchisees had to file an application listing the name and address of the franchise; the name of the owner, manager or trustee; the date when the franchise came into existence; and total capital invested in the business. Production centers also had to detail the villages and/or districts in which they did business; the names of their sub-franchises; their average production and expenses; and a list of the names of the spinners and weavers with whom they did business. They also had to provide a copy of their memorandum of association and articles of association to the Certification Department.

Franchises bore the cost of certification and recertification. The Certification Department published a set of guidelines detailing the annual fees different types of franchises would be assessed for recertification. In 1934, for example, production centers were required to pay inspection fees of 4% of the value of all the khadi they produced up to Rs. 50,000 and 2% of the value of the khadi they produced in excess of Rs. 50,000. Sales centers, by contrast, were assessed a flat rate of Rs. 5 on sales below Rs. 5,000; Rs. 10 on sales between Rs. 5,000 and 10,000; and Rs. 15 on sales of Rs. 10,000 and above. In return, they received the right to market merchandise using AISA's brand as well as other benefits.[13]

In addition to agreeing to abide by the provisions of the AISA constitution, franchisees also had to agree to follow the rules devised specifically for them. There were 26 such rules, ranging from the size of labels attached to cloth to the disposal measures to be involved in the event khadi was contaminated with millspun yarn.[14]

---

[12] Trustee Meeting, Oct. 15-16, 1934, AISA Papers, 1925-1948, NMML, 290-1.
[13] *Ibid*.
[14] *Shri Gandhi Ashram-Charkha Sangh: Ashram-Vidhan* (Meerut: 1934), 119-23.

An example of one prospective franchisee is one Kapurchandra Patni Jain of Jaipur in western India, who sent a letter to AIKB's Board expressing his desire to convert his clothing shop into a khadi bhandar. While the Board tentatively approved his application, it responded with a list of conditions he would have to agree to before receiving his license. The first of those conditions—that Jain sell only khadi from his shop—must surely have given him pause. He already conducted a brisk business in *gota-kinari*, a style of embroidery native to his region, and had no wish to abandon it or to establish another store exclusively for the sale of khadi.[15] The other conditions were similarly exacting. Jain would be required to invest up to Rs. 12,500 in the bhandar, for which he would receive 6% yearly interest from AISA. AISA, in turn, would invest up to Rs. 25,000 on the condition that Jain repay its capital, either in cash or khadi, after four years. Although Jain would become the sole owner of the bhandar at that time, several of AISA's conditions would continue to apply. One of them was that Jain could not keep more than 6.25% of the net income from his goods if he sold them outside Jaipur and only 3.125% if he sold them within Jaipur. Another was that AIKB would be permitted to audit his accounts at any time. Any disputes between the two parties, the license agreement stated, would be referred to binding arbitration.[16] While it is unclear whether Jain consented to this agreement, many other private business owners did.[17]

[15] *Gota-kinari* is a type of metal embroidery that originated in Rajasthan. It is made by melting gold, silver, copper, and other metals into thread, and sewing them into cloth in elaborate patterns.
[16] Board Meeting, April 22, 1925, All India Khadi Board Papers (1924-5) (hereafter cited as AIKB Papers), Nehru Memorial Museum and Library (hereafter NMML), 60-2.
[17] The minutes from the Aug. 24, 1925 meeting of the Board specify that Jain had until Sept. 15, 1925 to consent to the agreement (90). An example of a private business owner who consented to AIKB's agreement is Rambinod Sinha of Bihar, whose application for a license and loan was approved by the AIKB Board on February 27, 1925. Another is Shuddh Khadi Bhandar of Kanpur, whose application for a license and loan was approved on May 20, 1925. See AIKB Papers, NMML, 52 and 79-81.

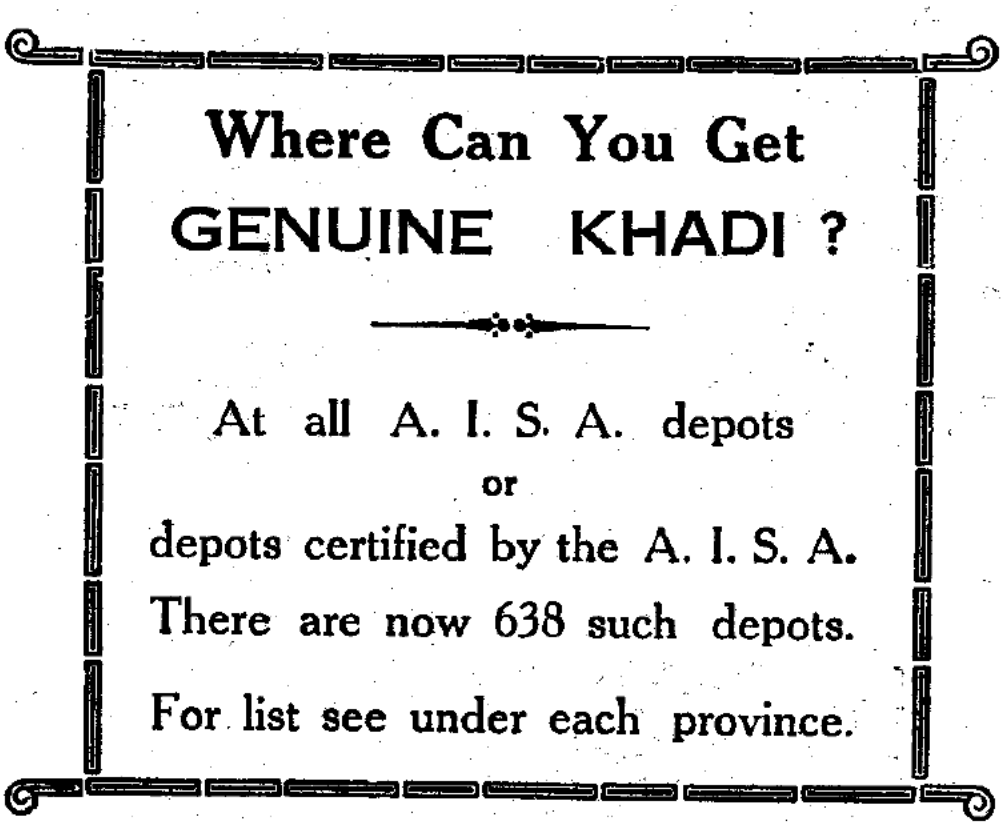

Fig 2.1 Advertisement for a list of businesses certified by AISA.[18]

Rules and Administration

Perhaps no one better exemplifies the rule-bound nature of the franchising system than Satish Chandra Das Gupta, a Bengali chemist and inventor who was an original member of AISA's Executive Council and the founder of Bengal's leading khadi enterprise, Khadi Pratisthan. Born in June 1880 in Kurigram in eastern Bengal, Das Gupta completed a master's degree in chemistry from Calcutta's Presidency College under the partial supervision of Prafulla Chandra Ray. An Edinburgh-trained chemist, Ray had established India's first pharmaceuticals company, Bengal Chemical and Pharmaceutical Works, in the Calcutta suburb of Sodepur at the

[18] *Khadi Guide: 1931* (Ahmedabad: The All India Spinners' Association, 1931), inside cover.

turn of the twentieth century.[19] Das Gupta worked as a superintendent in Ray's chemical factory for at least several years after graduation, developing special expertise in the production of caffeine. He is also credited with inventing a low-cost fire extinguisher, which Ray sold to another firm at a large profit.[20] Das Gupta left the factory to join the Indian nationalist movement in the late 1910s, and in 1921, he opened Khadi Pratisthan in Sodepur. Located within a short walk of Ray's factory, Khadi Pratisthan quickly became Bengal's flagship khadi enterprise, opening twelve production centers and twenty-five sales centers within its first five years of existence.[21] Das Gupta joined AISA's ten-member Executive Council (also called its Board of Trustees) in September 1925 at Gandhi's invitation, and when he resigned eleven years later, he did so as one of its longest-serving and most influential members.[22]

Das Gupta was entrusted with many responsibilities in his capacity as an AISA trustee. In addition to considering requests for loans and approving annual budgets, he also played a leading role in formulating the policies that governed the day-to-day operation of khadi enterprises, monitoring adherence to those policies, and devising the two-year curriculum of study for individuals training to join AISA's managerial staff. Das Gupta had already developed an extensive set of policies for Khadi Pratisthan managers, which he published in two volumes in 1924. The first of these volumes, titled simply *Khadi Manual*, spanned nearly a hundred pages,

---

[19] Ray seems to have started manufacturing pharmaceuticals in Sodepur on a limited basis in the early 1890s. He converted his Bengal Chemical Works into a limited liability company in about 1903, renaming it Bengal Chemical and Pharmaceuticals Works, Ltd. At the time Ray started his business, India imported almost all of its pharmaceutical preparations from abroad. Ray stressed the nationalist dimensions of his business in his interactions with the public, potential investors, and the pharmacists he hoped to persuade to buy his goods. See Ray, 1958.

[20] Illa Vij, "Satish Chandra Dasgupta," *The Tribune* (May 13, 2000), http://www.tribuneindia.com/2000/20000513/windows/fact.htm, accessed May 1, 2017.

[21] All India Spinners' Association, *Khadi Guide: 1927* (Ahmedabad: The All India Spinners' Association, 1927), 38-40

[22] Board of Trustees meeting, August 27-28, 1936, All India Spinners Association Papers, 1925-1948 (henceforth cited as AISA Papers, 1925-1948), Nehru Memorial Museum and Library (NMML).

many of them covered with diagrams and sample forms.[23] The sales information on the title page suggests that it may have been available for purchase by the public, but more likely, other khadi enterprises constituted its primary audience.[24]

Das Gupta's status as a leading AISA administrator and founder-head of one of the country's largest khadi enterprises makes *Khadi Manual* an important source of information about the values AISA hoped to inculcate in its managers. In addition to providing painstaking instructions on how to manage virtually every aspect of the khadi production and distribution process, the volume also advanced an argument about the essential components of good management. The manager's primary responsibility, Das Gupta argued, was to ensure that his employees worked in harmony for the good of the organization. Just as unruly foot soldiers threatened the success of a military operation, undisciplined workers threatened the wellbeing of a business operation. The managers of khadi enterprises should look to their counterparts in business (especially the limited liability company) and the military for models of effective leadership. As things stood now, he warned, Khadi Pratisthan resembled a dysfunctional military unit in which the privates were accorded an unacceptable degree of freedom and thus primed to "revolt at the flimsiest excuse."[25]

Khadi enterprises struggled to impose discipline on their workers for several reasons, Das Gupta explained. Many employees failed to appreciate the importance of administrative labor, which they dismissed as a distraction from more pressing, not to mention more exciting, tasks. Nowhere was this more evident than in the field of account keeping:

> It is extremely difficult to make the workers believe in the necessity of keeping proper accounts. 'We are not thieves—we are self-sacrificing men working for a cause—what is the good of asking us to waste our valuable time on the dry and non-productive work of

[23] Satis Chandra Das Gupta, *Khadi Manual*, Vol. I (Calcutta: Khadi Pratisthan, 1924).
[24] Vol. I retailed for Rs. 2 and Vol. II for Rs. 1. There is no print run information.
[25] Das Gupta 1924, 2-3.

> keeping accounts?—If this much trust cannot be placed on us &c. &c.' This is the customary reply that is met with when question of keeping accounts is raised. With this mental attitude selfless men have done immense harm to the cause and have been instrumental to losses and wastes, which if calculated and put together, will stagger the selfless patriots! The object of keeping accounts is not properly understood. It is not a question of honesty or dishonesty but it is a question of existence or extinction of the institution.

"Accounts," Das Gupta continued, "is not a dead and dry thing kept for the satisfaction of the auditor but it is a living thing, a helpful thing, a trusty handmaid to the manager or organizer."[26]

Making Price

Khadi organizations' standardizing activities began with the formulae they used to make prices. While in the neoclassical model, price is the point at which supply and demand meet, in other models, it is the outcome of social and political considerations. Recent work in economic anthropology and the sociology of finance has examined how prices are made.[27] For example, the anthropologist Jane Guyer has demonstrated that although prices generally appear to us as "singular amount[s]," they are in fact "composites" of a diverse array of factors, including input costs, ideologies, social relations, projections about the future, and the exercise of power. Prices' composite nature does not make them "inaccurate" or "unreliable."[28] It does, however, make them historical creations and therefore ripe for historical analysis.

Khadi organizations considered three different numbers (each of them composed of many other numbers) when determining the price of khadi. The first number, cost price (*lagat kimat*), referred to expenditures incurred on the actual manufacture of khadi, especially the cost of

---

[26] *Ibid*, 3-4.
[27] Jane Guyer, "Composites, Fictions and Risk: Toward an Ethnography of Price," in *Market and Society: The Great Transformation Today*, eds. Chris Hann and Keith Hart (Cambridge: Cambridge University Press, 2009), 203-20; Donald MacKenzie, *Material Markets: How Economic Agents are Constructed* (Oxford: Oxford University Press, 2009), 85-6 and 93-4; and Janet Roitman, *Fiscal Disobedience: An Anthropology of Economic Regulation in Central Africa* (Princeton: Princeton University Press, 2005), 83-5.
[28] Guyer, 203-5.

essential inputs such as yarn and dye, and the wages paid to spinners, weavers, launderers, and other primary producers. The second, institutional charges (*vyavastha kharch* or *sanstha kharch),* referred to expenses over and above the cost of production, including karyakartas' salaries, rent payments on buildings leased by khadi organizations, and transportation charges. The third, sales price (*bikri kimat*), referred to the price at which a particular type and quantity of khadi would be sold; it was arrived at by adding institutional charges to cost price. But this is not all. Since many production centers did not sell their manufactures onsite, instead shipping them to dedicated sales centers for distribution to the public, two different sets of institutional charges were often applied to the same piece of khadi—one by the production center and one by the sales center. Thus, the sales price quoted by production centers was almost always lower than the sales price quoted by sales centers; the former had only one set of institutional charges attached to it while the latter always had two.[29]

AISA and allied khadi organizations perceived the second number—institutional charges—as the most fungible of the three and so made it the centerpiece of their efforts to make prices that would generate neither profit nor loss. Although aware that they could also manipulate the first number by purchasing inputs at more or less opportune times or by altering the quantity of wages paid to primary producers, they viewed the second number—with some justification—as more directly subject to their control. This is because khadi institutions possessed only enough capital to purchase relatively small amounts of cotton and other inputs, and, then too, only shortly before existing stocks ran out. They could not, in other words, purchase inputs in bulk when market prices were low, nor could they afford to store bulk

[29] Virtually every discussion of price in the documents produced by khadi organizations references these three numbers. For a detailed explanation of the content and relationship of the numbers, see Vitthal Ambadas Santoshwar, *Bunai Ganit (Adhikrit Pathya Pustak)* (Bombay: Khadi aur Gramodyog Commission, 1959), 99-108.

purchases for long periods of time. Moreover, they had pledged to pay primary producers a fixed wage for a fixed quantity of work. While they could increase those wages, as they did periodically, they could not decrease them without calling into question their stated commitment to elevating the lot of the common laborer.

Institutional charges, by contrast, though not inherently more elastic than other expenditures, did not arise directly out of the production process. Instead, they functioned primarily as administrative expenses that could be reduced by limiting electricity use or trimming karyakartas' benefits—or, in more dire situations, by firing karyakartas or shuttering sales centers. Thus, as early as August 1924, AISA's predecessor organization, the All India Khadi Board (AIKB), urged private khadi dealers to impose institutional charges of no more than 6.25% of khadi's cost price.[30] That is to say, if a given piece of khadi cost one rupee to manufacture, dealers could demand an additional one *anna* (6.25%, or 1/16th, of a rupee) in institutional charges. The sales price of that piece of khadi would thus come to one rupee and one anna. AISA's board of trustees issued a similar command just two years later, this time decreeing that both production *and* sales centers should limit their institutional charges to an average of 6.25%. In other words, a production center could impose institutional charges of 6.25% the cost price of khadi it provided to sales centers. These sales centers could then add an additional 6.25% of their own for total institutional charges of 12.5%. The AIKB and AISA rules applied only to khadi made of cotton. Khadi made of wool or silk required more attention from karyakartas and so could be assessed a higher institutional charge.[31]

[30] Meeting, August 1, 1924, All India Khadi Board Papers (hereafter cited as AIKB Papers), NMML.
[31] Trustee Mandal, June 26-28, 1926, Akhil Bharat Charkha Sangh/All India Spinners Association Papers (hereafter cited as AISA Papers), NMML.

Neither the AIKB nor the AISA decree explains how these organizations settled upon 6.25% as the most appropriate institutional charge. However, transcripts of AISA board of trustees meetings indicate that 6.25% remained the normative rate until at least 1940.[32] In fact, AISA and affiliated institutions, such as the United Provinces' Shri Gandhi Ashram (SGA), repeatedly reminded karyakartas to adhere to the 6.25% rule. Departing from it, they suggested, risked making "unfair" prices, a transgression for which an organization's affiliation with AISA could be terminated.[33] Even after 1940 when, as I will explain shortly, AISA permitted its branches to collect slightly higher institutional charges in recognition of their growing expenses, it insisted that the sales price should never rise so high as to create a profit. And in their dealings with the general public and the colonial state, khadi officials reiterated their commitment to what we might term profit avoidance. For example, in its annual report for the 1941-42 fiscal year, AISA informed well-wishers that it followed "the laws of *moral* economics" when fixing prices, by which it meant that it sold its goods at the lowest possible price, thus foregoing any hope of personal gain.[34] And in perhaps the most curious commentary on the profit-avoidance rule, SGA's founder and long-serving head J. B. Kripalani asserted first, that Marx and Engels' labor theory of value had no merit whatsoever and second, that even if it did, "village industry [khadi included] satisfied the best requirements of the theory" insofar as it denied the employer—in this case AISA—"surplus value."[35] To be a khadi organization, then, was in part to make prices that encouraged profit avoidance, a task in which the proper calibration of institutional charges played a leading role.

---

[32] *Varshik Vivaran: 1940* (Wardha: Akhil Bharat Charkha Sangh, 1941).
[33] Trustee Mandal, May 20-25, 1929, AISA Papers, NMML.
[34] Akhil Bharat Charkha Sangh, *Varshik Vivaran: 1941-42* (Wardha: Akhil Bharat Charkha Sangh, 1942), 12-3. My emphasis.
[35] J. B. Kripalani, *Politics of Charkha* (Bombay: Vora & Co., Publishers, Ltd., 1946), 29.

But how did AISA and other khadi institutions guarantee that their branches and affiliates, much less private dealers, made price in the prescribed fashion? For starters, they produced exhaustive tables detailing the price at which different types of khadi should be sold. Subject to revision at least once a year, these tables listed permissible sales prices or, alternatively, the quantum of institutional charges that could be applied to khadi manufactured at a given cost price.[36] AISA distributed price tables to its production and sales centers for the use of karyakartas stationed there. SGA also sent its tables to customers who purchased khadi at the wholesale rate.[37] And crucially, AISA maintained a strict policy that it would award a certificate of affiliation (*praman patra*) to only those organizations that adhered to its pricing guidelines. Under other circumstances, non-AISA institutions might have made little effort to procure such a certificate. But because AISA claimed for itself the exclusive right to determine if cloth termed "khadi" by its producers or sellers was actually khadi, and because only those institutions in possession of a certificate of affiliation could, as per its rules, claim to trade in "genuine" khadi, khadi dealers desirous of AISA's stamp of approval had little choice but to apply for a certificate.[38] The INC supported AISA's claim until at least mid 1949, thus ensuring that for all intents and purposes, "khadi" meant not only handspun, handwoven cloth but handspun, handwoven cloth certified as such by AISA.[39] While we know for certain that many businesses claimed to sell "genuine" khadi even after being denied—or more likely, not bothering to apply for—a certificate, it is likely that many others saw the value of securing AISA's official recognition.

---

[36] For an example of the second type of price table, see Trustee Mandal, January 20-21, 1952, AISA Papers, NMML.
[37] Prabandhak Samiti, Register 1, January 13-14, 1934, Shri Gandhi Ashram Papers (hereafter cited as SGA Papers), Shri Gandhi Ashram (SGA), Lucknow.
[38] See AISA's revisions to its praman patra rules in 1935 and 1945 in Trustee Mandal, November 7-10, 1940 and Trustee Mandal, March 24-25, 1945, AISA Papers, NMML.
[39] Trustee Mandal, April 17-18, 1949, AISA Papers, NMML.

But AISA was not so naïve as to assume that khadi dealers would apply for a certificate of affiliation simply out of deference to its authority. Instead it offered a variety of financial incentives to certified institutions to adhere to its pricing and other policies. For instance, for at least the first five years of its existence, it provided an annual "bounty" to certified institutions on their khadi sales.[40] Here, it once again followed AIKB's lead, which announced in August 1924 that khadi dealers would receive a bounty equivalent to two percent of their annual khadi sales but only on those sales to which institutional charges of no more than 6.25% had been attached.[41] Moreover, AISA and SGA sold their khadi at wholesale prices to only those dealers and institutions that had been certified by AISA. Wholesale prices were more generous than those on offer at AISA's retail stores and thus attractive to those who purchased khadi in bulk to sell elsewhere.[42] And on certain occasions, SGA (and perhaps AISA as well) offered a "commission" on khadi purchased at wholesale rates; that is, it reimbursed customers a certain percentage of the funds they had expended on khadi. Customers did not have to make large purchases in order to receive a commission. In 1934, for example, SGA called for its branches to offer commissions of three percent on khadi purchases up to Rs. 25; four percent for purchases of Rs. 25 to Rs. 50; five percent for purchases of Rs. 50 to Rs. 100; and six percent for purchases over Rs. 100.[43] Interestingly, these and other schemes provided financial incentives to organizations that configured their prices in a way AISA hoped would prevent the generation of profit.

Still, for all its rules, AISA recognized that branches and affiliates would occasionally need to modify prices in response to changing local circumstances. As a result, it decreed as

[40] Trustee Mandal, May 20-25, 1929, AISA Papers, NMML.
[41] Meeting, August 1, 1924, AIKB Papers, NMML.
[42] Prabandhak Samiti, Register 2, November 26, 1938, SGA Papers, SGA, Lucknow.
[43] *Shri Gandhi Ashram-Charkha Sangh: Ashram-Vidhan* (Meerut: 1934), 59.

early as June 1927 that provincial branches could alter the price of khadi but only with the prior approval of AISA's central office.[44] There are few examples of provincial branches seeking and receiving such permission. The earliest example I could find dates from March 1946, when the Bihar branch was given permission to raise its prices to reflect the growing cost of cotton and the increased wages paid to weavers. However, AISA's board of trustees warned their counterparts in Bihar that the latter had permission to raise prices only so much as to cover new expenses, not to generate a profit.[45] More often, AISA and, following decentralization in the late 1940s, independent institutions took it upon themselves to change the percentage of permissible institutional charges for all of their branches and affiliates simultaneously. AISA seems to have increased the permissible institutional charges margin for the first time only in 1940, setting the upper limit for retail sales at twenty percent. The twenty percent ceiling referred to institutional charges applied by both production and sales centers and so represented an increase of 7.5 percentage points from the previous 12.5% (6.25% + 6.25%).[46] Although AISA provided no explanation of its reasons for raising institutional charges in 1940, other institutions did so at slightly later dates to accommodate rising or falling expenses. For example, Bihar Khadi Samiti (BKS) permitted production centers to increase their institutional charges in July 1948 and sales centers to do the same just one month later.[47] By contrast, SGA, though it increased institutional charges in July 1953, subsequently lowered them in January 1956 and again in April 1957 as a result of efficiencies gained from increased production.[48] One does not have to examine these

[44] Trustee Mandal, June 29, 1927 to July 8, 1927, AISA Papers, NMML. AISA reiterated this command in 1942 in *Marg Suchika*, Part 1 (Wardha: Akhil Bharat Charkha Sangh, 1942), 25.
[45] Budget samiti meeting, March 2, 1946, AISA Papers, NMML
[46] *Varshik Vivaran: 1940* (Wardha: Akhil Bharat Charkha Sangh, 1941), 14.
[47] Meeting, July 17-18, 1948, Bihar Khadi Samiti Papers (hereafter cited as BKS Papers), Bihar Khadi Gramodyog Sangh (BKGS), Muzaffarpur and Meeting, August 17, 1948, BKS Papers, BKGS, Muzaffarpur.
[48] Prabandhak Samiti, Register 3, July 4, 1953, SGA Papers, SGA, Lucknow; Prabandhak samiti meeting, Register 3, January 18, 1956, SGA Papers, SGA, Lucknow; and Prabandhak samiti, Register 3, April 23, 1957, SGA Papers, SGA, Lucknow.

changes in close detail to grasp the main point of this analysis: the prices charged by khadi institutions for their goods were not the mere outcomes of relatively straightforward changes in supply and demand. Instead, they were the products of careful calibration on the part of khadi institutions.

Khadi organizations complicated their task even further by attempting to make prices that would also serve ends other than profit avoidance. Namely, they employed price as an instrument for encouraging khadi consumption among certain target groups. While the historical literature is rife with examples of campaigns to persuade the urban middle classes to purchase khadi, it largely ignores the far more numerous, if less glamorous, campaigns to increase khadi consumption among karyakartas, spinners, and weavers.[49] This may be because the former campaigns so often took the shape of public speeches, newspaper advertisements, and exhibitions, while the latter transpired mainly out of public view. Though they passed a series of increasingly stringent resolutions stating that karyakartas would have to clothe themselves exclusively in khadi or risk termination, khadi institutions more frequently relied on what economists term price signals to spur khadi consumption. They did so by providing khadi to karyakartas and their dependents at a discounted rate—sometimes the wholesale price, other times at cost price plus limited institutional charges.[50] Unfortunately, we have little information regarding the quantity of khadi consumed by karyakartas and their dependents or the extent to which consumption might have increased after the imposition of new price signals. However, we have ample evidence that khadi institutions considered price signals a useful tool, one that they

---

[49] For discussions of the former, see Emma Tarlo, *Clothing Matters: Dress and Identity in India* (Chicago: University of Chicago Press, 1996) and Lisa Trivedi, *Clothing Gandhi's Nation: Homespun and Modern India* (Bloomington: Indiana University Press, 2007).

[50] *Shri Gandhi Ashram-Charkha Sangh: Ashram Vidhan* (Meerut: 1934), 60; Prabandhak samiti meeting, Register 1, January 13-14, 1934, SGA Papers, SGA, Lucknow; and Meeting, December 15, 1947, BKS Papers, BKGS, Muzaffarpur.

applied to small-scale khadi producers as well. Indeed, khadi institutions may have been even more generous with spinners and weavers than they were with their own karyakartas. AISA made khadi available to primary producers at cost price from 1934, a policy BKS continued even after its separation from AISA in 1947.[51] But however useful they found it, khadi organizations could not maintain a differentiated pricing structure (one price for spinners and weavers, a second price for karyakartas, and a third price for everybody else) without first taking into account the other aims they hoped to accomplish with their prices. It would not be easy to make price in such a way as to eliminate both profit and loss while simultaneously charging different rates to different types of consumers.

Accounting for Profit

Khadi institutions did not always succeed at not making a profit. On the contrary, they failed so regularly that AISA grew concerned and began to devise strategies for disposing of profit as soon as it came to the accountant's attention. For, if diverted quickly enough, profit could not accumulate, and non-accumulation, as I will argue here, was one of the khadi economy's central objectives. The chief mechanism AISA put in place to manage profit was the *Kamgar Seva Kosh,* or Workers Benefit Reserve Fund, a store of money to be used exclusively for the welfare of spinners, weavers, and other primary producers. Established in 1935 by AISA's board of trustees, the Kosh was actually multiple funds—one controlled by AISA's central office and one by each of its provincial branches. These funds were stored in bank accounts kept separate from khadi institutions' other assets and could be operated upon only by officeholders or their designated representatives. AISA rules dictated that individual khadi

[51] Trustee Mandal, April 4, 1934, AISA Papers, NMML and Meeting, December 15, 1947, BKS Papers, BKGS, Muzaffarpur.

organizations review their accounts at least once a year (sometimes twice a year) to identify any profit they had accrued. Ten percent of that profit was to be transferred to AISA's central office and the remaining ninety percent to the nearest provincial branch.[52] The central office and provincial branch would then deposit these funds into the Kosh, where they would be changed from profit into something else.

AISA did not attempt to name this "something else," but it did publish broad guidelines detailing the uses to which Kosh funds could be put. In 1937, it defined an acceptable use as any attempt to increase "the efficiencies of spinners and other artisans by supplying them more efficient spinning wheels and other necessary implements and accessories, also by preparing instruction for imparting scientific training to them in the necessary process of their work, and to take such steps as may be found necessary in this behalf."[53] In 1940, it provided additional clarification, specifying that Kosh funds could be devoted to any of the following tasks: the instruction of spinners and other primary producers in techniques to improve the quality of their output; the supply of more efficient spinning wheels and other technologies to khadi producers; the establishment of schools to provide instruction in khadi production; the establishment of schools to provide a basic education to the children of khadi producers; the establishment of schools to provide basic literacy training to khadi producers; the distribution of free medicines to khadi producers and other rural dwellers; the spread of knowledge about sanitation and public health; the establishment of general stores to sell food grains and other necessities at low prices; and the reduction or elimination of khadi producers' debts. An unspecified percentage of the

[52] Trustee Mandal, March 23-24, 1937, AISA Papers, NMML.
[53] Trustee Mandal, March 23-24, 1937, AISA Papers, NMML.

Kosh could also be used to benefit consumers, presumably in the form of lower khadi prices.[54] In 1942, AISA granted certified organizations permission to open their own Kosh instead of transferring profits to the central office and provincial branches.[55] And although it wielded no authority over provincial governments and princely states, it nevertheless encouraged them to deposit the profits they amassed through khadi work in a dedicated fund to be used solely for the benefit of workers.[56]

It is tempting to dismiss the Kosh as a mere accounting trick, a financial sleight of hand designed not so much to eliminate profit as to disguise it under a new name. And indeed some critics of the khadi economy claimed that khadi institutions amassed substantial profits, which they concealed from the public and used for unsavory purposes.[57] However, we should not jump to conclusions without first attempting to understand what AISA and other khadi institutions believed themselves to be doing when they erected a firewall in the shape of the Kosh between the profits they had accidentally generated and ordinary operating funds. We should also keep in mind that accounting is never so straightforward or rule-bound as popular opinion would sometimes have it. Instead, acts of classification are "always in principle decisions." Accountants are trained to apply a finite set of rules to specific cases, but even the most tightly crafted rule can admit of multiple interpretations.[58] For instance, as we will see shortly, khadi officials could answer the seemingly simple question "Over what period of time should profit be measured?" (or, alternatively, "How much time can pass before profit becomes accumulated capital?") in

---

[54] *Varshik Vivaran: 1940* (Wardha: Akhil Bharat Charkha Sangh, 1941), 13. *Marg Suchika, Bhag Pahla* (Sewagram: Akhil Bharat Charkha Sangh, 1948), 33-8 offers an even more detailed explanation of the permissible use of Kosh funds.
[55] Trustee Mandal, June 25-27, 1942, AISA Papers, NMML.
[56] Trustee Mandal, July 17-19, 1948, AISA Papers, NMML.
[57] We find an especially clear articulation of this sentiment in S. Ramanathan with Pattabhi Sitharamyya and N. S. Varadachari, *The Superstition of Khadi: A Discussion* (Erode: Kudi Arasu Publishing House, 1931), 16-7.
[58] MacKenzie 2009, 135-6.

different ways based on their changing perceptions of the economic landscape. Indeed, AISA's continued insistence that profit must be avoided at all costs and disposed of properly should it arise is strong evidence of the weighty task it had assigned the Kosh.

AISA sometimes had occasion to doubt its branches' commitment to the profit avoidance and profit management rules. One such episode transpired in April 1947, when SGA's head office asked permission to use its "accidental" profits to repay a portion of the considerable debt it had amassed with AISA. AISA granted permission even while airing its suspicion that SGA had intentionally generated a profit: "It is in complete violation of AISA's policy to make profit for the purpose of increasing capital or repaying a loan. Khadi work, whether undertaken by AISA or one of its affiliates, should put no system in place through which the temptation for profit might arise."[59] It made a similar declaration just eight months later when BKS office bearers proposed awarding some of their profit to karyakartas in the form of a bonus instead of depositing it in the Kosh. AISA refused, adding: "AISA considers it a sin for profit to arise and established the Kamgar Seva Kosh to check the inclination to make a profit. In this instance, it does not consider it appropriate to give a bonus simply because there is a profit. In doing so, sin assumes the appearance of virtue."[60]

But how were khadi institutions to know when they had made a profit? AISA offered no clear answer in this regard. Instead, it ordered its provincial branches to have their accounts audited twice a year and supplied them with templates to be used when keeping accounts or preparing budgets.[61] In addition, it required certified organizations to submit their accounts to an AISA-approved auditor at least once a year for review.[62] These rules probably encouraged khadi

[59] Trustee Mandal, April 18-21, 1947, AISA Papers, NMML.
[60] Budget samiti meeting, December 9-12, 1947, AISA Papers, NMML. Translated from Hindi.
[61] Trustee Mandal, June 29, 1927 to July 8, 1927, AISA Papers, NMML.
[62] Trustee Mandal, May 20-25, 1929, AISA Papers, NMML.

organizations to maintain their accounts in a fashion likely to meet with the auditor's approval. But they did not guarantee that all khadi institutions would calculate profit in the same fashion. In fact, it would have been virtually impossible to guarantee such a thing since even the most fundamental accounting questions can be answered in a variety of ways. AISA acknowledged as much when it entertained provincial branches' requests to reclassify accounting items; a figure initially classified as a "net deficit" could, if viewed in a different light, end up under the "capital account" subheading instead.[63]

AISA made a more dramatic admission of profit's essential fungibility in the waning months of 1945 when it made a seemingly modest change to the Kamgar Seva Kosh rules. Although prior to this date, khadi insitutions had deposited their annual profits directly into the Kosh, the new rules permitted them to store those profits with an AISA head office for up to two years. Most institutions embraced the new policy for a very simple reason: if they suffered a loss or incurred a debt during that two-year period, they could make it up using some or all of the profit they had entrusted to the head office. By contrast, those institutions that continued to abide by the old rules could not reclaim the profit they had transferred to the Kosh even if they suffered a crippling loss.[64] Think of the Kosh, then, as a lockbox. Profit, once placed inside, could never be withdrawn by its depositor. Instead, its contents belonged exclusively to khadi producers—and in rarer instances, khadi consumers—on whose behalf the Kosh's trustees operated. The new rules established a second lockbox, more permeable than the first. Depositors had a key to this second lockbox, which, with the trustees' permission, they could use to withdraw part of its contents. But after two years elapsed, the contents of the second lockbox were transferred to the first, thus severing the original depositor's claim over them.

[63] Trustee Mandal, March 27-28, 1931, AISA Papers, NMML.
[64] Trustee Mandal, November 27, 1945 and July 17-19, 1948, AISA Papers, NMML.

The new policy was at root a pragmatic one insofar as it guaranteed struggling khadi institutions a new measure of financial security. But it was also indicative of a slight shift in the way AISA approached profit. Whereas previously it had treated profit as something best measured and disposed of at the end of every fiscal year, from late 1945 onwards, it began to measure profit using a slightly longer time frame. This new time frame made profit appear more not less ambiguous since it implied that what was profit in the short term (i.e., at the end of the fiscal year) might not be profit two years later. And furthermore, it suggested that profit, though still dangerous, even sinful, did not have to be discarded immediately but could be sequestered and thus contained for up to two years. Perhaps profit had a longer half-life than khadi institutions had initially realized.

The Sales Sciences

Vitthaldas Jerajani, a Gujarati merchant who opened a khadi store in 1919, is widely credited with introducing "the sales sciences" to the khadi economy. Born in Jamnagar state in Gujarat in September 1882, he spent a large portion of his childhood in Zanzibar before returning to Bombay in the 1890s to take up a menial position in his uncle's cloth shop. Jerajani learned bookkeeping from his uncle's accountant before moving to another store where, after four years of hard work, he achieved the status of lead accountant himself. He quit that job shortly after the outbreak of the swadeshi movement in 1905, taking a position at a store founded by the Indian nationalist leader Bal Gangadhar Tilak to promote the sale of cloth manufactured in India.[65] Gandhi visited the store with his close friend Revashankar Jagjivan Jhaveri in early 1915 and struck up a conversation with Jerajani. The cloth sold in Tilak's store was not truly *swadeshi,* or

[65] This shop was called the Bombay Swadeshi Cooperative Stores Limited.

indigenous to India, Gandhi informed Jerajani, even though it had been manufactured in the subcontinent by handloom weavers and Indian-owned textile mills. This was because the handloom weavers had used millspun thread and the Indian-owned textile mills had stripped native artisans of their employment.[66]

After much back-and-forth with Gandhi, Jerajani agreed to assume responsiblity for the first khadi sales depot opened in Bombay. Monthly sales were only Rs. 800-1,000, a number Gandhi considered far too low. Jerajani did not like this work at first since he was used to effecting annual sales of crores of rupees. Nevertheless, he managed to increase monthly sales to Rs. 8,000 in his first month on the job through the use of advertising techniques he had learned from his father. He hawked khadi, carrying bolts of it on his shoulders or in a cart. He also printed advertisements in newspaper, posted colorful signboards, and issued radio announcements. Eventually, he started a Gujarati- and English-language newsletter of his own specializing in the publication of khadi-related news. Nationalist associations reprinted his articles in full or part. At one point, the newsletter enjoyed an annual circulation of 60,000 copies.[67]

Jerajani's story is emblematic of that of many mid-level merchants who decided to make a career for themselves within the khadi economy. While some of them converted preexisting businesses to shops devoted exclusively to the sale of khadi, others opened new khadi stores or took over the management of stores established by AISA and its affiliates. As with Dasgupta, who tried to set the administration of khadi organizations on a business footing, Jerajani and others attempted to apply the skills they had learned selling other commodities to marketing khadi.

---

[66] Vitthaldas Jerajani. *Khadi ki Kahani* (Bombay: Khadi-Gramodyog Ayog, 1957), 4-8.
[67] *Ibid*, 16-8 and 33-4.

Capital Formation

Khadi organizations had developed relatively successful strategies to prevent the generation of profit and to dispose of any profit that arose in a fashion that precluded accumulation. However, their very success created another problem: they rarely had enough capital to reproduce themselves, much less grow their work. AISA aggravated this problem by continually changing its stance on what constituted an acceptable method of capital formation. Its rules initially stated that provincial branches and affiliates could take out loans from pre-approved banks (the central offices and state branches kept a list of those it had certified), state governments, and constructive organizations like Gandhi Seva Sangh. They could also accept donations (*chanda*) from private citizens, even "private capital."[68] But AISA remained skeptical of loans and periodically forbade khadi institutions from accepting them. It routinely relaxed this prohibition, as in September 1937 when it solicited a loan to increase production.[69] Nonetheless, it reversed its reversal in 1940, confessing that it had had a difficult time repaying loans and could no longer tolerate the uncertainty of not knowing in advance whether a loan would be extended. In addition, it did not wish to continue mortgaging goods to secure loans or procuring insurance for mortgaged goods. As a result, it repaid all its bank loans and those it had incurred with state governments, probably by reducing production or selling off some of its assets. Now it faced the same situation it had confronted prior to 1937—how to raise capital. M. K. Gandhi temporarily resolved the problem by obtaining Rs. 4 lakhs worth of donations in Bombay

[68] *Annual Report: 1927-28* (Ahmedabad: The All India Spinners' Association, 1928), 25.
[69] Trustee Mandal, September 17-19, 1937, AISA Papers, NMML.

between September and December of 1940.[70] But khadi organizations could not subsist on donations alone.

As a result, they had to develop techniques for raising capital that would not interfere with their prior commitment to non-accumulation. One technique took the form of a *khadi hundi*, a hybrid currency-promissory note that could be redeemed only for khadi. Institutional sources trace the origins of the khadi hundi to an INC exhibition held in Calcutta in 1929. Exhibition organizers asked Gandhi to hawk khadi at the exhibition in an effort to boost khadi sales. He declined, citing lack of time, but agreed to sign receipts for individuals who made advance payments for khadi. That is, would-be customers paid their money in advance, received signed receipts from Gandhi in return, and later used those receipts to purchase khadi. So eager were some attendees to obtain Gandhi's signature that, in the words of one source, "The response was instantaneous and stocks worth large amounts of money were sold."[71] Vitthaldas Jerajani, an AISA trustee and the man charged with putting khadi sales work on a "scientific" footing, recalled this episode in 1932 when he assumed charge of AISA's Bombay sales depot. In a memoir published twenty-five years later, he remembers printing "tickets" ranging in value from Rs. 1 to Rs. 100 that customers could purchase with cash and exchange for khadi at a later date. Though he does not explain why customers found these tickets attractive, he reports selling Rs. 30,000 of them within the first week of their availability.[72] Other khadi institutions quickly followed suit, including SGA in 1934.[73] Until 1953 and the formation of a government body to oversee the khadi economy, individual institutions issued tickets (renamed khadi hundis between

[70] *Varshik Vivaran: 1940* (Wardha: Akhil Bharat Charkha Sangh, 1941), 2-3.
[71] *Sale of Khadi Hundis, 1954-55* (Bombay: All India Khadi & Village Industries Board (Ministry of Commerce and Industry), 1955), 18 and Jerajani, 102.
[72] *Ibid*.
[73] Prabandhak samiti meeting, Register 1, January 13-14, 1934, SGA Papers, SGA, Lucknow.

1932 and 1934) more or less at their own initiative. They did not sell hundis year round, however, but on special occasions, such as the eve of a political rally or Gandhi Jayanti (sometimes called Charkha Jayanti), a commemoration of Gandhi's life held on and around his birthday each October.[74]

The khadi hundi served multiple purposes, helping to stimulate public interest in khadi, clear accumulated khadi stocks, and, most importantly for our purposes, raise large sums of capital in relatively short periods of time. In this last sense, khadi hundis partially resembled their namesake, the *hundi*, a financial instrument first used in South Asia as early as the tenth century C. E. to perform a wide range of trading and banking functions.[75] Historians have struggled to define *hundi*, Marina Martin argues, partly because they have been too eager to draw comparisons with "European credit instruments and banking facilities" and partly because there have been many different types of hundis.[76] Very few hundis have survived to the present day, making it difficult to comment on their physical appearance. However, we have reason to believe that in their simplest form, hundis were little more than slips of paper onto which a few key pieces of information had been inscribed. Rajat Kanta Ray has investigated the changing uses of the hundi in the subcontinent beginning with its deployment in the tenth century as a vehicle for remitting taxes and soldiers' wages. By the sixteenth century, the hundi had gained an additional function as an instrument for making private remittances. Merchants and bankers used hundis to finance inland trade under the Mughal Empire and, from the seventeenth century, Indian Ocean trade. Traders employed hundis to transfer funds across vast distances or to raise credit for their

---

[74] *Sale of Khadi Hundis* 1955, 19-20.
[75] Rajat Kanta Ray, "Asian Capital in the Age of European Domination: The Rise of the Bazaar, 1800-1914," *Modern Asian Studies* 29.3 (July 1995), 458.
[76] Marina Martin, "*Hundi/Hawala*: The Problem of Definition," *Modern Asian Studies* 43.4 (2008), 921.

business ventures.[77] When the English East India Company arrived in India at the beginning of the seventeenth century, it used hundis largely for trading purposes, but from the eighteenth century, it also used them to remit military and other funds.[78] The colonial state struck a (possibly unintentional) blow at the hundi system in the mid nineteenth century when it introduced a uniform silver rupee intended to replace the subcontinent's many local currencies. Although only partly successful, this action nonetheless deprived many Indian bankers of the fees they had previously accrued by issuing hundis that changed gold sovereigns and other foreign currencies into local ones.[79] Still, the hundi endured as an instrument of "mainstream" trade far into the twentieth century.[80]

Khadi hundis performed only some of the same functions as the hundis discussed above, but it is nevertheless worth keeping in mind that khadi institutions—and later the post-colonial state—saw fit to repurpose a centuries-old financial instrument as a vehicle for reproducing the khadi economy in the present. The capital generated by the sale of khadi hundis could be used to stimulate faltering khadi production, and since consumers could not exchange their hundis for khadi before a predetermined period of time (usually at least a month) had passed, sales centers had time to restock their shelves before customers descended upon them. Khadi hundis bore more than a passing resemblance to the bank loans they were partially intended to replace. But in contrast to bank loans, khadi hundis carried no interest charges and were financed directly by the Indian people. Moreover, they resisted accumulation since the capital they generated was used up almost immediately in the manufacture of new khadi. This is because customers purchased khadi hundis with the understanding that they were simultaneously purchasing khadi of

---

[77] Ray, 459-62.
[78] *Ibid*, 469-70.
[79] *Ibid*, 495-6.
[80] Martin, 918.

equivalent value to be delivered at some point in the future. While khadi institutions might conceivably have used a portion of this incoming capital to produce new capital in the short term, available evidence suggests that they did not. Indeed, AISA's resistance to what one of its leading intellects termed "accumulation" or "acquisitiveness" (*parigrahi*) only grew over time. Such resistance took the form of blanket opposition to storing funds in banks, both out of fear that banks would divert those funds to ends at odds with the khadi economy and out of conviction that khadi institutions should raise only so much capital as they could immediately use.[81] And, on a purely practical level, individual khadi institutions seem to have occasionally made a mess of the hundi system, issuing hundis on credit instead of in exchange for cash to the perpetual bewilderment and dismay of khadi officials. SGA attempted to head off karyakartas' enthusiasm for exchanging hundis for largely worthless I.O.U.'s, but to little avail.[82] Khadi hundis generated enough capital to justify their sale but squandered plenty in return.

I have been unable to locate any khadi hundis printed prior to the early 1950s. Khadi officials stationed in Bihar, Delhi, Gujarat, Maharashtra, and UP have informed me that they were likely destroyed decades ago.[83] However, we have reason to believe that even in the absence of a centralized agency to oversee their manufacture and circulation, khadi hundis, at least in their material form, may have shared several features in common. This is because AISA issued instructions in mid 1939 detailing the procedures to be followed when preparing hundis or keeping records of their transaction. The instructions, all of them proposed by Jerajani, are as follows: (1) Khadi institutions should contract with "a reliable press" to print their hundis along with a counterfoil for recording the name and address of the purchaser, the value of the hundi,

[81] Trustee Mandal, December 15, 1948 and April 17-18, 1949, AISA Papers, NMML. It is also important to keep in mind that banks move capital around by investing it. They do not maintain it in a single place.
[82] Prabandhak samiti, September 6, 1955, July 3-6, 1956, and September 19-20, 1956, SGA Papers, SGA, Lucknow.
[83] Personal conversations.

and the date of the transaction; (2) Hundis should be serially numbered and a "responsible worker" appointed to enter them into a register; (3) Hundis should be "printed on hand-made paper in two or three colours block, and the form and colours be changed from time to time"; (4) Hundis should bear the signature of the secretary or agent of the branch that printed them; (5) "The specimens of different sorts of [h]undis and the signatures of the persons authorized to sign the same should be previously supplied to the depots where the coupons are to be cashed"; (6) Workers charged with selling particular hundis should sign their names in a register acknowledging receipt; and (7) "As soon as a hundi is cashed it should be stamped as 'cashed' or 'paid'" and sent to branch headquarters "where the details should be recorded and signed by the responsible officers and then destroyed forthwith in their presence."[84]

Khadi hundis continued to be printed through at least the late 1960s, but their meaning and function seem to have begun changing from the mid-1950s. While prior to this time khadi organizations prioritized the use of hundis to ensure that capital was consumed in approximately the same space as it was produced, they subsequently prioritized nation-building objectives.[85]

The Yarn Currency

In late 1944, AISA made an announcement that would forever change its relationship to consumers: starting in July 1945, customers would no longer be permitted to purchase khadi using only cash. Instead, they would also have to provide a fixed amount of what khadi organizations called "yarn currency," or in some instances, "yarn provision" (*sut ki shart*). Yarn currency was exactly what it sounds like: a medium of exchange that took the form of yarn. However, unlike other media of exchange, such as paper notes or metal coins, yarn is the direct

[84] Trustee Mandal, May 5-6, 1939, AISA Papers, NMML.
[85] *Sale of Khadi Hundis*, 21-2.

outcome of a productive process. Apart from employees at government printing presses, manufacturers of local currencies, and counterfeiters, Indians did not make *material* money. On the contrary, they exchanged the goods they produced—usually agrarian products or handicrafts—for money and/or sold their labor power for money in factories and other workplaces. In this sense, yarn currency more directly indexed productive labor than did the rupees or annas consumers had previously used to purchase khadi. Moreover, as khadi officials noted on multiple occasions, the introduction of the yarn currency and the corresponding rule change mandating that customers pay for a certain percentage of their khadi with handspun yarn increased the likelihood that those who wore khadi also participated in its production.[86] And, finally, yarn, unlike other currencies, would, if used properly, enjoy only a relatively short lifespan. For it was not intended to serve as a permanent store of value but a temporary one that would, after changing hands once or twice, be woven into cloth. That is, it would be entirely used up by the production process.

AISA's aims were relatively modest when it first announced the establishment of the yarn currency. Worried that it would alienate consumers by demanding too much of them too quickly, AISA initially determined that consumers would have to pay only a little over 3% of khadi's sales price in yarn; that is, they could pay for the remaining 96 to 97% in cash. Moreover, would-be customers did not even have to spin the yarn they exchanged for khadi themselves. Instead, they could provide yarn spun by a family member, a friend, or another resident of the locality.[87] But, to AISA's dismay, some customers interpreted the final option as a license to purchase handspun yarn from others, which they then used to procure khadi. As a

[86] Board of Trustees meeting, December 1-3, 1944, AISA Papers, NMML and Akhil Bharat Charkha Sangh, *Karya Vivaran: 1 July 1944 se 30 June 1945 tak ka* (Sevagram: Akhil Bharat Charkha Sangh, 1946), 12.
[87] Board of Trustees meeting, December 1-3, 1944, AISA Papers, NMML.

result, it changed the final option to "yarn spun by a servant" to whom one paid a guaranteed monthly wage.[88] The reason for this change is not entirely clear but would seem to have something to do with AISA's desire to remove the yarn currency from the realm of everyday transactions. Since one did not pay a servant specifically for handspun yarn but instead a lump sum for all his/her monthly labors, one was not technically buying yarn from the servant, or at least not in the same way that one purchased yarn from a store or a professional spinner.

AISA recognized that the yarn currency would not achieve its desired effect in its current form and so determined that from January 1946 customers would have to provide at least 1 *lati* (640 feet) of handspun yarn for every Rs. 1 of khadi they purchased. It doubled this requirement to 2 latis, or 1,280 feet, of handspun yarn in July 1946.[89] Both consumers and karyakartas found it difficult to convert between units of length, on the one hand, and rupees, on the other, and so AISA officials began to reframe yarn currency such that it was no longer equivalent to a rupee amount but to a percentage of the yarn required to produce a given piece of khadi. Thus, from July 1946, customers had to pay for their khadi with a quantity of yarn equal to at least half of the yarn used to weave the khadi they wished to buy; they could pay for the remainder with cash.[90] There is some evidence to suggest that AISA departed from its timeframe. For instance, transcripts of a board of trustees meeting held in April 1948 indicate that one of the trustees proposed a resolution calling for customers to provide ¼ of the total yarn used to manufacture a given piece of khadi from July 1947, ½ from January 1948, and all from July 1948. The majority of trustees present rejected the proposal, concluding that it would be "improper" to pass it at that point. However, AISA continued to reiterate the importance of the yarn currency, adding that

[88] Board of Trustees meeting, November 27, 1945, AISA Papers, NMML.
[89] Board of Trustees meeting, November 27, 1945, AISA Papers, NMML.
[90] Akhil Bharart Charkha Sangh. *Karya Vivaran: 1 July 1944 se 30 June 1945 tak ka* (Sevagram: Akhil Bharat Charkha Sangh, 1946), 12 and AISA, 10-11.7.1946, 1041.

sales depots should refuse to sell khadi to would-be consumers who had purchased the yarn they exchanged for khadi.[91] And when certified institutions wrote requesting permission to waive the yarn currency requirement, AISA refused. Indeed, AISA registered its disapproval when SGA dropped the requirement in November 1947, informing SGA that it no longer enjoyed a "moral relationship" with AISA and calling upon it to return AISA's capital immediately.[92]

The yarn currency was a limited experiment in that AISA began to wind down its commercial business from late 1948 to devote all its attention to *vastra swavalamban* (self-sufficiency in cloth). As a result, it announced its intention to stop selling khadi to the public, thus obviating the need for yarn currency. After all, if AISA no longer sold khadi, it could hardly demand that customers pay for that khadi with yarn.[93] Nevertheless, its increased embrace of vastra swavalamban was in many ways simply an extension of the yarn currency. This is because participants in the vastra swavalamban program did not purchase khadi using cash. Instead, they spun yarn, which they exchanged at AISA and other centers for khadi. Or, to be more precise, AISA arranged for spinners' yarn to be woven into khadi free of charge or at a heavily subsidized price. This new system virtually guaranteed that spinners would increase their khadi consumption. Whereas previously they had received cash in exchange for yarn, they would henceforth receive only khadi. While spinners could in theory sell that khadi on the market for cash, in practice there would have been few interested buyers. Instead, spinners confronted another problem: a paucity of weavers willing to turn handspun yarn into khadi. AISA attempted to swell the ranks of weavers by offering them higher wages—as of 1942 a minimum wage of eight annas for eight hours of work—establishing weaving schools, training its own karyakartas

[91] Board of Trustees meeting, April 18-21, 1947, AISA Papers, NMML.
[92] Board of Trustees meeting, December 9, 1947, AISA Papers, NMML.
[93] Board of Trustees meeting, March 17-19, 1948, AISA Papers, NMML.

to weave, and in some instances, even paying weavers to resettle in areas where their services were most needed. Yet there never seemed to be enough weavers, and on several occasions, khadi institutions even had to introduce "khadi rationing."[94] When khadi rationing was in effect, khadi institutions fulfilled longstanding customers' orders first and new customers' orders second, meaning that the latter rarely received all the khadi they had requested. This discouraged new participants from joining the khadi project but, more importantly, threatened to undo much of the financial labor khadi institutions had invested in producing non-accumulation. This is because in the absence of weavers prepared to manufacture khadi, the handspun yarn submitted by spinners began to accumulate in production centers and warehouses.

Spinners made the situation even worse by insisting that khadi institutions provide them with khadi made exclusively of the yarn they had submitted for weaving. That is, they did not want khadi made of yarn spun by other spinners, but khadi made of yarn they had spun with their own hands. Khadi institutions initially acceded to this demand but quickly discovered that in doing so, they had made their own work more difficult. Karyakartas found it difficult to keep track of the small bundles of yarn submitted by different spinners, even more so when those bundles passed into the possession of weavers. Moreover, it took far too much time and money to transport a single spinner's yarn to the nearest weaving shed, wait for the weaver to turn it into khadi, and then hand over that khadi to the spinner. Better to mix different bundles of yarn together, send those bundles to the nearest unoccupied weaver, and distribute the finished khadi to wherever it was needed. Thus, in 1945, AISA announced that participants in the vastra swavalamban program would receive khadi equal in value to the yarn they deposited at a

[94] Akhil Bharat Charkha Sangh, *Varshik Vivaran: 1941-42* (Wardha: Akhil Bharat Charkha Sangh, 1942), 11-3; Akhil Bharat Charkha Sangh, *Karya Vivaran: 1 July 1945 se June 1946 tak* (Sevagram: Akhil Bharat Charkha Sangh, 1946), 7-8; and Akhil Bharat Charkha Sangh, *Marg Suchika*, Part 1 (Wardha: Akhil Bharat Charkha Sangh, 1942), 38-9.

production center but not necessarily khadi made of the yarn they themselves had spun. This decision had the effect of making yarn more like other currencies in that henceforth yarn would cease to index the labor of a particular individual and would instead become a generic store of value. In other words, bundles of yarn of the same quantity and quality were now interchangeable whereas previously they had maintained an irrevocable bond with their producer even after being transformed into cloth.[95]

Conclusion

This chapter has examined the role of business—as a set of institutions, ideas, and practices—in the constitution and operation of the khadi economy. It argues that the historiography's tendency to explore the relationship between business and khadi (as well as other Gandhian projects) through the lens of the capitalist classes has obscured the contributions of a substantially larger group of mid-level merchants, shopkeepers, and entrepreneurs to the everyday life of Gandhian enterprise. In placing business expertise at the center of a project designed to ameliorate rural inequality, khadi organizations carved out a prominent place for businesspeople in the moral and economic guidance of the nation. The chapter began by considering the franchising system that connected distant khadi organizations to one another before exploring the careers of two khadi workers cum businesspeople who played a key role in formulating the administrative and sales guidelines that structured khadi organizations' day-to-day activities. These guidelines, which covered subjects such as making prices, account keeping, and exchanging khadi hundis, were at once attempts to ensure standardization across the khadi economy and components of a larger moral vision. In fact, we can understand many of these

[95] Akhil Bharat Charkha Sangh, *Karya Vivaran: 1 July 1945 se June 1946 tak* (Sevagram: Akhil Bharat Charkha Sangh, 1946), 7-8.

guidelines as efforts to harness business as a tool for responsibly embedding the market in social relations.

CHAPTER THREE:

Writing the Economy

Khadi institutions did not produce only khadi. They also produced books—and lots of them. Between 1920 and 1970, the All India Spinners Association (AISA) and several of its affiliates published more than 250 books in Hindi and English alone. These books took many different forms: some were annual reports, institutional histories, ideological treatises, and syllabi, while others were statements of mathematical principles, rate charts, technical manuals, and discussions of weights and measurements. The authors of these texts came from highly varied backgrounds. Some, like Mohandas Karamchand Gandhi and Rajendra Prasad, enjoyed national, even international, reputations, while others had achieved recognition only within the khadi industry, and then too, only within a state or locality. These authors wrote for a wide range of audiences, sometimes spinners, weavers, and employees of khadi organizations, other times for schoolchildren, teachers, politicians, and municipal governments. Nevertheless, they repeatedly articulated a conviction that their literary efforts were not singular but instead part of a larger literary project. They could do so partly because some khadi organizations had established *sahitya*, or literature, departments as early as 1922 to oversee the commissioning, editing, publication, and distribution of what soon came to be known as *khadi sahitya*, or literature about the khadi economy.

Why did a group of organizations charged with promoting the production and consumption of handspun, handwoven cloth require sahitya departments? What was khadi sahitya, and how can we distinguish it from other bodies of writing produced at the time? To

answer these questions, we must take a step back to consider the broader literary and political landscape in which khadi sahitya was located. The turn of the twentieth century marked a crucial moment in Indian writing about the economy as a growing number of economists and nationalist intellectuals turned their attention to crafting a specifically "Indian" political economy. By this, they meant a body of theory capable of grasping India's concrete economic circumstances, a move that necessarily entailed the rejection of many of the assumptions upon which colonial economic policies had been based.[1] As part of their efforts, these economists and intellectuals recommended a series of policies to revitalize the Indian economy, chief among them the protection of Indian industry, the reduction of taxes on agriculture, and tariff reform.[2] As the twentieth century advanced and the perceived successes of Soviet-style planning became clearer, Indian political economists devised ever more detailed proposals for state intervention in the economy. Though aware that very few of these proposals would garner the support of the colonial government, they nonetheless saw themselves as engaged in the critical task of formulating an economic agenda for an independent India.

Recent scholarship has sought to disentangle the rival visions of economic development current in the 1930s, 1940s, and 1950s. In doing so, it has demonstrated that the shape the post-colonial Indian economy would assume remained uncertain until at least a decade following independence.[3] While the majority of this scholarship has focused on visions of the economy that championed rapid industrialization in conjunction with some form of central planning, a few

---

[1] Bipan Chandra, *The Rise and Growth of Economic Nationalism in India: Economic Policies of Indian National Leadership, 1880-1905* (New Delhi: People's Publishing House, 1966).
[2] For a survey of these recommendations, see Chandra (1966); Joseph J. Spengler, *Indian Economic Thought: A Preface to Its History* (Durham: Duke University Press, 1971); and Bhabatosh Datta, *Indian Economic Thought: Twentieth Century Perspectives, 1900-1950* (New Delhi: Tata McGraw-Hill Publishing Company Ltd., 1978).
[3] Vivek Chibber, *Locked in Place: State-Building and Late Industrialization in India* (Princeton: Princeton University Press, 2003) and Benjamin Zachariah, *Developing India: An Intellectual and Social History* (New Delhi: Oxford University Press, 2005).

works have attempted to draw our attention to what they term "alternative" or "parallel" strands of economic thought.[4] One such strand, itself a "gradual and retrospective creation," sometimes goes by the name of Gandhian economics.[5] Seized upon as a resource by critics of 1950s- and 1960s-era development models, Gandhian economics became, from the late 1960s, a virtual synonym for "sustainable" and "participatory" economic development.[6] And yet as Benjamin Zachariah has argued in his discussion of late colonial era discourses on development, Gandhian economics was never "popular" but rather "elitist in origin and didactic in intent and tone."[7] In this respect, it shared much in common with other discourses—capitalist, nationalist, socialist, and communist—current at the time, none of which accorded more than the most fleeting space to economic knowledge produced by the masses. On the contrary, these and other discourses conceived of economic thought as a good best produced at the highest levels of society.

Perhaps unsurprisingly, historians have largely followed mid-twentieth-century historical actors in approaching the development of economic thought as primarily the preserve of elites. For instance, most accounts of modern Indian economic thought are organized around a series of "great thinkers," such as Dadabhai Naoroji, Mahadev Govind Ranade, Romesh Chander Dutt, Radhakamal Mukherjee, and occasionally, even M. K. Gandhi.[8] Moreover, studies of planning, that great engine of Indian economic policy in the immediate post-colonial period, have tended to center their narratives on P. C. Mahalanobis, Jawaharlal Nehru, and other elevated figures.[9]

---

[4] For an emphasis on industrialization and central planning, see B. R. Tomlinson, *The Economy of Modern India, 1860-1970* (Cambridge: Cambridge University Press, 2005 [1998]) and Datta (1978). For alternative visions of economic development see Ajit K. Dasgupta, *A History of Indian Economic Thought* (London: Routledge, 1993).
[5] Zachariah, 157.
[6] The quintessential statement on the subject is E. F. Schumacher, *Small is Beautiful: Economics as if People Mattered* (New York: Harper & Row, 1973).
[7] Zachariah, 156.
[8] Spengler (1971), Datta (1978), and Dasgupta (1993).
[9] Chibber (2003); Zachariah (2005); and Ramachandra Guha, *India After Gandhi: The History of the World's Largest Democracy* (New York: HarperCollins Publishers, 2007), 209-32.

Even the rare attempt to examine vernacular-language economic writing has focused almost exclusively on the contributions of university-educated intellectuals.[10] This approach to the production of economic knowledge mirrors an earlier generation's approach to the production of political knowledge.[11] Revisionist efforts to highlight the generativeness of subaltern politics achieved only mixed results, casting subalterns not as knowledge producers but as bearers of deep cultural understandings.[12] Similarly, though a large body of literature portrays peasants, artisans, and laborers as the architects of sprawling moral-economic universes, it rarely investigates their involvement in the development of political-economic thought.[13] A recent study of liberalism in late-colonial Bengal begins to remedy this deficiency insofar as it seeks to explain how some peasants came to articulate liberal arguments about the property-constituting capacities of labor.[14] However, its ultimate objective is to clarify the relationship between liberal political thought and political economy, not, as is my aim here, to examine the contributions of "ordinary" Indians to the production of macroeconomic knowledge.

This chapter investigates several of the areas in which non-elite Indians contributed to the generation of economic knowledge. It does so through an examination of khadi sahitya, which functioned as one of the principal media through which khadi institutions and khadi workers endeavored to explain the khadi economy to others. More specifically, it considers what khadi

---

[10] Francesca Orsini, *The Hindi Public Sphere, 1920-1940: Language and Literature in the Age of Nationalism* (New Delhi: Oxford University Press, 2002), 326-31.
[11] For instance, Anil Seal, *The Emergence of Indian Nationalism: Competition and Collaboration in the Later Nineteenth Century* (London: Cambridge University Press, 1968) and John Gallagher, Gordon Johnson, and Anil Seal, eds., *Locality, Province, and Nation: Essays on Indian Politics 1870 to 1940* (Cambridge: Cambridge University Press, 1973).
[12] Ranajit Guha, *Elementary Aspects of Peasant Insurgency* (New Delhi: Oxford University Press, 1983) and Ranajit Guha and Gayatri Chakravorty Spivak, eds., *Selected Subaltern Studies* (New York: Oxford University Press, 1988).
[13] Nita Kumar, *The Artisans of Banaras: Popular Culture and Identity, 1880-1986* (Princeton: Princeton University Press, 1988); Gyanendra Pandey, *The Construction of Communalism in Colonial North India* (Delhi: Oxford University Press, 1990); Prasannan Parthasarathi, *The Transition to a Colonial Economy: Weavers, Merchants and Kings* (Cambridge: Cambridge University Press, 2001)
[14] Andrew Sartori, *Liberalism in Empire: An Alternative History* (Berkeley: University of California Press, 2014).

sahitya can tell us about the knowledge production activities of three distinct groups: spinners and weavers; employees of khadi organizations; and producers of khadi sahitya. The remainder of this chapter is divided into four sections, the first of which argues that khadi sahitya can be distinguished from other "popular" forms of writing about the economy by the conditions of its production and circulation. That is, in contrast to other modes of popular economic writing, khadi sahitya arose in response to the specific challenges confronting actual economic producers. Moreover, non-elites assumed a disproportionate amount of responsibility for creating and distributing it. The second section investigates a subfield of khadi sahitya termed khadi mathematics, which modified prevailing mathematical conventions to make them more "useful" to the khadi economy. An examination of the khadi mathematics literature reveals that unlike many of their contemporaries, who sought to impose new metrological standards upon the Indian population, khadi officials approached "ordinary" Indians as knowledge producers capable of formulating metrological standards for themselves. The third section explores another subfield of khadi sahitya, this one concerned with currency. It considers the contributions of employees of khadi organizations to the decimalization of Indian coinage, emphasizing their efforts to embed the decimal system in local knowledge conventions. The final section examines the textbooks authored by producers of khadi sahitya. It demonstrates that such authors encouraged readers to produce knowledge about macroeconomic matters for themselves through close engagements with productive technologies. Thus, I argue that khadi sahitya provides us with a critical window into the contributions of "ordinary" Indians to the production of modern economic thought.

Popular Economics Literature

Khadi sahitya emerged at a time when Indians had begun to write about the economy in growing numbers. Although Indian critics of colonial rule had written extensively on political-economic matters since at least the mid nineteenth century, the early decades of the twentieth century witnessed an explosion of writing on the economy. This writing took a variety of forms, appearing as general articles, editorials, and letters to the editor in daily newspapers, and as peer-reviewed texts in specialist periodicals. Moreover, political bodies such as the All India Congress Committee (AICC) and the Congress Socialist Party (CSP) regularly issued books and pamphlets pertaining to economic issues as well as summaries of meetings and copies of resolutions.[15] Usually prepared in English and then translated into other Indian languages, these writings reached an influential but relatively circumscribed audience. Simultaneously, however, Hindi-language printing presses and publishing companies began to turn their attention to economic concerns, particularly questions relating to agriculture and the peasantry. Publishing houses released original political-economic texts in Hindi from as early as 1907, while Hindi-language journals such as *Madhuri* and *Saraswati* began to feature the writings of political economists only a few years later.[16] Such publications reached a relatively wider audience than their English-language counterparts but nonetheless circulated chiefly among the upper and middle classes. Troubled by this state of affairs, a loosely connected group of professional economists scattered throughout North India set themselves the task of producing what they termed a *popular* Hindi-language economics literature.

These professional economists defined "popular" in several ways. First, they argued that a popular economics literature was one that took all Indians as its audience. That is, it would

---

[15] Zachariah, 48-53.
[16] Francesca Orsini, *The Hindi Public Sphere, 1920-1940: Language and Literature in the Age of Nationalism* (New Delhi: Oxford University Press, 2002), 326-9.

address itself to farmers, laborers, and artisans in addition to the educated classes who had been the focus of prior writing on the economy. Hindi-language economists addressed their work to the Indian people not out of a democratizing impulse, however, or a commitment to egalitarianism. Instead, they repeatedly articulated a conviction that countries could not hope to improve their economic circumstances, much less achieve economic independence, until all their people possessed at least a basic understanding of the economy. Such an understanding, they claimed, could come only through the study of economics.[17] Second, these economists defined a popular economics literature as one written in Hindi, which they termed India's mother tongue and/or national language. But even in doing so they expressed no great pride in Hindi, which they described as woefully lacking in the technical vocabulary required for the scientific study of economics. Instead, they justified their privileging of Hindi on the grounds that the Indian people would learn best in a language with which they were (ostensibly) familiar.[18] And finally, proponents of a popular Hindi-language economics literature claimed that such a literature should be written in a simple, concise language. Vernacular economists variously characterized this language as one capable of being understood by anyone and akin to that spoken in the

[17] Many economists writing in Hindi made this claim, including Ganeshdatt Pathak, *Arthashastra Praveshika, arthat Arthashastra ke Mul Siddhant* (Allahabad: Indian Press, 1919); Radhakrishna Jha, *Bharat ki Sampattik Avastha* (Calcutta: Hindi Pustak Agency, 1920); Bhagwandas Kela, *Bharatiya Arthashastra* (Lucknow: Ganga Pustakmala Karyalay, 1925); Dayashankar Dube and Bhagwandas Kela, *Hindi mein Arthashastra aur Rajniti Sahitya* (Vrindavan: Bharatiya Granthmala, 1935); and Dayashankar Dube and Shankar Sahay Saxena, *Gramya Arthashastra (Yuktprant ke Highschool aur Intermediate Board ki Highschool Pariksha ke Gramya Arthashastra ke Pathyakram ke Anusar Likhit* (Allahabad: National Press, 1940).

[18] For discussions of Hindi's perceived inadequacies, see Dayashankar Dube and Bhagwandas Kela, *Hindi mein Arthashastra aur Rajniti Sahitya* (Vrindavan: Bharatiya Granthmala, 1935); Dayashankar Dube, Gadadharprasad Ambasth, and Bhagwandas Kela, *Arthashastra Shabdavali*, 4th ed. (Allahabad, Bharatiya Granthamala, 1949); and Raghuvir, Bhagwatsharan Adholiya, and Pannalal Baldua, *Arthashastra Shabd-Kosh* (Wardha: Govindram Seksariya Arth-Sahitya Prakashan Mandal, 1949). For characterizations of Hindi as India's mother tongue and/or national language as well as discussions of the importance of publishing in Hindi, see Amarnath Bali and Mohanlal, *Bharatiya Arthashastra* (Lahore: Virjanand Press, 1923/24) and Krishnakumar Sharma, *Arthashastra ke Mul Siddhant aur Unka Bharat mein Prayog* (Kanpur: Kishore Publishing, 1939), 1.

village.[19] One even pointedly warned that the language of popular economics texts should depart as far as possible from the administrative texts produced by the Mughal state and the English East India Company.[20] This rough consensus on what distinguished a popular work from a non-popular one constituted one of the primary frameworks within which much subsequent Hindi-language writing on the economy transpired.

The framework articulated by proponents of a popular economics literature commanded attention partly because many of its advocates maintained close ties with leading universities, publishing houses, and printing presses. Take one of the best-known Hindi-language economists, Dayashankar Dube, as an example. Born in approximately 1900, Dube completed his B.A. from Jabalpur in central India in 1917, then an M.A. in economics from Allahabad's Evening Christian College in 1919. Upon completing his M.A., Dube served as a research scholar in Allahabad University's economics department for one year and an economics instructor at Evening Christian College for two years before moving to Lucknow University in 1922. At Lucknow University, he taught classes in economics, mathematics, and administration, while also publishing widely in *Madhuri*, *Saraswati*, and other Hindi-language journals and testifying before the 1925 Indian Economic Enquiry Committee.[21] In addition, in 1923 he helped to found the Bharatiya Arthashastra Parishad (BAP), or Indian Economics Council, a voluntary association dedicated to the production of Hindi-language literature on the economy. Other founding members included the eminent economist and sociologist Radhakamal Mukherjee and the editor and publisher Dhularelal Bhargava.[22] Though BAP lacked the finances to maintain a

[19] Hanuman Prasad Goyal, *Vyapar aur Karigari* (Banaras: Bhagwan Pustakalay, 1938/39), 2 and Shivlal Sharma, *Gramya Sangathan* (Agra: Gramin Granthmala Karyalay, 1935), 1.
[20] Radhakrishna Jha, *Bharat ki Sampatik Avastha* (Calcutta: Hindi Pustak Agency, 1920), 3.
[21] Dayashankar Dube's *Videshi Vinimay* (Lucknow: Ganga Pustakmala, 1926), 8-9.
[22] Bhagwandas Kela, *Bharatiya Arthashastra*, Vol. 1 (Lucknow: Ganga Pustakmala, 1925), 13 and back inside covers.

publishing unit of its own, it provided editorial assistance to Hindi-language economists while also helping to identify suitable publishers for their work.[23] Publishing companies marketed some of the materials produced by BAP-affiliated authors as textbooks to government schools, national schools, and municipal libraries.[24] Other BAP materials, though not explicitly marketed as textbooks, seem to have been at least partially intended for use in schools and colleges.[25] Dube himself published a handful of books on the BAP imprint, among them an annotated bibliography of several hundred Hindi-language economics texts and a glossary of several thousand Hindi-language economics terms.[26] His connections to many of the leading figures and institutions in the Hindi publishing world helped him to promote his vision of a popular Hindi-language economics literature in a wide variety of forums. Partly as a result, he and some of his colleagues exerted an outsized influence in dictating what a popular economics literature would look like.

Khadi sahitya shared some of the same founding assumptions as the popular Hindi-language economics literature described above insofar as it also addressed itself to the masses and employed relatively straightforward language. However, it arose in a radically different institutional context and, partly as a result, betrays a different set of concerns. In contrast to the writings of Dube and his colleagues, which took shape in university economics departments and the occasional secondary school, khadi sahitya emerged out of the khadi project and its intimate connections to the laboring activities of peasants and artisans. Although most early works of

---

[23] Dularelal Bhargava's own publishing line Ganga Pustakmala published at least two BAP texts. BAP played a role in the preparation and publication of at least eighteen Hindi-language economics books between 1925 and 1949.
[24] For example, Bharatiya Granthamala marketed Dayashankar Dube, Bhagwandas Kela, and Gadadharprasad Ambasth's *Arthashastra Shabdavali* (1932); Dayashankar Dube and Bhagwandas Kela's *Hindi mein Arthashastra aur Rajniti Sahitya* (1935); and Janaglal Gupta and Bhagwandas Kela's *Kautilya ke Aarthik Vichar* (1935 or earlier) to schools and libraries. See Dube and Kela (1935), back inside cover.
[25] For example, Dayashankar Dube's *Videshi Vinimay* (Lucknow: Ganga Pustakmala, 1926).
[26] Dayashankar Dube, Bhagwandas Kela, and Gadadharprasad Ambasth's *Arthashastra Shabdavali* (1932); Dayashankar Dube and Bhagwandas Kela's *Hindi mein Arthashastra aur Rajniti Sahitya* (1935);

khadi sahitya took the form of annual reports and bulletins highlighting the progress of khadi work in the provinces, khadi institutions also published a series of "practical" texts for their *karyakartas*, or salaried employees, and others interested in carrying out khadi work in their homes. Such texts offered guidance on the operation of the spinning wheel and other productive technologies as well as suggestions for khadi officials intent upon improving their business acumen.[27] As AISA and other khadi institutions diversified their activities in the 1930s and 1940s, they expanded their range of publications to include political-economic treatises, institutional histories, periodicals, manifestos on science and mathematics, syllabi, and textbooks. *Khadi sahityakars*, or producers of khadi sahitya, justified this diversification with reference to the perceived needs of the khadi project. For example, they argued that mathematical treatises would teach spinners to perform basic calculations while textbooks would prepare karyakartas to manufacture and repair machinery. Even political-economic texts would perform a practical function by outlining a positive economic agenda for an independent India. Thus, more than the popular economics literature championed by Dube and others, khadi sahitya emerged as a response to the challenges confronting economic producers.

Moreover, most of the individuals who authored works of khadi sahitya had themselves spent years working as small-scale producers. This is because most khadi sahityakars were first and foremost karyakartas, or full-time, salaried employees of AISA and other khadi organizations. The clear majority of karyakartas hailed from India's small towns and villages, where they had previously worked as agriculturalists or minor clerks. Although most enjoyed at least some schooling, few if any had enrolled in college; many others had dropped out after

[27] For instruction on the use of productive technologies, see Maganlal Khushalchand Gandhi, *Charkha Shastra* (Ahmedabad: Maganlal Khushalchand Gandhi, 1922). Originally written in Gujarati, it was translated into Hindi by an unnamed student taking lessons from Gandhi at Satyagraha Ashram. For business suggestions, see All India Khadi Information Bureau, *Khadi Bulletins, 1923* (Sabarmati: Khadi Information Bureau, 1923).

completing primary school or midway through secondary school. Furthermore, after entering AISA's service, they participated in an extensive training program designed to familiarize them with the minutiae of the cloth production process before receiving a permanent assignment at a sales depot or production center. And even after taking up their permanent assignment, karyakartas devoted at least two hours a day to spinning or weaving and several more to overseeing and advising small-scale khadi producers.[28] While khadi sahityakars were undoubtedly among the best educated of karyakartas, their life experience diverged sharply from that of Dube and his colleagues. Indeed, we can approach karyakartas—and, by extension, sahityakars—as particularly compelling examples of non-elite Indians writing—and producing knowledge—about the economy.

Khadi sahitya differed from the so-called popular economics literature in another crucial respect, however: the conditions of its circulation. Although both bodies of literature claimed to address similar audiences—the formally illiterate peasants, artisans, and laborers who made up the bulk of the Indian population—they employed different methods for doing so. Whereas Dube and his colleagues proposed that their texts be taught in colleges and secondary schools, presumably to trickle down from there to the masses, khadi sahityakars could rely on a dense network of khadi institutions to transport their work to even those individuals who would never set foot inside a school. In other words, khadi sahityakars recognized that karyakartas and, to a lesser extent, schoolteachers would assume a disproportionate amount of responsibility for transmitting the content of khadi sahitya to its intended audience. This is because even those spinners who could not read a given text might expect to have parts of it read out loud to them

[28] *All India Spinners Association Papers, 1925-1948*, Nehru Memorial Museum and Library, Private Papers collection, microfilm, R. 2880 #1 and Shri Gandhi Ashram, *Karyavahi Pustika: Prabandhak Samiti*, Register #2 (1938-1946).

or, more likely, communicated to them through their interactions with khadi workers. These workers might not have viewed their interactions with spinners and weavers as explicitly pedagogical in thrust. Nevertheless, such interactions transpired fairly regularly—karyakartas were expected to meet with certified spinners and weavers resident in their area at least once a week—and in such a way that myriad forms of knowledge could be transmitted relatively easily through verbal instructions and material processes.[29] As a result, the circulation networks available to khadi sahityakars ensured that the latter's texts stood a far better chance of reaching a "popular" audience than those produced by Dube and other proponents of a popular economics literature.

Khadi mathematics

The late 1930s and the early 1940s marked an especially important turning point in the history of khadi sahitya as a new generation of authors began to publish on a wide range of new subjects. One of those subjects was what khadi sahityakars came to call *khadi ganit*, or khadi mathematics. Though sahityakars never offered an explicit definition of khadi mathematics, they used the term to refer to discussions of the mathematical formulae used to calculate the strength, uniformity, and fineness of yarn; the techniques for converting between different units of measurement; the means of instructing mathematically "illiterate" Indians in basic counting, addition, subtraction, multiplication, and division; and the production of tables estimating the quality and quantity of labor individuals, families, and villages would need to expend in order to meet their basic clothing and nutritional needs. As this section will seek to demonstrate, the architects of khadi mathematics had two primary aims: first, to acquaint a general audience with

[29] *All India Spinners Association Papers, 1925-1948*, Nehru Memorial Museum and Library, Private Papers collection, microfilm, R. 2880 #1.

the material and conceptual labor required to perform basic mathematical calculations and, second, to modify existing mathematical conventions to make them more useful to the khadi economy. Moreover, they also worked to standardize khadi mathematics so that it would assume a uniform shape across the entire khadi economy. Peasants and artisans made important contributions to the field of khadi mathematics, nowhere so much as where metrological systems were concerned. Although much of the historical literature emphasizes the close ties between metrological systems and political authority, attention to khadi sahitya points us in a different direction. Indeed, far from attempting to impose new weights and measures upon the Indian people in a top-down fashion, khadi sahityakars approached "ordinary" Indians as knowledge producers capable of formulating metrological standards for themselves.

It is difficult to overstate the economic significance of metrological systems, since they play a crucial role in determining how much of a given product can be exchanged and at what price. Partly as a result, political authorities have typically exercised tight control over weights and measures, approaching them as almost unassailable markers of sovereignty.[30] And yet as the pioneering scholar of historical metrology Witold Kula has argued, measures are never exclusively economic. Instead, they also possess a "social content" that imbues them with value and meaning.[31] Perhaps for this reason, some communities have resisted attempts to introduce new metrological systems, particularly those they regarded as unjust or unintelligible. For instance, Sudipta Sen's account of the East India Company's attempts to "settle" Indian marketplaces foregrounds the politico-cultural conflicts produced by the imposition of new metrological and pecuniary standards.[32] Similarly, Kula's study of the introduction of the metric

[30] Witold Kula, *Measures and Men*, Trans. R. Szreter (Princeton: Princeton University Press, 1986), 18-23.
[31] *Ibid*, 3-4.
[32] Sudipta Sen, *Empire of Free Trade: The East India Company and the Making of the Colonial Marketplace* (Philadelphia: University of Pennsylvania Press, 1998).

system in eighteenth- and nineteenth-century France demonstrates the tremendous amount of work required to displace already existing non-metric systems.[33] Still, for all their attention to conflict and resistance, the story Kula and others tell about metrological change is remarkably straightforward: abstract measures slowly but surely replaced contextual measures derived from "concrete phenomena in daily life."[34] In the South Asian context, this story takes a special form since the colonial state is often credited with imposing some degree of uniformity upon an almost impossibly varied metrological landscape.[35] However, even as late as the mid-1950s, a wide range of local, regional, and imperial systems of measurement prevailed in different parts of the subcontinent, meaning that proponents of metrological reform had to replace not a single system but multiple systems.[36] Khadi officials and karyakartas aspired to do just that.

"Standardization" is not a term closely associated with the khadi economy, which in the popular imagination at least more often signifies its antithesis. However, khadi officials and karyakartas placed a high value on standardization, which they took to be a minimum condition for the smooth running of the khadi economy. Indeed, works of khadi sahitya are littered with efforts to familiarize readers with accounting, banking, and manufacturing protocols, and to train them in the proper names for different parts of the charkha.[37] But khadi sahityakars paid special attention to metrological standards, perhaps motivated by the recognition that weights and measures impinged closely upon virtually every aspect of spinners and weavers' lives. After all,

---

[33] Kula, 244-53.
[34] *Ibid*, 3-4.
[35] Sen (1998) and Goswami, *Producing India: From Colonial Economy to National Space* (Chicago: The University of Chicago Press, 2004), 85-6.
[36] Anil Kumar Acharya, *History of Decimalisation Movement in India* (Calcutta: Indian Decimal Society, 1958), 1-4.
[37] For instance, Satish Chandra Das Gupta, *Khadi Manual*, Vol. 1 (Calcutta: Khadi Pratisthan, 1924); *Shri Gandhi Ashram-Charkha Sangh: Ashram-Vidhan* (Meerut: Ramswarup Sharma, 1934); Akhil Bharat Charkha Sangh, *Magan Charkha* (Ahmedabad: Akhil Bharat Charkha Sangh, 1940); and Shri Gandhi Ashram, *Hisab Pranali tatha Vyavastha Sambandhi Hidyatein* (Meerut: Shri Gandhi Ashram, 1940).

without at least a rudimentary understanding of the metrological system employed by the khadi economy, spinners could not determine how much yarn they had spun, the quality of yarn they had spun, or the quantity of wages to which they were entitled. Moreover, they would find it near impossible to exchange their yarn for khadi and other goods if they could not convert between different units of measurement. As a result, metrological standardization—of "systems of counting, instruments of counting, [and] methods of using these instruments"—became a primary emphasis of the khadi project.[38]

For an understanding of how metrological standardization operated in the context of the khadi economy, it is best to turn to the khadi mathematics literature, particularly the writings of the longtime karyakarta and AISA trustee Krishnadas Gandhi. Gandhi authored four texts on khadi mathematics, including the earliest surviving Hindi-language example.[39] The first underwent four print runs between 1940 and 1957 for a total of 15,000 copies. The second was published first in 1945 and then again in 1954. We do not have figures for the first print run, but the second consisted of 3,000 copies. The third volume also underwent two print runs—one in 1949, the other in 1957—for a total of 8,000 copies. We know very little about the fourth volume save that it was published once in 1955 and may have enjoyed prior or subsequent print runs.[40] While focused on different subjects, each volume offered guidance on the forms of calculation with which karyakartas and khadi producers should be familiar. For example, the first volume provided instruction in how to convert between different units of measurement, as well as how to calculate the time required to spin a given quantity of yarn. The second instructed readers in how

---

[38] Kula, 94.
[39] Krishnadas Gandhi, *Katai Ganit, Bhag 1: Gaz aur Tar, ya Sut ki Lambai ke Nap* (Kashi: Akhil Bharat Sarv Seva Sangh Prakashan, 1957 [1940]).
[40] Krishnadas Gandhi, *Katai Ganit, Bhag 1*; *Katai Ganit, Bhag 2: Sut ka Ank* (Maganwadi, Akhil Bharat Seva Sangh, 1954 [1945]); *Katai Ganit, Bhag 3: Sut ka Vyas* (Kashi: Akhil Bharat Sarv Seva Sangh Prakashan, 1957 [1949]); and *Katai Ganit, Bhag 4* (Sarv Seva Sangh, 1955).

to calculate yarn count, an index of yarn's relative fineness. While interesting in and of itself, the mathematical information contained in these texts is significant primarily for what it tells us about the circumstances under which knowledge of weights and measures was produced. For, as khadi sahityakars repeatedly emphasized, karyakartas introduced new measures not of their own initiative, but at the instance of small-scale producers.

Let us start with an example drawn from Gandhi's second book on khadi mathematics. In this book Gandhi reveals that khadi institutions have sometimes found it necessary to invent new units of measurement, that is units unacknowledged as such by prevailing social conventions. Just as many readers may have learned to recognize the meter and yard as standard measures of length, many Indian contemporaries of Gandhi would have learned to recognize the *gaz* and *gundi*. And yet as Gandhi tells us, khadi workers decided to introduce a new measure of length, the *pati*, in 1942 for a very specific reason: the smallest standardized units of measurement available to them were too large to accommodate the needs of the spinners with whom these karyakartas worked. Even by the early 1940s, many spinners could afford to procure only enough cotton to produce very small quantities of yarn. Other spinners worked the charkha only occasionally, thus producing small quantities of yarn as well. At least in the eyes of some khadi officials, many such spinners struggled to perform the mathematical labor required to determine what percentage of an already existing unit of measurement of yarn they had produced.[41] These officials also worried that some spinners could not even count, thus making it impossible for them to calculate the count of yarn they had spun and, by extension, the quantity of wages they were owed.[42] While some officials expressed the opinion that spinners would just have to do the best they could, others proposed introducing a new, smaller unit of measurement that would

[41] Krishnadas Gandhi, *Katai Ganit, Bhag 2*, 22; 71-3.
[42] *Ibid*, 35; 6; 11.

obviate the need for spinners to perform all but the simplest calculations. The latter faction won out, and the pati was born.[43]

Khadi sahitya recounts many other similar decisions, each of them illustrative in one way or another of khadi institutions' determination to make mathematics more accessible to peasants, laborers, and artisans. To take just one additional example, khadi workers and spinners frequently had to convert between *ratals* and *tolas*, two units for measuring weight. The ratal was the larger unit and thus better for measuring the substantial quantities of yarn produced by Indian textile mills. The tola, by contrast, was far smaller and thus better suited to handspinners. While existing mathematical conventions called for tolas to be converted into ratals at a ratio of 38 8/9th tolas to 1 ratal, AISA determined that this ratio was too complicated and prone to generating unwieldy numbers. Instead, it proposed that for the purposes of the khadi economy, the ratio be altered to 40 tolas to 1 ratal.[44] Most khadi institutions embraced this change, presumably because the rationale offered for it made sense to them. After all, the new ratio promised greater simplicity and ease of use even if it also implied (at least initially) lesser precision.

Although hardly revolutionary in and of themselves, what these decisions suggest is a commitment to reshaping standardized mathematics to meet the needs of small-scale producers rather than forcing small-scale producers to accommodate themselves to standardized mathematics. In the mid twentieth century when much of the khadi mathematics literature was produced, the colonial and later the post-colonial state, along with Indian and British

---

[43] Krishnadas Gandhi provides an additional explanation for the invention of the pati in 1942. 1942 was the year when M. K. Gandhi called for the introduction of the yarn currency, a system of exchange in which yarn could be used to "purchase" basic necessities. M. K. Gandhi called for khadi officials to devise a way for spinners to exchange even very small quantities of yarn for essential items, such as salt or sewing needles. See Krishnadas Gandhi, *Katai Ganit, Bhag 2*, 71.
[44] *Ibid*, 2-3.

industrialists, various Chambers of Commerce, and other influential economic actors, increasingly marshalled quantitative data to make arguments about the normative organization of the economy. Khadi institutions did the same, preparing elaborate reports on projected khadi production and sales figures, along with tables depicting the number of spinners and weavers employed by the khadi industry at a given point in time.[45] In one sense, this style of quantitative argumentation was far from new. After all, Dadabhai Naoroji's late-nineteenth-century denunciations of colonial rule rested in no small part on the many figures he had assembled to rebut British claims about India's "material progress" and to promulgate his own drain of wealth theory.[46] But in another sense, the production and circulation of quantitative data had increased so dramatically by the mid twentieth century as to become something qualitatively different. Indeed, to many Indians anticipating the end of colonial rule, mathematics and science held out the promise of a better future, one in which universal logic and rationality trumped the vagaries of imperialism. However, while most Indians looked to university-trained scientists and technocrats to generate mathematical knowledge, very few considered the possibility that peasants and artisans might also serve as knowledge producers.[47]

Karyakartas and sahityakars were able to imagine this possibility primarily because they maintained a very particular relationship to mathematics. This relationship distinguished them from Naoroji and other economic nationalists, who challenged the adequacy of figures proposed

---

[45] Such reports and tables are a constant feature of annuals, including Akhil Bharatvarshiya Charkha Sangh, *Salana Report, 1925-26* (Ahmedabad: Akhil Bharatvarshiya Charkha Sangh, 1926); Akhil Bharat Charkha Sangh, *Varshik Vivaran: 1940* (Wardha: Akhil Bharat Charkha Sangh, 1941); and Akhil Bharat Charkha Sangh, *Vishesh Karyakarta ka Sammelan: Hyderabad Dakshin, Ta. 3 se 5 April, 1951* (Sevagram: Akhil Bharat Charkha Sangh, 1951).

[46] For one example, see Dadabhai Naoroji, *Poverty and Un-British Rule in India*, reprint (Government of India Publications, 1962 [1901]).

[47] Gyan Prakash, *Another Reason: Science and the Imagination of Modern India* (Princeton: Princeton University Press, 1999). Prakash also notes that some Indians attempted to recuperate what they termed the ancient field of "Hindu mathematics."

by the colonial state on the grounds that they were the products of inaccurate data or insufficiently precise mathematical formulae while paying little heed to the general intelligibility of said figures or the complexity of the mathematical labor required to produce them. By contrast, khadi sahityakars and the institutions with which they were associated worried less about the "truth" or accuracy of figures and far more about their accessibility. By accessibility, I mean the degree to which even individuals with no formal mathematical training could understand a figure's meaning and, more importantly, the concrete steps through which it had been generated. Or perhaps it would be more appropriate to say that khadi sahityakars regarded a figure as accurate only to the extent that it was also accessible, that is, the extent to which even a non-specialist could comprehend, make judgments about, and even replicate the mathematical work required to "produce" it.

Spinners and weavers did so in a variety of ways, usually by "failing" to complete their work in the fashion prescribed by AISA. For instance, in the early 1940s, some Bihari spinners "informed" local karyakartas that they could not count, presumably by repeatedly preparing yarn bundles of the "wrong" size and quantity. In response, khadi officials employed by the Bihar branch debated how to resolve this problem, concluding that a critical mass of spinners would have to be taught counting at some point in the near future.[48] But Bihari spinners were not alone in their innumeracy and so karyakartas and sahityakars stationed in different parts of the country set themselves the task of developing a more uniform solution.[49] They did so by attempting to determine up to what number the average villager could count, concluding that many could not comfortably work with numbers larger than twenty.[50] As a result, one leading official declared,

---

[48] "Akhil Bharat Charkha Sangh Bihar Shakha, Madhubani (Darbhanga): Suchna-January, 1942," Rajendra Prasad Private Papers, National Archives of India, F.3-A/42, 4.
[49] Krishnadas Gandhi makes much the same point in *Katai Ganit, Bhag 2*, 35.
[50] K. G. Mashruwala, "The So-Called Decimal Coinage," *Harijan* 10.14 (12 May 1946), 126 and Lele (1961), 8.

khadi mathematicians took pains to ensure that conversion ratios used to establish the length of yarn permitted spinners to work with numbers no larger than twenty or powers of twenty.[51] Here again, then, khadi mathematics' elaboration proceeded not through the application of logic and abstract reasoning to an already existing body of thought but through continuous negotiation between karyakartas and small-scale producers.

Khadi sahityakars contributed to this dynamic by encouraging spinners and weavers to exercise control over their own mathematical labor. That is, they urged small-scale producers to learn to solve mathematical problems for themselves and sought to assist them in doing so by making their own publications as accessible as possible. For instance, some sahityakars emphasized that the same mathematical problem could be approached in multiple ways. Krishnadas Gandhi made this point in his 1940 volume in the context of a discussion about conversion between different units of measurement. In it, he advised instructors at khadi institutions and primary schools that their students should gain familiarity with all the potential methods of arriving at the answer to a problem and provided a lengthy explanation of each method.[52] Another sahityakar did much the same in his 1938 book on spinning, asserting that spinners could calculate the count and strength of yarn using three different methods.[53] Gandhi and many other producers of khadi sahitya attempted to facilitate readers' understanding of these methods by presenting them with a series of practice questions. These questions called for readers to convert between two units of measurement or to calculate the speed at which they could spin a given quantity of yarn on a particular type of charkha. More importantly, they also

---

[51] Lele 1961, 8.
[52] Krishnadas Gandhi, *Katai Ganit, Bhag 1*, 10-2.
[53] Vinoba Bhave, *Mul Udyog: Katna [Shikshakon ke liye Pathyakram ka Spashtikaran]* (Sevagram: Hindustani Talimi Sangh, 1938), 16. Bhave's text was published five times for a total of 9,500 copies.

showed readers the various steps through which they might arrive at an answer to the questions.[54] In doing so, they made explicit the content of the work required to perform even the most basic mathematical tasks. Moreover, they demonstrated to readers that the latter enjoyed at least a modicum of freedom when determining their approach to a mathematical problem. If readers were unfamiliar with the unitary rule, they could employ basic division instead. If they preferred not to weigh their yarn on a scale, they could employ alternative forms of measurement.[55] The important thing, as Gandhi argued in the introduction to his text, was to avoid the use of big numbers when small numbers would suffice and to reject complicated mathematical equations in favor of simpler ones.[56]

Similarly, khadi sahityakars urged small-scale producers to resist the attempts of merchants and large-scale producers to concentrate weights and measures in their own hands. While, on the one hand, sahityakars worried that cunning middlemen would employ defective weights in an effort to take advantage of naive artisans, on the other hand, they recognized that small-scale producers required weights, scales, and other measuring implements in order to generate mathematical knowledge for themselves. But even in the mid twentieth century, measuring implements were so expensive and uncommon as to be out of reach for most participants in the khadi economy. As a result, one khadi sahityakar made the seemingly preposterous recommendation that Indians manufacture their own scales out of lemon rinds. Or as this individual put it:

> [W]e Indians have a habit of eating lemons. Therefore, we can make a set of scales (*taraju*) by cutting a lemon into two equal parts, removing the juice, peeling the lemon,

---

[54] Krishnadas Gandhi, *Katai Ganit, Bhag 1*, 13-9 and 112-7. Also see Dattoba Dastane, *Bunai: Saranjam, Kriyaen aur Ganit* (Kashi: Akhil Bharat Sarv Seva Sangh Prakashan, 1962 [1948]), 376-8 and Vitthal Ambadas Santoshwar, *Bunai Ganit (Adhikrit Pathya Pustak)* (Bombay: Khadi aur Gramodyog Commission, 1959), 120-7.
[55] Bhave 1938, 16-7.
[56] Krishnadas Gandhi, *Katai Ganit, Bhag 1*, 4.

> and cleaning it. With the aid of this set of scales, we can calculate yarn count using the weight of the coins in circulation at the time.[57]

We have no evidence to suggest that spinners and weavers heeded the call to manufacture lemon rind scales, but fortunately the call's significance lies elsewhere. In encouraging small-scale producers to craft their own measuring implements, the khadi sahityakar affirmed the importance of control of one's own mathematical labor. But here control implies not only a basic familiarity with mathematics but also access to the instruments used to engage that mathematics.

Though spinners and weavers did not formally co-author the metrological texts examined here, their influence on them is indisputable. This is because, consciously or not, small-scale producers extended the purview of khadi mathematics through their everyday practices. When spinners and weavers lacked appropriate units of measurement, khadi officials created them. When spinners and weavers had trouble employing existing conversion ratios, karyakartas modified them. But we should not understand khadi officials and karyakartas as the sole or even primary agents of this process, for khadi producers initiated change in the first place by making visible the limitations of prevailing mathematical conventions. This point is important because a large strand of the historiography examines how peasants, artisans, and other low-status Indians received and redeployed understandings of the economy produced elsewhere. This historiography has been generally quite keen to portray the Indian masses as agentive subjects capable of comprehending and working to alter their economic situation. However, it has rarely examined how the Indian masses contributed to the production of conceptual understandings of the economy and, by extension, to the production of the economy itself. Attention to khadi sahitya helps us to explore this largely neglected dimension of economic life while reminding us

[57] Lele (1961), 12. This suggestion is attributed to C. Rajagopalachari, whose contributions to khadi mathematics I will discuss in the next section.

of the role of another group of non-elites in standardizing and popularizing these understandings. The next section turns to that group, khadi karyakartas, and their contributions to the production of economic knowledge.

Decimalization

The khadi economy faced one of its greatest challenges in April 1957 when the Indian government began to implement the decimalization of India's currency system. *Decimalization* refers to the process by which a currency pegged to non-decimal denominations is modified so as to conform to the decimal system instead. Despite its historical contributions to the development of the decimal system, India came relatively late to decimalization, which by the mid 1950s played a key role in structuring international trade and other macro-level economic relations. Although khadi sahityakars writing in the mid 1940s had successfully resisted the imposition of decimalization, sahityakars writing in the mid 1950s and early 1960s confronted a changed landscape, one in which leading representatives of the Indian state considered the decimal system all but indispensable to Indian economic development. But karyakartas had spent the previous two decades struggling to make non-decimal systems intelligible to spinners and weavers; the introduction of the decimal system threatened to render much of their labor useless. This section examines karyakartas' response to decimalization, in particular their attempts to embed the decimal system in local society. In doing so, it foregrounds the everyday work required to make a macro-level convention such as the decimal system function. Thus, here the decimal system is not so much an internationally recognized numerical system as an outgrowth of karyakartas' conceptual and material labor.

Advocates of the decimalization of Indian currency had been lobbying since at least the second half of the nineteenth century to overhaul the Indian system of coinage. Their efforts picked up steam from 1930, when a group of economists, statisticians, and scientists—including the future mastermind of the Second Five Year Plan, Mahalanobis—constituted the Indian Decimal Society (IDS), an organization dedicated to the standardization and decimalization of Indian weights and measures. The Society proposed a draft decimal coinage bill in 1944, which the government introduced in the Central Legislative Assembly in slightly modified form in February 1946.[58] Although up to that point, the basic unit of Indian currency, the *rupee*, could be subdivided as follows—1 rupee = 16 *annas* = 64 *pice* = 192 *pies*—the bill called for the ratio to be changed to 1 rupee = 100 *paise*. The rupee is pegged to the decimal system in the latter scenario but not in the former because the decimal system uses ten or a power of ten, such as 100, as its base. The bill's supporters championed decimalization on the following grounds: that it would encourage the expansion of trade and commerce while simultaneously reducing the mental labor required to perform mathematical calculations.[59] And yet, much to their dismay, the legislation never came up for a vote. An IDS joint secretary subsequently blamed M. K. Gandhi for the bill's failure, arguing that the latter had "issu[ed] practically a *fatwa*" against it![60]

The historical record offers little support for the joint secretary's contention that Gandhi singlehandedly derailed the decimal coinage bill. However, it is true that Gandhi articulated strong objections to it. Writing in the pages of *Harijan*, his weekly journal, he called for the government to defer such a consequential decision until the legislature had passed entirely into

---

[58] Anil Kumar Acharya, 1-6.
[59] The bill read: "Modern trade and commerce demand speed and simplicity in the methods of computation, to achieve which there is nothing to compete with the decimal system which has gradually displaced all other systems in most of the advanced countries of the world." Quoted in M. K. Gandhi, "Decimal Coinage and Its Cost," *Harijan* 10.7 (24 March 1946), 53.
[60] Acharya, 6.

Indian hands. Moreover, he speculated that the poor would suffer at the hands of rapacious merchants in the transitional period when non-decimal coinage remained in circulation.[61] Gandhi referred interested readers to the writings of K. G. Mashruwala, a close colleague since at least the time of the 1930 Salt March. Mashruwala had made an extensive study of the decimal system, the immediate implementation of which he too opposed. Mashruwala's argument rested on two claims relevant to the current discussion: first, that the decimal system was not nearly as simple as its supporters claimed and, second, that the decimal system's simplicity, to the extent it existed, applied mainly to written rather than oral calculations. In support of his first claim, he asserted that it is much easier to divide a unit into halves than into fifths or tenths.[62] Here, he is in agreement with Kula, who has argued that a high capacity for "dichotomous division," i.e. the division of a unit into two parts, has historically been the chief feature of enduring metrological systems. For instance, metrological systems that employed twelve, sixteen, or twenty as their base number were far more common in early modern Europe than those that employed ten for the simple reason that the former could be subdivided by two more times without resorting to fractions than the latter.[63] Or, in Mashruwala's words: "A child of seven would be able to divide a piece of string into 2, 4, 8 or even 16 equal parts with greater ease and without a measuring rod than an educated adult could divide it into $1/10^{th}$ or $1/5^{th}$." And in support of his second claim, he suggested that an uneducated and largely innumerate adult would have a difficult time handling the large numbers—"35 cents, 48 cents, 72 cents etc."—favored by the decimal system. By contrast, an educated professional working with pen and paper would have little trouble grappling with such figures.[64] And yet despite these and other arguments that the decimal

[61] M. K. Gandhi, "Decimal Coinage and Its Cost," *Harijan* 10.7 (24 March 1946), 53-4.
[62] Mashruwala, 126.
[63] Kula, 82-3.
[64] Mashruwala, 126.

system's abstractions could never provide the same ease of use as khadi mathematics, decimalization became a reality from April 1957. What did karyakartas, some of them indefatigable proponents of a simplified mathematics, do then?

For starters, they embraced decimalization, perhaps none more so than Dwarkanath Lele, a high-ranking khadi official and self-proclaimed inventor of khadi mathematics, who published a text on the decimal system in 1961. In that text, Lele called for khadi institutions to set an example for the rest of the country by immediately—and completely—decimalizing. Indeed, he claimed to have made an intensive study of the subject, as a result of which he could state with confidence that Indian arithmetics had long been grounded in the decimal system, at least on a conceptual level.[65] Lele's argument was not implausible: much scholarship credits Indian mathematicians with developing a decimal-based numbering system as early as the start of the Common Era—albeit one that had largely fallen out of use by the twentieth century.[66] More unexpected was his assertion that khadi institutions had *already* played a key role in reintroducing the decimal system to the country. They did so, Lele argues, at the instigation of M. K. Gandhi, who though he knew nothing about mathematics, intuited that 1,000 would make an ideal base number. At his insistence, the required would-be members to submit 2,000 (that is, 1,000 x 2) gaz of yarn along with their membership applications in 1924.[67] In addition, AISA, established at Gandhi's insistence in 1925, briefly required its members to submit a donation of 1,000 gaz of yarn each month.[68] From this, Lele concludes that Gandhi had already made 1,000, and through it the decimal system, a basic unit for measuring length, weight, and even currency

---

[65] Lele 1961, 2-3.
[66] In Lele's view, the *chaturthman paddhati*, a mathematical system whose base unit could be divided into four and/or powers of four, had largely displaced the *dashman paddhati*, or decimal system, in many parts of India.
[67] The gaz, as mentioned above, was a unit of measurement approximately equal in size to the yard. In 1924, it would have been the standard unit for measuring the length of yarn.
[68] Lele 1961, 9.

in the khadi economy. Although Lele concedes that few individuals, including Gandhi, initially recognized the importance of this decision, he cites Kalidas's invocation that "the meaning of what [great] men say becomes apparent only later." Moreover, he terms Gandhi's intuition a "*paigam*," or message, comparable to that which Gandhi received in 1909 when traveling on a ship from England to South Africa. The result of that earlier paigam, of course, was *Hind Swaraj*, often regarded as Gandhi's *magnum opus*.[69]

We can read Lele's argument about the khadi economy and its early embrace of decimalization in multiple ways—for instance, as an assertion of khadi's modernity, originality, and/or rationality. But more important here is what Lele's claim tells us about the strategies karyakartas employed to make the decimal system intelligible to the spinners and weavers with whom they worked. For karyakartas did not merely describe the decimal system's formal properties to their constituents but instead attempted to embed that system in older systems of knowledge. Doing so required two parallel moves: first, a demonstration that on a purely material level, spinners could use the decimal system in the same way they had previously used non-decimal systems and, second, the development of conceptual resources to assist spinners in remembering the decimal system's basic properties.

Lele provides examples of both strategies, the first of which he attributes partly to the INC leader C. Rajagopalachari. In the mid to late 1920s when Rajagopalachari allegedly articulated this strategy, he was engaged in constructive work in Madras Presidency; he would subsequently become the chief minister of Madras state and the founder of the Swatantra Party. Rajagopalachari suggested that spinners would encounter fewer difficulties determining appropriate compensation for their labor if taught to recognize that the coins they carried in their

[69] *Ibid*, 13-4. Though Lele writes that Gandhi undertook his trip in 1906, Lele is clearly referring to Gandhi's 1909 voyage.

pockets had a standardized weight corresponding to certain fractions of the *tola*.[70] For example, a one-rupee coin weighed approximately the same as one tola, an eight-anna coin weighed approximately the same as half a tola, and a four-anna coin weighed approximately the same as a quarter of a tola. As a result, instead of investing in weights of their own or even learning how to use those weights, spinners could memorize a handful of statements (for example, the weight of a one-rupee coin is equal to one tola) and apply them using instruments ostensibly ready-to-hand. Lele approved of this tactic and, in the wake of the adoption of the decimal system, recommended that spinners be acquainted with the weights of the new coins manufactured by the Bombay mint. As a spur to this effort, he published a conversion table listing the respective weights of one-paisa, two-paisa, five-paisa, ten-paisa, twenty-five-paisa, fifty-paisa, and one-rupee coins.[71] While in Rajagopalachari's hands, conversion tables served as measuring aids, insofar as they made it possible for spinners to determine how many tolas of yarn they had produced even in the absence of weights, in Lele's hands conversion tables also served as reminders that the new decimal coinage could be used in the same way as the old non-decimal coinage. That is, spinners would not need to learn an entirely new numeracy system if only karyakartas did the work of showing them that, for everyday purposes at least, the new coins functioned in much the same way as the old ones.

[70] The tola was a measure of weight in use at the time.
[71] Lele 1961, 10-2.

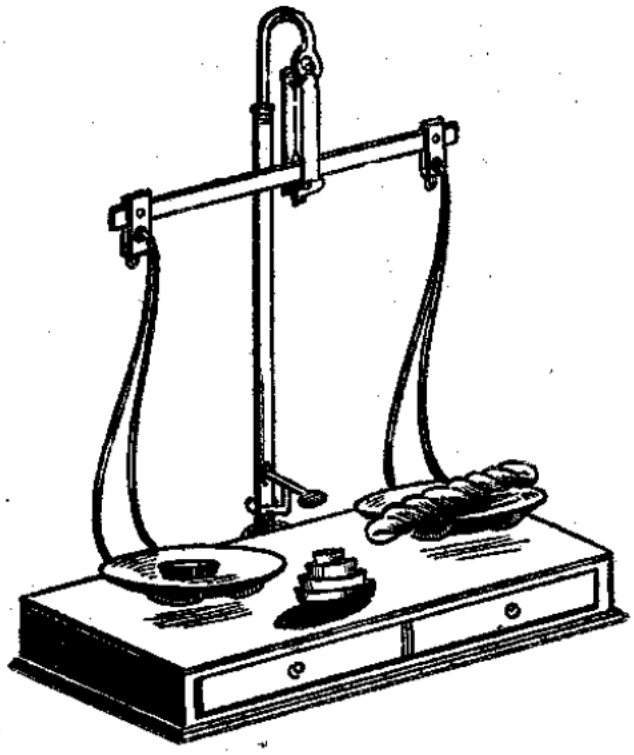

Fig. 3.1 A set of scales with coins used as weights.[72]

Furthermore, Lele and other karyakartas strove to introduce spinners to the new terminology associated with the decimal system. For instance, the *paisa* had replaced the *anna* and the *meter* the *tar*. In addition to showing spinners that they could materially engage with the new units in much the same way they had engaged the old ones, karyakartas also had to ensure that spinners had at least a working knowledge of the basic properties of the new. Partly as a result, Lele prepared a series of directive statements spinners could memorize and apply to their work instead of mastering the relatively complicated formulae used to determine yarn count and wages. While these statements had the primary effect of reducing the mathematical labor

[72] Krishnadas Gandhi, *Katai Ganit, Bhag 2: Sut ka Ank,* 3rd ed. (Maganwadi: Akhil Bharat Sarv Seva Sangh, 1954), front cover.

spinners had to perform, they also reminded spinners of the decimal and non-decimal terms for the same object. For example, one statement read: "If the weight of one meter (that is, one *tar*) of yarn is equal to one gram, then the yarn count is also one." Here, the reader learns that the decimal unit *meter* is roughly equivalent to that of the non-decimal unit *tar*. Or, alternatively, another statement proclaims that a *decameter* is approximately the same size as a *pati*. And, whether intentionally or not, Lele crafted these statements in such a way that they repeated many of the same phrases, thus establishing a rhyming pattern. Readers will not need to know Hindi in order to recognize the repetition embedded in the following statements:

> **Ek** meter yani ek tar ka **vazan**
> **Yadi ek** gram hai, **to sut ka ank ek.**
>
> **Ek** decameter yani ek pati ka **vazan**
> **Yadi ek** decagram hai, **to sut ka ank ek.**
>
> **Ek** hectometer yani ek lati ka **vazan**
> **Yadi ek** hectogram hai, **to sut ka ank ek.**
>
> **Ek** kilometer yani ek gundi ka **vazan**
> **Yadi ek** kilogram hai, **to sut ka ank ek.**[73]

It seems reasonable to infer that such a high degree of repetition might well have served as a memory aid and thus of great practical use to largely illiterate spinners struggling to learn a new mathematical language.

Although karyakartas did not "invent" the decimal system or initiate decimalization, they nevertheless played a crucial role in determining the shape decimalization would assume in post-colonial India. This is because they, along with others who interacted with the masses on a daily basis, bore a disproportionate amount of responsibility for introducing the basic properties of the decimal system and modeling their use. But notably, karyakartas almost certainly took their

[73] *Ibid*, 15-6.

pedagogical role more seriously than the small-time merchants and factory owners who also served as leading intermediaries between "ordinary" Indians and decimalization. As a result, the former set themselves the task of generating practical strategies to make the decimal system comprehensible, often drawing upon tactics they had previously employed for non-decimal denominations. In the process, then, they helped to build the decimal system from the ground-up, not impose it from the top-down. This was an important achievement since by the mid-twentieth century, the decimal system, and its concomitant the metric system, had achieved the status of a global behemoth with international treaties and organizations dedicated to regulating its use. But significantly, the decimal and metric systems did not take such a shape in the khadi economy but instead emerged as almost logical outgrowths of already existing metrological and pecuniary systems. That they could do so is a testament to the pioneering conceptual work executed by karyakartas.

Khadi Textbooks

If khadi mathematics represented one of the major innovations to emerge out of khadi sahitya in the late 1930s and early 1940s, khadi textbooks represented another. Referred to variously as *pathya-pustakein* and *praveshikaen,* the textbooks attempted to explain the khadi economy to two discrete audiences: schoolchildren and schoolteachers, on the one hand, and khadi karyakartas, on the other. While khadi sahityakars distinguished between the two audiences and produced slightly different textbooks for each, we can identify commonalities across textbooks, in particular, a commitment to the spread of knowledge of the khadi economy to a wider audience. After all, up to this point, most khadi sahitya had taken khadi officials, along with a relatively small group of spinners and weavers, as its chief addressees.

Nevertheless, khadi institutions began to assemble a formal educational infrastructure for the khadi project from the mid to late 1930s, one composed of training institutes for karyakartas and primary and secondary schools for children. Textbooks occupied a crucial position within that infrastructure as one of the primary media for educating Indians about the khadi economy. Although formally similar to some of the textbooks employed at technical and non-technical schools, khadi textbooks departed from standard practice in their insistence that students access macroeconomic thought through microeconomic activity. That is, they viewed engagement with productive technologies as the best avenue for generating conceptual knowledge about the economy. Moreover, they encouraged students to produce this knowledge for themselves, all the while cautioning them that the micro should never be completely absorbed into the macro.

This section examines the content and structure of the textbooks produced by khadi sahityakars with an eye toward interrogating the relationship they presupposed between the microeconomic and the macroeconomic. As discussed in Chapter One, AISA committed itself in 1940 to establishing at least one khadi *vidyalay*, or school, in each of the provinces.[74] These schools would provide incoming karyakartas with the training they required to perform their work while also offering refresher courses to already serving karyakartas. AISA's education committee developed six different courses for incoming karyakartas along with a syllabus and exam to go along with them. It also prepared a curriculum for traveling residential camps that would provide refresher courses of one to two months for karyakartas located at a great distance from khadi vidyalays.[75] As AISA developed new iterations of its training programs throughout the 1940s and 1950s, it commissioned additional textbooks while continuing to utilize the old ones. Moreover, it sporadically instructed its officials to prepare textbooks for schoolchildren

[74] Akhil Bharat Charkha Sangh, *Varshik Vivaran: 1940* (Wardha: Akhil Bharat Charkha Sangh, 1941), 8.
[75] Akhil Bharat Charkha Sangh, *Varshik Vivaran: 1941-42* (Wardha: Akhil Bharat Charkha Sangh, 1942), 14-7.

studying at national and municipal schools, textbooks that bore a striking resemblance to those prepared for karyakartas. Both sets of textbooks provide a unique perspective on what khadi sahityakars determined to be the most significant features of the khadi economy. This section investigates one of those features: the privileged position assigned to the microeconomic as a route to the macroeconomic.

Maganlal Gandhi and Richard Gregg's *Takli Shikshak* makes an ideal starting point for this discussion insofar as it exhibits many of the features common to khadi textbooks.[76] Published in 1926, a full decade before the start of the period under consideration, *Takli Shikshak* nonetheless served as a model of sorts for many of the textbooks that followed. In particular, it introduced an organizational strategy that subsequent textbooks would imitate: it placed productive technologies and processes (and not the history or organization of the khadi program) at its center. That is, with few exceptions, *Takli Shikshak* and other khadi textbooks did not explicitly discuss the origins and development of the khadi program. They did not discuss the principles presumed to animate that program either. They did not even discuss the myriad activities undertaken by khadi institutions. Instead, they focused almost exclusively on detailing the appearance, construction, operation, and repair of productive technologies such as the takli and the ambar charkha. This strategy had enormous implications for readers' understanding of the khadi economy.

Allow me to elaborate. Gandhi and Gregg intended their textbook for the use of students studying at primary and secondary schools, some of them operated by municipal governments.[77] Although jointly addressed to schoolchildren and schoolteachers, *Takli Shikshak* would have been more useful to the latter in that it offered them advice on how to instruct children in the use

[76] Maganlal K. Gandhi and Richard B. Gregg, *Takli Shikshak* (Sabarmati: Shikshan Vibhag, Charkha Sangh, 1926).
[77] Maganlal K. Gandhi and Gregg 1926, 5.

of the takli, a small spindle that for centuries had accomplished the work of spinning without the need for a full-fledged spinning wheel. As such, it contained chapters on the manufacture of taklis, exercises to be performed on the takli, and the concrete benefits to be gained from each exercise. The authors explained their decision to write a textbook on the takli as a largely practical one born of their conviction that the takli made an excellent pedagogical tool. For instance, in contrast to the charkha, which they characterized as large, bulky, and expensive, the takli was light, inexpensive, and easily transportable. Moreover, it made little noise, required no special repairs, and was so captivating as to hold the attention of even the most unruly schoolchild.[78] And, as the authors repeatedly noted, the takli could be worked on almost any occasion—while walking, while standing, while sitting, while talking with friends, while attending public gatherings, while riding in an ox cart or on a train. The sick and elderly could even ply the takli while convalescing in a hospital, a point not especially relevant to schoolchildren but one the authors found worth highlighting nonetheless.[79] In short, the takli made an ideal subject for a khadi textbook partly because its advocates perceived it to be an unusually simple instrument.

But more importantly, Gandhi and Gregg argued, regular practice with the takli would help students to develop a variety of skills or capacities (*gun*) and conceptual orientations (*vichar*) that extended far beyond the takli itself. For example, students who worked the takli for at least a short time everyday would learn patience and national feeling while acquiring an understanding of the importance of cooperation and disciplined use of one's time. Moreover, they would experience the satisfaction that comes from performing manual labor and contributing to the wellbeing of the nation. Such lessons, the authors stressed, would be of value

[78] Maganlal K. Gandhi and Gregg 1926, 55-6.
[79] *Ibid*, 4 and 57.

to all students regardless of whether they chose to pursue a career as a doctor, painter, engineer, or sculptor.[80] In other words, the utility of the takli lay not only in its conventional function as an instrument for spinning yarn but also in its interconnections with other fields of knowledge. Thus, *Takli Shikshak* and other textbooks like it would educate students in far more than the mechanics of spinning.

Subsequent khadi textbooks made similar arguments about the relationship between the productive process or technology that constituted the formal subject of their work and the larger set of concerns to which that subject was related. For instance, Vinoba Bhave's *Mul Udyog* (1938) asserted that instruction in the takli would develop students' sensory powers; provide them with physical exercise; introduce them to basic mathematics; and offer them the opportunity to practice various conceptual tasks, such as the sorting and ranking of material objects.[81] In addition, Kunder Balwant Diwan's *Takli* (1955) suggested that regular takli use would acquaint students with some of the concepts central to the mechanical sciences, including gyration and the law of inertia.[82] Finally, B. Pattabhi Sitaramayya's *I Too Have Spun* (1946) listed the mathematical operations (among them multiplication, division, and square roots) individuals would learn through spinning while also characterizing spinning as an activity capable of cultivating artistry in its practitioners.[83] Therefore, when Bhave, Diwan, Sitaramayya, and others placed productive technologies at the center of their textbooks, they did not do so with the intention of preparing mere technical manuals. Instead, they viewed those productive

---

[80] *Ibid*, 53.
[81] Bhave, 4-6; 45-8; and 56.
[82] Kunder Balwant Diwan, *Takli* (Sevagram: Hindustani Talimi Sangh, 1955), 169-72.
[83] B. Pattabhi Sitaramayya, *I Too Have Spun: Being a Collection of Notes on Spinning* (Bombay: Hind Kitabs Limited, 1946), 68-71 and 42-3.

technologies as introductions to—even invitations to engage with—a larger field of macroeconomic knowledge.

The textbooks produced by khadi sahityakars had much in common with those produced for *buniyadi talim*, or basic education, schools in the middle decades of the twentieth century. Buniyadi talim, or *nai talim* (new education) as it was sometimes called, referred to an educational program introduced by Bhave, M. K. Gandhi, and others in the late 1930s. The promulgation of the Government of India Act of 1935, which devolved some powers—including charge of the education portfolio—from the central to the provincial governments, inspired renewed interest in educational policy among a broad cross-section of Indians. In 1937 when popularly elected governments came to power in the provinces, Gandhi wrote several articles outlining his vision of what a national education system might look like. At the heart of that vision lay a commitment to placing manual or productive labor at the center of the educational process. But in contrast to technical schools, which sought to indoctrinate students into a particular craft or industry, buniyadi talim schools would not distinguish between technical and conceptual knowledge, or rather they would accord equal weight to each.[84] That is, while buniyadi talim students would spend hours every day learning to spin a charkha or work a handloom, they would do so not only in an effort to become proficient spinners or weavers but also so that they could gain access to all the other fields of knowledge to which the charkha and the handloom were connected.

Proponents of buniyadi talim did not immediately specify the content of these other fields of knowledge but instead busied themselves with establishing an institutional structure for their project. At their urging, the INC made buniyadi talim the centerpiece of its national education

[84] *Seven Years of Work: Eighth Annual Report of Nai Talim (1938-46)* (Sevagram: Hindustani Talimi Sangh, 1946), 3-7.

program in March 1938 and helped to establish the Hindustani Talimi Sangh, the organization charged with overseeing the administration of buniyadi talim, one month later. Buniyadi talim has received relatively little attention in the historiographical literature, probably because it never counted more than a small minority of Indian schoolchildren among its pupils. However, khadi institutions maintained a close relationship to buniyadi talim schools, preparing textbooks for some of them and housing others on their property. Moreover, AISA encouraged its karyakartas to educate their children at buniyadi talim schools, providing monthly educational stipends to those who did so.[85] Perhaps partly for these reasons, khadi textbooks shared much of the buniyadi talim ethos, in particular the conviction that productive labor offered the best inroads into more conceptual fields of knowledge.

Khadi textbooks thus had the effect of encouraging readers to approach the khadi economy not primarily through the mediation of formal rules and principles but through sustained bodily labor. Such labor, or so they suggested, was both an end and a pathway to something more: the larger world of the macroeconomy. By contrast, textbooks produced by Dube and other proponents of a popular Hindi-language economics literature took a very different approach. Take the 1940 textbook on village economics co-authored by Dube and his colleague Shankarsahay Saxena as an example. Intended for the use of high school students, the book begins with a discussion of the importance of the study of economics followed by an overview of economics' various subfields. Subsequent chapters seek to explicate key concepts, such as wealth, utility, value, and price, while still others investigate the relationship between land, labor, and capital, or the operation of the market.[86] Like other "popular" economists, Dube

[85] This policy was put in place by at least 1944. Budget Samiti meeting, 9-12.12.1947, *All India Spinners Association Papers, 1940-1952*, R. 2881, #2, Nehru Memorial Museum and Library, 36.
[86] *Gramya Arthashastra (Yuktprant ke Highschool aur Intermediate Board ki Highschool Pariksha ke Gramya Arthashastra ke Pathyakram ke Anusar Likhit*) (Allahabad: National Press, 1940).

and Saxena take pains to make their arguments intelligible to students, often through the use of "real-life" examples and the provision of study questions. For example, they ask students to conduct investigations of the socioeconomic conditions prevailing in their village and to keep track of their family's monthly budget. But crucially, they permit students to complete these exercises only after familiarizing them with the conceptual framework that "ought to" determine their answers. Such an approach allows students to explore and build upon the conceptual knowledge they have been given but not to produce it for themselves. At least it does not do so in the fashion of khadi textbooks, which demanded that readers make their own conceptual knowledge through their interactions with taklis, charkhas, and other productive instruments. And although khadi sahityakars had some expectation of the type of knowledge readers would produce, they nevertheless entrusted the latter with a large measure of freedom.

Still, we would be remiss to assume that khadi textbooks privileged macroeconomic understandings of the economy even as they suggested that karyakartas and schoolchildren alike could best access the macro through the micro. On the contrary, they repeatedly alert us to the importance of micro-level experiences of economic life. Nowhere is this more evident than in textbooks' treatment of *pleasure*, a term rarely if ever associated with the khadi economy, which in the popular imagination at least more often signifies sacrifice, discipline, and tedious, repetitive labor. However, in the opinion of some khadi sahityakars, the khadi economy constituted an arena in which participants could expect to encounter enjoyment and recreation. That is, spinners and other participants in the khadi economy would, ideally speaking, derive not only material benefits from their labor but also excitement. Moreover, they would generate sensual gratification for themselves alongside new wealth for the nation.

We find the clearest expression of this sentiment in Sitaramayya's 1946 work, which doubles as a textbook and an autobiography of one individual's experiences with the charkha. At the beginning of his text, Sitaramayya commends the charkha to his readers as "the panacea for a hundred ills, the elixir of life and the philosopher's stone" before settling in to a slightly more sober discussion of the charkha's construction and operation.[87] Nevertheless, he intersperses his lessons on the tensile strength of yarn and the ratio of the revolutions of a charkha's wheels with admonitions to approach the charkha as an instrument capable of producing almost immeasurable pleasure in its users. For instance, he punctuates a discussion of slivers, the long bundle of plant fibers that spinners turn into yarn, with the following declaration: "There is no greater pleasure in spinning than working with really good slivers. Spinning then becomes an attractive and engrossing pastime, a veritable intoxication. Under favourable conditions, it may soon develop into an irresistible mania, like novel reading or cards!"[88] In addition, he advises his readers to amuse themselves by attempting to shape the yarn they have spun into elaborate patterns.[89] And, finally, he urges spinners to ply the charkha even in what might initially appear unpleasant circumstances. For example, the third-class compartment of a train, though poorly maintained and overcrowded, might nevertheless prove a thrilling environment for a spinner:

> What a pleasure spinning can be with a large number of curious people looking on! They eagerly make room for you, extend a hundred little courtesies. You, on your part, reciprocate by carrying on a friendly conversation. The spectators, caught up by the soothing hum of the wheel and the magic of rhythmic production, ask questions; they want to know how it is done—and what is more, the whole background of hand-spinning and its present revival in India.[90]

---

[87] Sitaramayya 1946, 6.
[88] *Ibid*, 26.
[89] *Ibid*, 42-3.
[90] *Ibid*, 78-81.

In Sitaramayya's hands, then, spinning becomes an invitation to play, and the khadi economy promises a range of delights to those willing to enroll themselves in it.

Other khadi sahityakars also emphasized the indispensability of pleasure, albeit in more measured tones than those employed by Sitaramayya. For example, Bhave's *Mul Udyog* encourages schoolteachers to provide instruction in the takli rather than the charkha on the grounds that the former will afford schoolchildren greater freedom or personal agency (*kartritva*). While schoolchildren require some measure of freedom for purely instrumentalist reasons—a teacher cannot attend to all his/her students at once—personal agency matters for non-instrumentalist reasons as well. For, as Bhave argues, a student derives little excitement or pleasure from spinning if she must appeal repeatedly to the teacher for guidance. Instead, she should be encouraged to remain as free as possible to experience all the joy spinning can bring.[91] Here again we encounter pleasure not as incidental to the khadi economy but as central to it.

Note that the authors of these textbooks do not attempt to justify their invocation of pleasure with reference to economic utility. They do not suggest that pleasure inspires greater productivity or makes spinners more committed to their work. Nor do they suggest that pleasure is necessarily generative of conceptual knowledge. On the contrary, they seem to imply that enjoyment, even excitement, is an end in itself, a good to be treated on par with bundles of yarn and handfuls of rupees. Thus, from the perspective of khadi sahityakars, at least, spinning is an activity that holds the macro and the micro together: even as it provides opportunities for spinners to acquire conceptual knowledge of the economy it also, and equally importantly, suffuses them with joy.

---

[91] Bhave, 30-1.

Conclusion

This chapter examines the relationship between pedagogical writing, labor, and knowledge production in the khadi economy. It did so through an investigation of a range of projects designed to help the rural poor in overcoming their innumeracy. A lack of familiarity with mathematical concepts and methods (and, in some instances, an inability to count beyond a certain number), innumeracy negatively impacted villagers' lives in ways that illiteracy and other more familiar problems did not. While standard accounts of Gandhian constructive work portray it as primarily disciplining in its thrust, I move away from a focus on pedagogy as a disciplining project to a consideration of how pedagogical encounters transpired in practice. In doing so, I argue that the main aim of khadi organizations' pedagogical initiatives was not primarily, as some have suggested, to discipline the rural poor, but rather to create the conditions under which the rural poor could gain control over their own material and conceptual labor. In doing so, I show that the economic actor valorized by khadi organizations was not simply a morally upright individual committed to bread labor but also an intellectually curious one who approached physical labor as a gateway to other forms of knowledge.

CHAPTER FOUR:

Spinning Employment

One morning in March 1920, several self-styled inventors entered the grounds of Sabarmati Ashram to present their creations in front of a panel of judges. Founded by M. K. Gandhi shortly after his return from South Africa in 1915, Sabarmati Ashram was the site of his earliest experiments with khadi and the initial headquarters of the khadi movement. On that spring morning, khadi production was still in its infancy. Ashram residents had only just begun to spin their own yarn, much of it of such poor quality that weavers struggled to turn it into cloth. Although delighted that khadi production was finally underway, Gandhi worried that without a technological revolution, the *charkha*, or spinning wheel, might never find a permanent home outside the ashram. That was why he had persuaded his friend Revashankar Jagjivan Jhaveri to offer a Rs. 5,000 prize for the invention of a "better" charkha and why he had asked the ashram's manager Maganlal Gandhi to assemble a panel of experts to adjudicate the competition. At a time when the average per capita income was only about Rs. 50, Rs. 5,000 constituted a princely sum. The judges ruled that none of the contestants had submitted a charkha worthy of such a substantial prize, however, and advised the organizers to hold a new competition in six months.[1] That competition also failed to produce a winner, as did the next one and the next one until finally, in 1949, khadi organizations awarded the prize to a twenty-nine-year-old technology enthusiast from Madras State. M. K. Gandhi was not around to witness the contest's conclusion,

[1] "The Spinning Wheel Competition," *Young India* (13 Oct. 1920), 2-3.

having been felled by an assassin's bullet a year earlier. As a result, it fell upon his colleagues to introduce the prize-winning charkha to the public and persuade them that, when worked in sufficient numbers, it would help revitalize an Indian economy ravaged by two centuries of colonial rule.[2]

Gandhi and his colleagues were not alone in their assessment that technology had a critical role to play in placing the Indian economy on a stronger footing. In the decades leading up to independence in 1947, Indian politicians, economists, and scientists of diverse ideological persuasions agreed that economic development could not proceed in the absence of an overhaul of India's impoverished technological infrastructure. This consensus broke down over the question of what such an overhaul should look like, however, whether it should be grounded in the adoption of large-scale, capital-intensive technologies or small-scale, labor-intensive ones. While these two approaches were not inherently in conflict with one another (proponents of capital-intensive technologies sometimes conceded the need for labor-intensive technologies in certain sectors of the Indian economy), the balance of elite opinion tipped firmly in the direction of the former. Gandhi and his colleagues, by contrast, favored the development of small-scale, labor-intensive technologies that although ill-suited to mass production, might nevertheless provide a secure livelihood to the masses. In articulating this opinion and pushing to have it incorporated into India's development agenda, they encountered strong opposition from many of their co-nationals, some of whom labeled them arch-traditionalists or even enemies of scientific progress.

This chapter traces the rise and fall of the khadi economy through the framework of technological development. The narrative thread is an account of a competition to develop a

[2] The term "silent revolutionary" may have been used to refer to the prize-winning charkha for the first time in Vijayadev, *Ambar Charkha: The Silent Revolutionary* (Khadi and Village Industries Commission, 1957), 44.

better spinning wheel that attracted contestants from across India and the world. Initiated by Gandhi in 1919, it did not conclude until after his death in 1948. The winner, referred to as the ambar charkha, became the focus of efforts to transform khadi work from a part-time to a full-time occupation and women into industrial producers. These efforts made the ambar charkha appealing to an audience that extended beyond rank-and-file Gandhians. Members of the Indian planning establishment viewed the ambar charkha as a technology potentially capable of providing full-time employment at little cost to the state. By moving away from well-trodden debates about whether Gandhi was pro- or anti-technology and toward a consideration of how his unique perspective on technology operated in practice, I show how changes in the charkha's material qualities opened new possibilities while foreclosing others. Ultimately, I argue that khadi organizations' greatest triumph—the unveiling of the ambar charkha—was simultaneously the occasion for their decline.

The upright charkha

The story of Gandhi's search for a spinning wheel has assumed near mythical status, thanks in no small part to his narrativization of it in his 1929 autobiography. Gandhi's account begins in London in the late summer or fall of 1909. He had traveled there as the head of a delegation of South African Indians come to protest their discriminatory treatment at the hands of the South African government. London was home to a large community of diaspora Indians at the time and so, in between meetings with government officials and newspaper editors, Gandhi sat down with his fellow expatriates to discuss the future of the Indian nation. As he later recalled, "We had many long conversations about the condition of India and I saw as in a flash

that without the spinning-wheel there was no swaraj. I knew at once that everyone had to spin."[3] But, as he confessed subsequently, he had never seen a spinning wheel before he had that vision and, for a time, believed he had seen a handloom instead.

Gandhi's confusion over what distinguished a spinning wheel from a handloom did not bode well for his prospects of ever laying eyes on one. Upon returning to India from South Africa in 1915, he began to question his visitors about the spinning wheel, asking them to locate one and bring it back to him. This approach bore little fruit, however, since the charkha had been rendered all but extinct several decades before and very few people were still familiar with its use. Finally, in 1917, a Gujarati woman named Gangabehn Majumdar approached Gandhi and offered to conduct "an earnest and incessant search" for a charkha on his behalf. Gandhi accepted immediately, concluding that the art of spinning "being confined to women and having been all but exterminated, if there was some stray spinner still surviving in some obscure corner, only a member of that sex was likely to find out her whereabouts." As luck would have it, Majumdar accomplished the seemingly impossible. After months of roaming around rural Gujarat, she stumbled upon a long-discarded charkha and returned with it to Gandhi's home in Ahmedabad. Gandhi could barely contain his excitement at her discovery. Although away in Bombay at the time convalescing from an illness, he wrote almost daily letters to his friends and colleagues requesting updates on their progress with the charkha. Moreover, he asked two of his sickroom attendants to learn spinning and credited their practice sessions with helping restore him to health. When he finally returned to the ashram, he began plying the charkha himself.[4]

---

[3] Gandhi, *CWMG* 37, 288.
[4] M. K. Gandhi, *An Autobiography: Or the Story of My Experiments with Truth*, Trans. Mahadev Desai (Ahmedabad: Navajivan Publishing House, 2006), 450-53.

Made of wood and dominated by the vertical wheel from which it took its name, the upright charkha was the first spinning wheel to be adopted by the khadi movement. It was also the immediate impetus for the spinning wheel competition and the most widely recognized emblem of the khadi economy. In a chapter in his autobiography titled "Found at Last!," Gandhi described the excitement he felt at laying eyes on the upright charkha for the first time. Once ubiquitous in India, it had been almost uniformly discarded by the rural masses in the second half of the nineteenth century in the face of competition from millspun yarn.[5] Though Gandhi recommended the upright charkha to others and began to ply it himself, he simultaneously charged the ashram staff with "improving" it, that is, of making it better suited to its primary task of supplying much-needed work to the rural unemployed and underemployed.[6] AISA's Technical Department, led by the self-taught technologist, Maganlal Gandhi, initially spearheaded this effort but increasingly secured the assistance of a vast network of private citizens and organizations through the medium of the contest. While Gandhi's own experiments helped him identify some of the upright charkha's shortcomings, he also sanctioned additional charkha censuses, conducted surveys, and ordered khadi-producing institutions to submit yarn and cloth samples for inspection in an effort to gather additional information.[7] The survey and inspection results quickly confirmed his worst fears: khadi would never find a substantial market nor the khadi economy a substantial workforce in the absence of a major overhaul of the upright charkha.

---

[5] *Ibid*, 450-2.
[6] *Ibid*, 456.
[7] For an account of one such census, see *A Khadi Tour: Concerning Some Information Gathered in the First Months of 1924* (Information Bureau, All India Khadi Department, 1924). For a sample survey, see All India Khadi Information Bureau, *Khadi Bulletins* (Sabarmati: Khadi Information Bureau, 1923), 96-8. And for the initial order instructing all khadi organizations to submit yarn and khadi samples to AISA's Technical Department, see Board of Trustees meeting, December 12, 1926, All India Spinners Association Papers (hereafter cited as AISA Papers), Nehru Memorial Museum and Library (hereafter cited as NMML).

The upright charkha's defects made it especially ill-equipped to serve as the centerpiece of a household economy. For starters, it produced only small quantities of yarn, often as little as one to two hanks (or approximately 1,000-2,000 meters) per eight-hour workday. This was partly because it utilized only a single spindle instead of the multiple spindles favored by textile mills but also because it contained no mechanism for spinning and winding yarn simultaneously, forcing spinners to pause frequently to collect and twist newly spun yarn. To make matters worse, handspinning was poorly compensated; in the early 1920s, an individual who spun for eight hours a day at the average speed could expect to earn a daily income of only three to four *paise*. At a time when the average daily income was about seven paise, such a sum would prove attractive only to those with no other source of work.[8] An essay published in 1926 hypothesized that handspinners would never earn more than two to three *annas* per day on the upright charkha; by contrast, the government's average daily famine wage was less than two annas.[9] And, finally, the very weavers paid to turn yarn into khadi expressed a strong aversion to handspun yarn, which, unlike the thread manufactured in textile factories, broke repeatedly upon use.[10] Although khadi officials did not hold the upright charkha entirely responsible for this state of affairs, noting on multiple occasions that prior generations of handspinners had used it to produce infinitely superior thread, they nonetheless suggested that it did not do enough to transform unskilled spinners into technically adept ones.[11] So long as spinners continued producing low-

[8] Dhirendra Majumdar, *Bapu ki Khadi* (Sevagram: Akhil Bharat Charkha Sangh, 1950), 8-9. There are twelve ? in an anna and sixteen annas in a rupee.
[9] S. V. Puntambekar and N. S. Varadachari, *Hand-Spinning and Hand-Weaving: An Essay* (Ahmedabad: All India Spinners' Association, 1926), 129.
[10] Akhil Bharatvarshiya Charkha Sangh, *Salana Report, 1925-26* (Ahmedabad: Akhil Bhartavarshiya Charkha Sangh, 1926), 13-5. Also see, Satis Chandra Das Gupta, *Khadi Manual*, Vol. I (Parts 1-3) (Calcutta: Khadi Pratisthan, 1924), 32.
[11] This claim is a bit ironic given that M. K. Gandhi and others initially recommended the upright charkha on the grounds that it was relatively easy to operate and thus accessible to the elderly, infirm, and "ignorant" alike. See Gandhi's 1926 *Young India* article cited in All India Spinners' Association, *Khadi Guide: 1927* (Ahmedabad: The All India Spinners' Association, 1927), 5.

quality thread, khadi institutions would have to pay weavers two-to-three times the market rate, leaving little money over for anything else.[12]

Khadi officials cited these and other limitations when they publicly acknowledged that handspinning could never be anything but a supplementary occupation practiced in the evenings and agricultural off-season by those in need of an additional source of income. Irritated at the repeated charge that it aspired to displace the textile industry, AISA began its 1927 annual report with the following disclaimer:

> It is necessary at the outset to remove one misapprehension which again and again crops up in the arguments used against the Charkha. Spinning is not put forward as the sole occupation for any class of people; it is not intended that it should compete with, or displace, any existing type of industry. There is therefore no meaning in comparing the earnings out of spinning [to] other whole-time occupations and declaring them to be too meager. The sole claim urged in its [khadi's] favour is that it is the only immediately practicable supplementary occupation that can be offered to the vast mass of the population that is starving or half-fed in consequence of abject poverty and enforced idleness for nearly half the year.[13]

In fact, claimed the authors of an essay awarded a Rs. 1,000 prize in 1926 by a committee comprised of M. K. Gandhi, Maganlal Gandhi, Shankarlal Banker, and Ambalal Sarabhai, handspinning had always been a part-time occupation and during the "Vedic period" even "operated like a kind of poor law." Kautilya's *Arthashastra*, they continued, had instructed government officials "to give spinning as work for the absolutely poor and destitute such as cripples, poor women who did not stir out of their homes, girls obliged to work for their subsistence and the like."[14] The "progressive pauperisation" of the Indian population under the British had produced a new class of destitutes: the landless and land-poor agriculturists who

---

[12] Akhil Bharatvarshiya Charkh Sangh, *Salana Report, 1925-26* (Ahmedabad: Akhil Bharatvarshiya Charkha Sangh, 1926), 15.
[13] *Khadi Guide, 1927*, 1. *The Khadi Guide, 1927* estimated that handspinning could augment the average per capita income of Rs. 50 by as much as Rs. 24 per year (7).
[14] Puntambekar and Varadachari 1926, 12.

struggled to eat even once a day.[15] Until such time as more remunerative employment became available to them, the upright charkha might at least keep them alive.

In the short term, then, it made sense to make the upright charkha the centerpiece of the khadi program. Besides the fact that it was relatively inexpensive and easy to operate, "charkha surveys" carried out between May and August of 1922 suggested that there were a surprising number of upright charkhas already in operation. A survey of the eastern Indian state of Bihar, for example, counted a total of 220,000 upright charkhas, 200,000 of which were currently in use.[16] A similar survey of Tamil Nadu turned up only 25,000 working upright charkhas, while a survey of the United Provinces (UP) turned up an astounding 300,000.[17] While these figures seem suspiciously high given what we know about the near total collapse of the spinning industry in the late nineteenth century, they nonetheless provided khadi organizations a reason for optimism.

The Competition Begins

The competition to invent a better charkha began with an announcement in the October 5, 1919 edition of Gandhi's Gujarati-language newspaper *Navajivan*. Short and to-the-point, the announcement proclaimed that the Gujarati diamond merchant Revashankar Jagjivan Jhaveri had offered a Rs. 5,000 prize for the invention of a portable spinning wheel built from indigenous components that could turn as many as ten spindles at a time. Interested parties should submit their model to Satyagraha Ashram in Ahmedabad by January 1, 1920 for inspection by a panel of

[15] *Ibid*, 133-9.
[16] *Khaddar Work in India* (Bombay: All-India Congress Khaddar Department, 1922), 70.
[17] *Ibid*, 92 and 95.

expert judges.[18] A handful of Indians responded to this announcement, hurriedly preparing a draft model and traveling to Ahmedabad at their own expense to present it to the judges. In what would become a recurring pattern, the judges rejected each of the entries for failing to meet all the competition's conditions. Jhaveri and the other organizers did not lose faith in the competition format, however, scheduling another one for October 1, 1920.[19]

The second competition began with a series of introductions. While two of the contestants, Mr. Muljibhai Laloobhai and Mr. Raruchandra K. Sirdesai, had participated in the previous competition and thus were well-known to the organizers, the other four were submitting entries for the first time. Unlike Laloobhai and Sirdesai, who were native Gujaratis, the new contestants hailed from all over India. They included: Mr. Nathumal, a drawing teacher from Sialkot in northwestern India; Professor D. C. Malik, a university instructor from Calcutta in eastern India; Mr. Margod of Gorakhpur in northern India; and Mr. Kale of Dharwar in southern India. The judges were Maganlal Gandhi, M. K. Gandhi's nephew and the manager of Satyagraha Ashram; Harilal Dalsukhram, a so-called spinning master; Gokuldas Mangjibhai Patel, an engineer from the New Mauekchowk Mills; and Anubhai M. Mehta, the manager of the Harivalabh Mueband Mills.[20]

A summary of the contest prepared by the ashram's manager Maganlal Gandhi indicates that the judges rejected four of the entries out of hand before pausing to consider the remainder in greater detail. One, a three-part spinning wheel submitted by a Mr. Margod of Gorak, produced three seers of yarn in three hours, a quantity termed adequate by the judges. However, because many of its parts were made of "foreign materials" and it could be transported only with

[18] "Notes," *Navajivan* Oct. 5, 1919, *CWMG* Vol. 16, 317-8. A subsequent announcement moved the competition date back to March 1, 1920.
[19] "The Spinning Wheel Competition," *Young India* (13 Oct. 1920), 2-3.
[20] *Ibid.*

great difficulty, it, too, was rejected. The final charkha, a ten-spindle model invented by a Mr. Kale of Dharwar, received more favorable reviews. Though the judges did not award it a prize, they decided to retain it for further testing in the hopes that the staff of Satyagraha Ashram could improve upon it. Notably, Kale's charkha produced far less yarn than Margod's—only 1.5 seers in eight hours—suggesting that standard measures of productivity alone do not explain what made the former better, or at least more promising, than the latter.[21]

Nevertheless, what does emerge clearly from the October 1920 competition is the extent to which contestants and judges alike believed that textile mills could serve as a model for the development of a better charkha. Perhaps most tellingly, two of the contestants submitted what were essentially imitations of technologies already in use in mills. One, a professor from Hindu University, had prepared an imitation jute mill spindle, while the other, a drawing teacher from Sialkot, had duplicated a mechanism employed by mills to wind yarn. Though the panel of judges rejected both entries, it did so not because of any inherent opposition to mill technologies but because the spinning wheels inspired by those technologies were "incomplete" or "left much to be improved." In fact, two of the judges were themselves employed by textile mills, one as a manager, the other as an engineer. Perhaps for this reason, they drew upon their knowledge of the textile mill and its functioning when evaluating the (hand-powered) spinning wheels placed before them. For example, they described Margod's three-part charkha—presumably three discrete pieces of machinery that together performed the work of spinning and two of its preparatory processes—as a "miniature mill-machine in a hut."[22] Though in hindsight it might seem obvious that a spinning wheel such as Margod's that employed three pieces of machinery to perform three specialized tasks would appear to the judges as similar in important respects to

[21] "The Spinning Wheel Competition," *Young India* (18 Oct. 1920), 2-3.
[22] "Spinning Wheel Competition," 2-3.

the highly specialized technologies of the textile mill, this was by no means a foregone conclusion. The khadi movement, which had created the demand for such competitions in the first place, was predicated on the notion that there was a fundamental distinction between hand- and machine-powered technologies, a distinction that carried over to the products of those technologies as well. Indeed, on a very real level, the mills constituted the foil against which the khadi movement and its handspinners were juxtaposed. On another level, however, the mills functioned as something else: a source of ideas about what a better charkha could look like as well as a vocabulary with which to describe what *better* meant. When the ambar charkha emerged almost three decades later, it, too, assumed a tripartite shape, a shape described with no small measure of approval as like that of a "miniature spinning mill."[23]

The second competition also failed to produce a winner, as did the next one and the next one for many years running. Jauhari raised the prize amount to Rs. 1 lakh (Rs. 100,000) in 1929, after which entries began to pour in not only from all over India but from many foreign countries as well. The panel of judges rejected entries from Turkey, Japan, Spain, and Germany, some of them submitted by engineers with previous experience in textile mills.[24] Another contestant was Maurice Freydman, a Polish engineer previously in the employ of Mysore State who moved to M. K. Gandhi's Sevagram Ashram at some point in the 1930s. After Maganlal Gandhi's death in 1928, Freydman, who also used the name Bharatanand, served as one of the khadi economy's chief technicians and contest organizers.[25] His crowning invention, the dhanush takua, never won the competition, probably because, although it performed the function of spinning, it was not, strictly speaking, a spinning wheel. It nevertheless earned a strong endorsement from M. K.

---

[23] Sevak, 15-7.
[24] Vijayadev, *Ambar Charkha: The Silent Revolutionary* (Khadi and Village Industries Commission, 1957), 17.
[25] Krishnadas Gandhi, "Dhanush Takli," *Maharashtra Khadi Patrika* (Aug. 1940) in Keshav Deodhar, *Dhanush Takua* (Sevagram: Khadi Vidyalay, 1944), 4-5.

Gandhi, who in 1942, called upon khadi organizations to cease manufacturing new charkhas and to pour all their capital into manufacturing dhanush takuas instead.[26]

Gandhi's call does not seem to have carried very much weight, however, and the contest continued until, finally, in 1949, khadi organizations declared the ambar charkha the victor. The ambar charkha's inventor and namesake, Ekambarnath, acknowledged his own debt to the mills in a brief account of his life published in a Tamil-language newspaper in 1956. Born in a village in Tirunelveli district in southern Madras state in January 1920, Ekambarnath belonged to an agricultural family of some means. As a child, he demonstrated a strong interest in what he termed "technical objects" and recalls making many of his own toys, among them a small motorcar and bicycle. He also spun occasionally on the *kisan charkha*, a modified version of the *yerwada charkha* Gandhi constructed in Yerwada Jail. Ekambarnath set the charkha aside after his wedding in 1939 but returned to it shortly after his wife's death in 1942. Overcome by grief and unable to concentrate on any other task, he spent all his waking hours spinning. But, he writes, the kisan charkha provided only limited relief. So meager was its output that he soon developed a strong "hatred" for it and dedicated himself to the task of improving it. Ekambarnath made little progress in this regard until he conferred with a friend employed as a laborer at a nearby textile mill. The friend prepared a diagram for him of the spinning equipment used by the mill and may even have supplied him with sample machine parts. News of his experiments soon spread to adjoining villages, and enthusiastic neighbors stopped by to offer suggestions. One of them mentioned the prize Gandhi had promised for the invention of a better charkha, and, Ekambarnath reports, he became aware of the charkha's true importance for the first time. As a result, he asked his father to release him from agricultural duties so that he could pursue his

[26] M. K. Gandhi, "Dhanush Takua," *Khadi Jagat* (Jan. 1942) in Keshav Deodhar, *Dhanush Takua* (Sevagram: Khadi Vidyalay, 1944), 1.

experiments fulltime. The father consented and, what's more, gave his son Rs. 1,000 to construct a small workshop on their property and to hire a skilled carpenter to assist him in his labors. By 1946, Ekambarnath had developed a much-improved charkha but was dissatisfied with the quality of *punis*, or bundles of cotton fibers, he fed into the spinning wheel. Once again, he turned to mill workers for advice and prepared an imitation of the machine employed by textile mills to transform unruly fibers into neat bundles. Finally, in 1949, he presented his invention to a gathering of AISA karyakartas, who applauded his efforts and committed their organization to manufacturing the charkha in large numbers.[27]

The man assigned the task of conducting further experiments on the ambar charkha was Nandlal Patel, former director of AISA's Research Department. Patel had previously developed a modified version of the kisan charkha, for which AISA awarded him a Rs. 125 prize in 1945.[28] In the following years, he had turned his attention to creating a "self-sufficient handloom" (*swavalambi kargha*) that could be operated and stored in even the smallest village hut. Such a handloom would replace the old-style pit loom, proper installation of which required that weavers dig a large hole in the floor of their hut. Though relatively inexpensive, the pit loom posed a considerable burden to non-weaving households unaccustomed to maintaining a pit in the middle of their living space. Since by this time AISA had adopted a policy of encouraging spinners to take up weaving, it asked Patel and other employees to devise a handloom that could be folded up and stowed in a corner at the end of the working day. With Patel's assistance, khadi workers constructed several such handlooms, one of which could even be hung from a peg on the

---

[27] Ekambarnath, "Mainne Ambar Charkha Kaise Banaya?" in *Ambar Charkha*, Tarunbhai, ed. (Varanasi: Sarvoday-Sahitya-Prakashan, 1958), 32-5. Ekambarnath is occasionally referred to as Ekambar Nair. For example, see K. G. Deodhar, *Ambar Charkha: Haath Pustika* (Ahmedabad: Ambar Charkha Kachahari, 1955), 4.

[28] Budget Samiti meeting, March 28, 1945, All India Spinners Association Papers (hereafter cited as AISA Papers), Nehru Memorial Museum and Library (hereafter cited as NMML). Patel was awarded commendations for several other inventions in 1951. See Budget Samiti meeting, November 11, 1951, AISA Papers, NMML.

wall when not in use.[29] But his most important contribution to the khadi economy took the form of his experiments on the ambar charkha, which he conducted from a workshop in Coimbatore District, home to India's largest concentration of spinning mills outside of Ahmedabad and Bombay.[30]

With Ekambarnath's assistance, Patel prepared many different versions of the ambar charkha. Finally, in early 1954, he settled upon a wooden version that in one analysis resembled nothing so much as a "big typewriter."[31] A compact box twenty-one inches long, sixteen inches wide, and twenty-one inches high, it weighed twenty-six pounds and employed four spindles to the upright charkha's one.[32] Each additional spindle boosted the ambar charkha's productivity, which initial reports suggested was three-to-four times that of the upright charkha. If the upright charkha spinner produced between two and three hanks of yarn in an eight-hour workday, the ambar charkha spinner would produce between eight and sixteen—the former if she also cleaned and carded her cotton during the eight-hour period, the latter if she performed spinning work alone.[33] This additional productivity would translate into a much-needed increase in spinning wages: twelve to sixteen annas per eight-hour workday as opposed to an average of four annas on the upright charkha.[34] By way of comparison, the government body charged with administering khadi work estimated in 1956 that agricultural laborers earned an average of only

---

[29] Akhil Bharat Charkha Sangh, *Tisara Saranjam Sammelan, Sevapuri-Banaras: Tarikh 15 se 17, November 1949* (Sevagram: Akhil Bharat Charkha Sangh, 1950), 11-3.
[30] For more on the Coimbatore textile industry, see S. R. B. Leadbeater, *The Politics of Textiles: The Indian Cotton-Mill Industry and the Legacy of Swadeshi, 1900-1985* (New Delhi: Sage Publications, 1993), 14-5.
[31] Deodhar 1955, 4.
[32] Vijayadev, *Ambar Charkha: The Silent Revolutionary* (Khadi and Village Industries Commission, 1957), 21.
[33] Deodhar 1955, 19; "Ambar Charkha-Parikshan Yojna," (Ahmedabad: Ambar Charkha Samiti Prakashan, 1956), 44-5; and Deodhar, *Ambar Charkha Kyon?* (Nasik: Khadi Gramodyog Ayog Ambar Shiksha Vibhag, 1957), 43. A hank is a unit of yarn found in coiled form. One hank was equal to approximately 1,000 meters. One leading khadi official estimated that the ambar charkha was actually 7-7.5 times more productive than the upright charkha. See Dwarkanath Lele, *Ambar Charkha Programme: Questions and Answers* (Bombay: Khadi and Village Industries Commission, 1958), 3-4.
[34] Deodhar, *Ambar Charkha Kyon?*, 44. Sixteen annas is equal to one rupee.

twelve annas a day for performing rigorous physical labor.[35] If family members took turns plying the ambar charkha, they could produce significantly more, perhaps as many as 16-26 hanks per day. One government publication suggested that the average family could expect to earn Rs. 600-900 per year plying the ambar charkha, a figure that, if accomplished, might well have tempted many rural dwellers to give up agriculture entirely.[36]

The ambar charkha's most striking feature was almost certainly its physical appearance, which ensured that it would never be mistaken for the upright charkha. In the understated words of one khadi official, "When the common people see it, they say, '*This* is a machine'." He continued, "Of course, the traditional [upright] charkha is also a machine (*yantra*). But when one considers the common meaning of the word 'machine', one is forced to acknowledge that…the ambar charkha is more machine-like (*yantra-may*)." The official in question was most impressed by the ambar charkha's interlocking parts, which seemed to move of their own accord. Their "self-propelling" (*swayam-chalit*) nature made the ambar charkha autonomous in ways other spinning wheels were not, a position a second khadi official echoed in an introductory pamphlet for karyakartas.[37] According to that second official, Dwarkanath Lele, the upright charkha spinner required "skill of a certain type," while the ambar charkha spinner required nothing more than "training." This was because ambar charkha spinning was "mainly mechanical," while the "personality, mood, aptitude, and skill" of the upright charkha spinner influenced the quality of her work.[38] Or as he put it in the Hindi-language version of his text:

> [I]t can be said that while the common charkha [another name for the upright charkha] is subjective (*vyakti-nishth*), the ambar charkha is objective (*vastu-nishth*). In other words, the common charkha is a spinning implement that the spinner plies and, through it,

---

[35] Ambar Charkha-Parikshan Yojna 1956, 45.
[36] Vijayadev, 22.
[37] K. G. Deodhar, *Ambar Charkha Yantra* (Nasik: Khadi Gramodyog Ayog Ambar Shiksha Vibhag, 1957), 1.
[38] Dwarkanath Lele, *Ambar Charkha Programme: Questions and Answers* (Bombay: Khadi and Village Industries Commission, 1958), 2-3.

> manifests his skill. The ambar charkha performs the work of spinning by itself; the individual we call the "spinner" merely turns it.[39]

Other officials marveled at the ambar charkha's distinctive three-part shape—in addition to the spinning wheel described above, a complete ambar charkha set consisted of a *dhunai modhiya*, or carding machine, and an *ambar belni*, or drawing machine (Fig. 4.1). Khadi organizations referred to both the spinning wheel and the set by the name *ambar charkha*, a confusing semantic decision that nevertheless reinforced the two's fundamental inseparability. The ambar charkha had acquired a three-part shape in the first place because its spinning wheel component would not work properly unless fed a special type of cotton sliver that required specialized carding and drawing machinery for its production.[40] As a result, would-be ambar charkha spinners had to purchase the entire set, which had the additional benefit of encouraging them to perform their own cotton processing work.[41] Khadi officials encouraged spinners to think of the ambar charkha as a "family instrument," emphasizing that while other charkhas could be plied by only one person at a time, the ambar charkha set could be jointly worked by up to three family members.[42] They further suggested that the ambar charkha's three-part shape made it a home-based instrument in ways other, more portable charkhas were not. Dozens of accounts extolled the ease with which spinners could transport these other charkhas with them wherever they went—on a train, to visit a friend, even to attend a public meeting.[43] By contrast, the ambar charkha was too heavy and bulky to be moved very far, and so would have to take up

---

[39] Dwarkanath Lele, *Ambar Prashnottari* (Bombay: Khadi aur Gramodyog Commission, 1958), 4. Translated from the Hindi.
[40] Slivers are created by carding or combing cotton fibers, and then drawing them into long strips of parallel fibers.
[41] "Ambar Charkha Samachar," Ambar Yojna Samiti (Ahmedabad: Sarva Seva Sangh, 1955), 117.
[42] The term "family instrument" is taken from *The Story of a Silent Economic Revolution* 1958, 26.
[43] For example, Prabhakar Diwan, *Kisan Charkha: Peti Charkha tatha Dubta Charkha Sahit* (Sevagram: Akhil Bharat Charkha Sangh, 1948 [1945]), 86; B. Pattabhi Sitaramayya, *I Too Have Spun: Being a Collection of Notes on Spinning* (Bombay: Hind Kitabs Limited, 1946), 78-81; and Vinoba, *Mul-Udyog: Katna [Shikshakon ke liye Pathyakram ka Spashtikaran]* (Sevagram: Hindustani Talimi Sangh, 1938), 6.

permanent residence in the village hut. The village hut itself would be transformed in the process as nominally self-propelling machines worked by a rotating cast of family members were installed within it.

Fig. 4.1 The ambar charkha in three-part form[44]

Khadi officials' excitement at this new arrangement, particularly what some termed the ambar charkha's "objectivity," would seem to mark a departure from their earlier concern that

[44] *The Silent Revolution*, 17.

machinery posed a threat to human subjectivity. While some officials had defined "machine" in fairly neutral terms—for instance, a machine is an "arrangement in which transformation of direction, speed, force and energy occur[s]"—others distinguished between tools and machines, warning that the latter threatened to turn human beings into slaves.[45] And, indeed, a small number of officials expressed strong reservations about the ambar charkha in the years following its invention. Chief among them was the economist J. C. Kumarappa, who, in an August 1956 letter, informed the President of India and former AISA trustee Rajendra Prasad that the ambar charkha was not a "Gandhian" technology.[46] Leading architect of the body of thought referred to as "Gandhian economics," Kumarappa had worked closely with M. K. Gandhi since the late 1920s, publishing regularly in Gandhi's journal *Young India* and even assuming its editorship when Gandhi was imprisoned in the early 1930s. In 1935, Kumarappa became the Secretary and Gandhi the President of the All India Village Industries Association, established by the Indian National Congress to develop the rural Indian economy.[47] This close partnership continued until Gandhi's death in 1948, after which Kumarappa continued his efforts to install a village-centric development model in independent India for several more years. By 1956, Kumarappa had largely retired to an ashram outside Madurai, but he continued to pronounce on matters pertaining to the rural economy. Unfortunately, Kumarappa's terse letter offered no explanation for his disavowal of the ambar charkha, but others came to a similar conclusion at approximately the same time. One of them, the Union Minister for Planning Gulzarilal Nanda, had authored an influential book on khadi in 1935, marshaling an array of statistics and technical data to

---

[45] For the first statement, see Bharatananda, *Dhanush Takli* (Sevagram: Hindustani Talimi Sangh, 1943), 2. For the second, see J. B. Kripalani's speech in Akhil Bharat Charkha Sangh, *Tisara Saranjam Sammelan, Sevapuri-Banaras: Tarikh 15 se 17, November 1949* (Sevagram: Akhil Bharat Charkha Sangh, 1950), 4.
[46] Letter D-1384 from J.C. Kumarappa to Rajendra Prasad, p. 19 (of file) (8.8.1956), NMML.
[47] For a brief biographical statement on Kumarappa, see Benjamin Zachariah, *Developing India: An Intellectual and Social History* (New Delhi: Oxford University Press, 2005), 177-9.

demonstrate that it constituted "a sound economic proposition."[48] But he, along with his colleague, the Union Minister for Production K. C. Reddi, argued in 1955 or 1956 that cloth produced from yarn spun on the ambar charkha should not be considered khadi.[49] Meanwhile, AISA's successor organization, the Sarva Seva Sangh, spent months debating the same question before finally agreeing to certify the ambar charkha as a "khadi technology."[50] The anxiety experienced by these and other senior officials detracted little from the excitement felt by others, one of whom proclaimed the new spinning wheel "the charkha of Gandhiji's dreams" and another the reincarnation of the Hindu god Krishna.[51] The skepticism with which some greeted the ambar charkha's invention is nonetheless telling, since it raises a seemingly improbable question: how could a spinning wheel, the chief icon of Gandhi's khadi economy, be anathema to that economy?

Reception

Unsurprisingly for an invention awaited for over three decades, initial reports of the ambar charkha were nothing if not adulatory. In fact, as early as 1958, the Khadi and Village Industries Commission (KVIC), the body charged with overseeing khadi production and consumption in independent India, issued a heavily illustrated promotional album celebrating the ambar charkha and its accomplishments. In many respects the album doubled as a biography of the ambar charkha or perhaps a pedagogic comic book in which the ambar charkha played the starring role. While much of the album is devoted to an account of the problems the ambar

---

[48] Gulzarilal Nanda, "Some Aspects of Khadi," Congress Jubilee Brochure, No. 3 (Allahabad: All India Congress Committee, 1935), 12. BL P/T 1194.
[49] *All India Khadi and Village Industries Board Annual Report, 1955-6*, 306-7; 312.
[50] *Ibid*, 85.
[51] Vijayadev, 19 and Vinoba Bhave, "Ambaravtar" (October 18, 1956), in K. G. Deodhar, *Ambar Charkha Kyon?* (Nasik: Khadi Gramodyog Ayog Ambar Shiksha Vibhag, 1957), 14.

charkha had been deputed to resolve—agriculturalists have no work for six months of the year, urban unemployment is high, families and women are idle—the final ten pages contain a series of stirring images. In one, a bejeweled, *sari*-clad woman resembling Mother India sits on a globe, an ambar charkha cradled in her lap (Fig. 4.2). In another, an enormous hand gripping an ambar charkha between its fingers rises from the earth, sending stones flying in every direction (Fig. 4.3). And in the album's final image, the ambar charkha is seated on a gigantic pedestal, framed by an even larger *chakra*, or wheel (Fig. 4.4). The emblem of the Indian republic is attached to the pedestal's front, only wrapped around the familiar lions are the words "silent economic revolution."[52] As we are told in subsequent comic books, both of them published in 1959, the ambar charkha is the "silent revolutionary" that will foment this "silent revolution."[53] Indeed, the images are only slightly less dramatic in the latter albums, one of which shows an Indian family taking shelter from a threatening cluster of clouds inside an outsized ambar charkha.[54] Although these comic books clearly performed a propagandistic function, they also reflected genuine excitement, excitement that was in many regards quite warranted.

[52] *The Story of a Silent Economic Revolution* (Bombay: Indulal H. Shah, 1958), 28, 29, and 35.
[53] *Ambar Charkha* (1959), 44 and *The Silent Revolution* (Khadi and Village Industries Commission, 1959), 22.
[54] *The Silent Revolution*, 19.

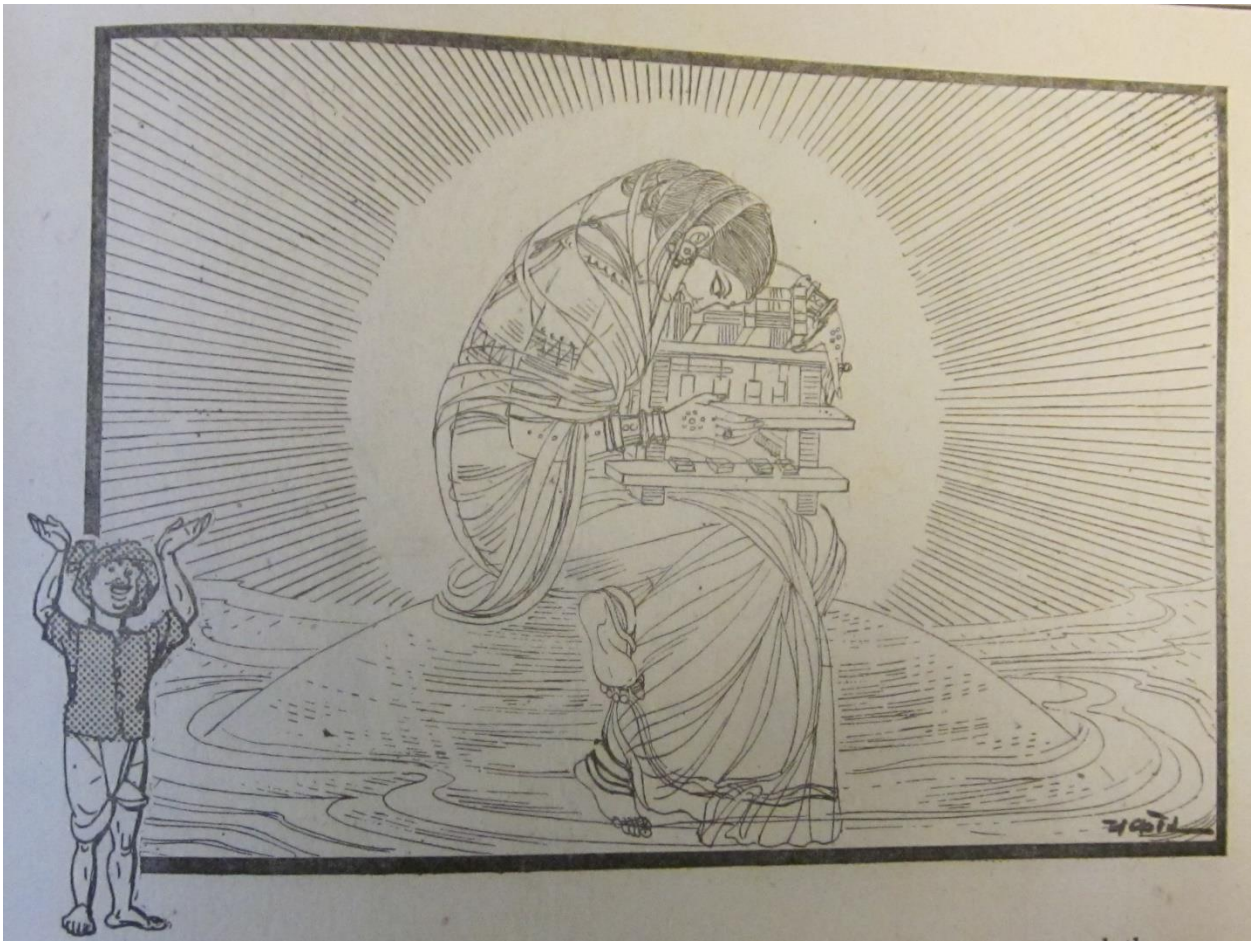

Fig. 4. Illustration from a KVIC album showing Mother India cradling the ambar charkha.[55]

[55] *The Story of a Silent Economic Revolution* 1958, 28.

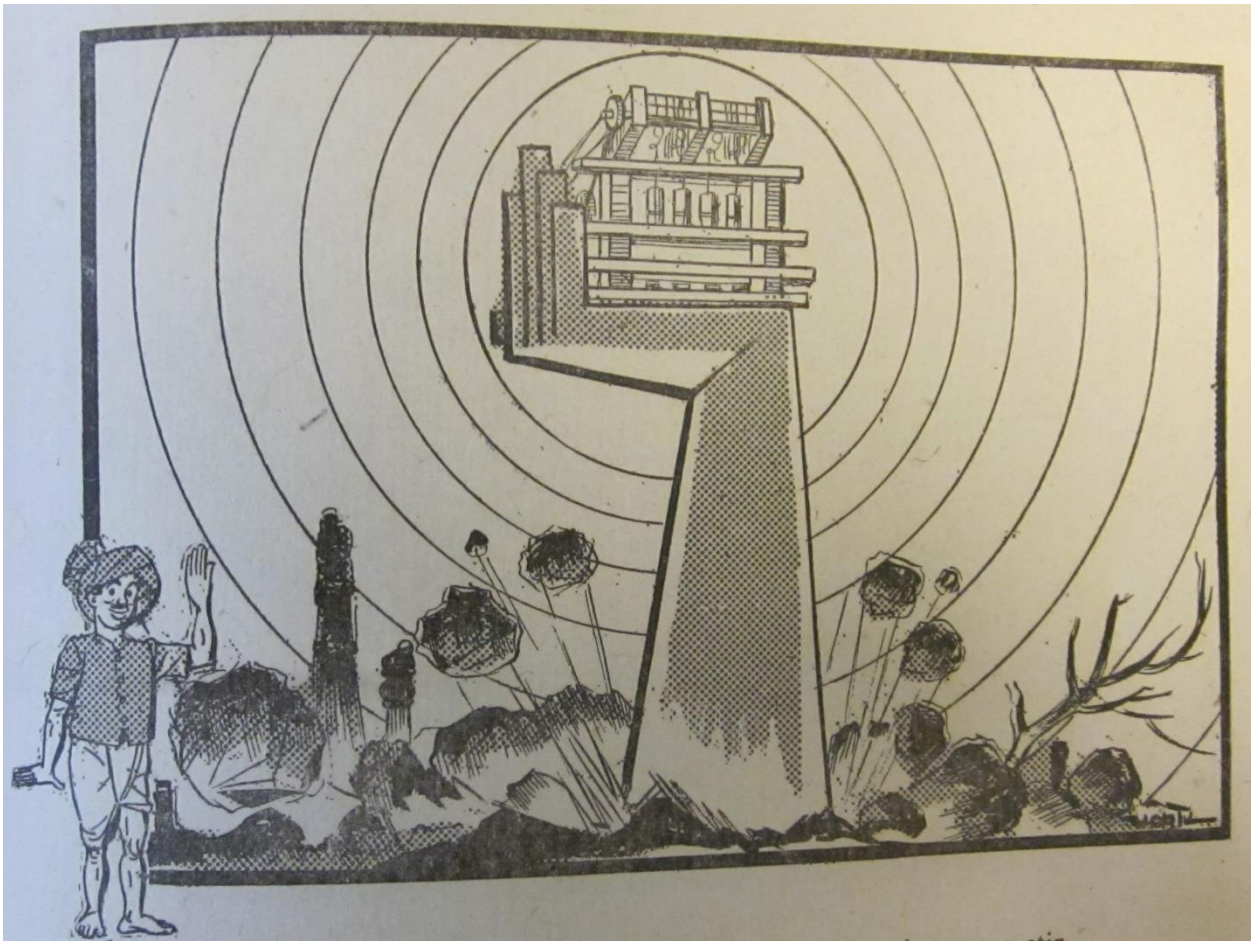

Fig. 4.3 Illustration from a KVIC album showing giant hand cradling the ambar charkha.[56]

[56] *Ibid*, 29.

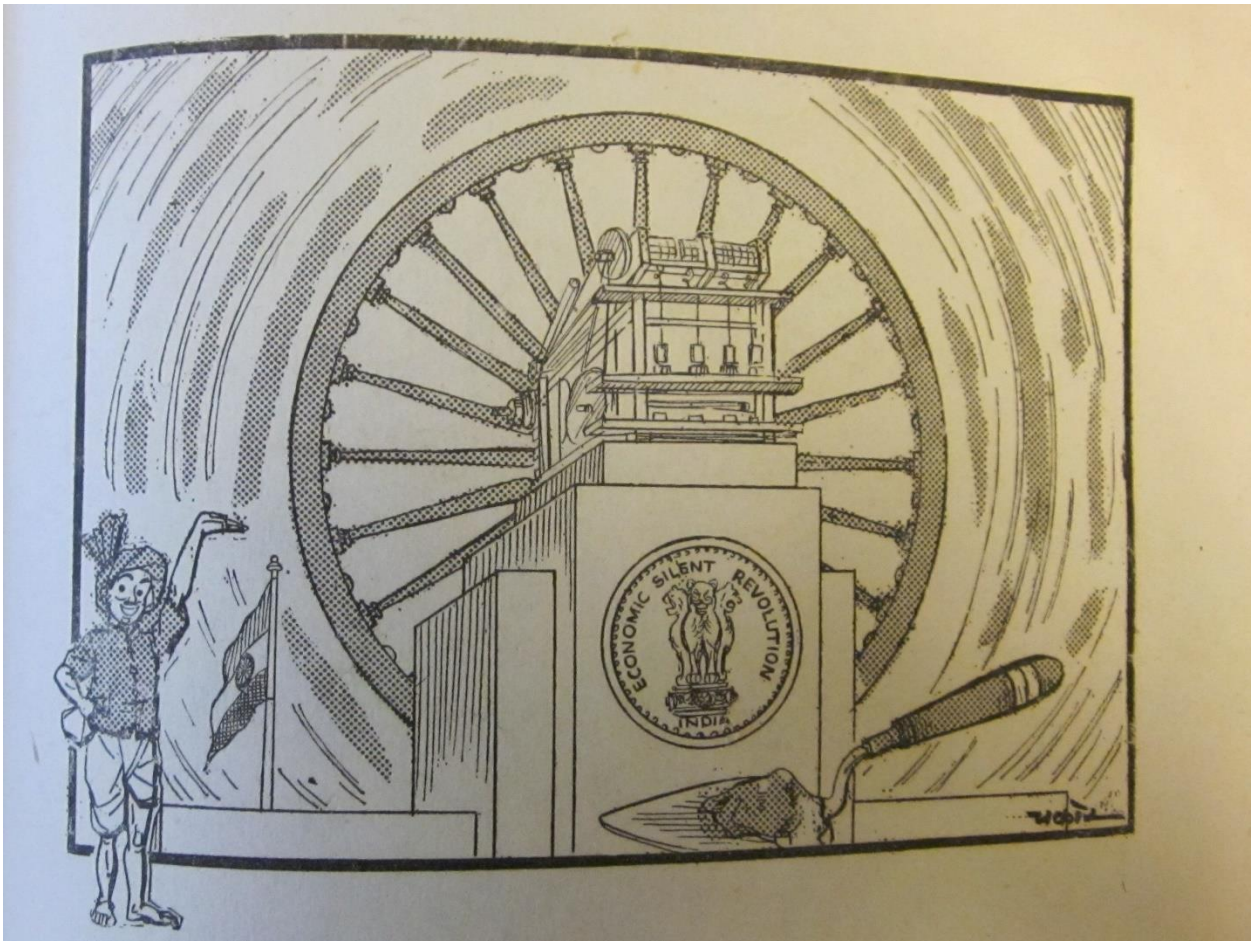

Fig. 4.4 Illustration from a KVIC album showing the ambar charkha on a pedestal with a modified version of the motto of the Indian republic on the front.[57]

[57] *Ibid*, 30.

The material structure of the ambar charkha made it possible for khadi organizations and spinners themselves to effect a major shift in the organization of spinning. Because the ambar charkha produced far more yarn than the upright charkha—six to eight hanks in an eight-hour workday as opposed to the latter's one to two—spinners could afford to operate it full-time. Each of the three comic books made prominent note of this fact, providing readers with two sets of projected earnings: one for the individual who spun only in his "idle time" and one for the individual who spun eight hours a day, three hundred days a year.[58] Furthermore, because the ambar charkha came as a set, family members could complete preparatory tasks like carding and drawing cotton while the spinner spun. Indeed, the comic books encouraged spinners to adopt the ambar charkha as a "family unit" since, by doing so, they could increase their daily production by ten to twenty hanks of yarn.[59] Next, the ambar charkha, by centralizing several productive processes in a single home, made it possible for spinners to enjoy greater control over their own labor. One of the comic books depicts an ideal division of labor in which the oldest son specializes in carding, the father and mother in drawing, and the son's wife and widowed sister in spinning. Because of this arrangement the family can afford to reduce its labor in the fields, pay off its debts, and still have enough yarn left over for clothing, all while working according to its own schedule.[60] Finally, because the ambar charkha required greater technical expertise to operate than the upright charkha, would-be-spinners had to complete a longer training or apprenticeship period. In fact, a government appointed committee recommended in 1956 that aspiring spinners complete three months of training and acquire a proficiency certificate before

[58] *The Story*, 22-4; *Ambar Charkha* (1959), 22; *The Silent Revolution*, 22-4. The spinner who worked only in his "idle time" could expect to earn at least Rs. 120 per year, while the spinner who worked full-time could expect to earn at least Rs. 240.
[59] *Ambar Charkha* (1959), 22 and *Silent Revolution*, 17. Such an increase would likely have guaranteed a yearly income of at least Rs. 1,000.
[60] *Ambar Charkha* (1959), 35-8.

becoming eligible for a government subsidized ambar charkha.[61] While three months might not seem like a long time, would-be spinners, many of them poor peasants more accustomed to working in the fields than spinning a wheel, had to ply the charkha for eight hours daily, often at an official training facility, in order to gain certification. Such requirements constituted a considerable entry barrier to the profession, ensuring that only a relatively small cadre of ambar charkha spinners would emerge.

Even the KVIC and its predecessor the All India Khadi and Village Industries Board (AIKVIB) recognized that with the invention of the ambar charkha something fundamental about spinning had changed. Prior to 1954, at least for the purposes of official record-keeping, a charkha was simply a charkha. Although there were many different models of the charkha in existence, each with its own name and distinctive appearance, khadi oversight bodies did not distinguish between yarn produced using a box charkha and a kisan charkha, a peti charkha and a bamboo charkha.[62] However, post-1954 and the invention of the ambar charkha, two categories of spinning wheel emerged: *traditional*, a category that continued to contain within it a variety of spinning wheels, and *ambar*, a singular category reserved for the ambar charkha alone. From that point on, yarn, cloth, and even spinners themselves were distinguished from one another based on their association with the ambar charkha.[63] Yarn became traditional and ambar yarn. Spinners became traditional and ambar spinners. Two central government ministers even questioned

---

[61] Ambar Charkha Enquiry Committee, 1-6; 49.
[62] For the pre-1953 model, see *Khadi Guide 1927*, *Khadi Guide 1927*, and *All India Khadi and Village Industries Board (Ministry of Commerce and Industry): Annual Report, 1953-54* (Bombay: KVIC, 1955).
[63] This change can be seen as early as *The Second Five Year Plan for Khadi & Village Industries* (Bombay: All India Khadi and Village Industries Board, 1955), 18-26. See also *Khadi and Village Industries Commission Act, 1956 (No. 61 of 1956): An Act to provide for the establishment of a Commission for the development of Khadi and Village Industries and for matters connected therewith* (Bombay: Khadi and Village Industries Commission, 1957), 32; *The Third Five Year Plan for Khadi & Village Industries* (Bombay: Khadi and Village Industries Commission, 1960), 3-4; and *Khadi and Village Industries Commission Annual Report, 1961-62* (Bombay: Khadi and Village Industries Commission Directorate of Publicity, 1962), 27-39.

whether cloth produced from ambar charkha spun yarn should be considered khadi in the first place, arguing that the AIKVIB itself had not made up its mind on the issue.[64] Another government-affiliated khadi organization, the Sarva Seva Sangh, waited until the end of December 1955 to issue a determination that such cloth was, in fact, khadi.[65]

The emergence of a distinction between traditional and ambar cannot be understood without reference to two other distinctions, both of which predated the former one by almost three decades. While the first, which distinguished between cloth produced by hand and cloth produced by machine-powered technologies, is relatively well known, the second has attracted considerably less attention.[66] Known in some circles as the problem of "full" versus "half" khadi, it drew a distinction between khadi produced using handspun yarn and khadi produced using millspun yarn.[67] Although technically speaking, khadi was cloth made of handspun, handwoven yarn, the organization charged with overseeing the khadi movement (the All India Spinners Association or AISA) sometimes employed a looser definition. The impetus for the half-full distinction was partly a financial one: because millspun yarn was cheaper than handspun yarn and AISA paid weavers a fixed wage, weavers had incentive to "cheat," to pass off millspun yarn as handspun yarn to make more money. The impetus was also moral, however—Gandhi and some of his colleagues believed that the spinning mills had destroyed the livelihoods of many poor Indians—and the Khaddar (Protection of Name) Act was passed in 1934 to address both problems.[68] Unfortunately, AISA and its partner organizations found it difficult to detect half

---

[64] *All India Khadi and Village Industries Board Annual Report, 1955-6*, 306-7; 312. The ministers in question were K. C. Reddi, Union Minister for Production, and Gulzarilal Nanda, Union Minister for Planning.
[65] *All India Khadi and Village Industries Board Annual Report, 1955-6*, 85.
[66] Abigail McGowan argues that the distinction is not a natural one in *Crafting the Nation*. In her estimation, a consensus that crafts were different from industrial goods emerged in India in the second half of the nineteenth century and provided one of the frameworks within which the subsequent khadi movement can be placed (11; 189).
[67] The earliest formulation of full vs. half khadi I can find is contained in the *Khadi Guide, 1929*, 8.
[68] The Act decreed that khaddar or khadi, here defined as "cotton cloth which is spun and woven by hand in India," "shall be deemed to be trade descriptions within the meaning of the Merchandise Marks Act IV of 1889." The

khadi, which looked and felt almost exactly the same as full khadi. The very materiality of the cloth in question made it possible to conceal deceit, to pretend that millspun yarn was handspun yarn.

Similarly, the problem of traditional versus ambar khadi also stemmed from financial and moral concerns. Because the Government of India had already committed itself to subsidizing the sale of khadi—consumers received a rebate of three annas on the rupee plus an additional subsidy of one anna on the rupee—it would incur considerable expense by adding another category of cloth to the khadi family.[69] However, on the face of things, there was no reason why ambar cloth should not be treated as khadi since it, too, was made of handspun yarn. Economics aside, then, the government had another reason for considering the possibility that ambar cloth was something else besides khadi. That reason was the social relations of production that gave rise to it. While the KVIC's enthusiasm for the ambar charkha declined significantly in the early 1960s, in the 1950s it still expected that the ambar charkha could serve as the foundation of a new class of professional spinners. Though it did not describe them as such, these spinners would be independent artisans with a distinctive moral economy, not the poorly-trained peasants who spun part-time for the khadi movement. In fact, the KVIC even attempted to develop a genealogy for this new category of spinner through its visual publications, a genealogy that extended all the way back to Harappa and Mohenjo Daro. According to the fictional narrator of one of the KVIC's comic books, a khadi worker charged with spreading the gospel of the ambar charkha to eager villagers, the history of the ambar charkha can be traced back to the very

---

Merchandise Marks Act governed the application of false trade descriptions to a whole host of goods. When extended to khadi, it made it illegal for weavers, merchants, and mills to describe as khadi cloth produced from handspun yarn. C. Rajagopalachari prepared a draft bill to this effect as early as March 1929. See "Khadi in the Legislatures," 28 March 1929, *Collected Works of Mahatma Gandhi* 45 (4 Feb. 1929-11 May 1929), 280-1.

[69] *All India Khadi and Village Industries Board Annual Report, 1955-6*, 306-7, 312; and Ambar Charkha Enquiry Committee, 62-3. The AIKVIB proposed providing a rebate of four annas on the rupee to purchasers of ambar khadi.

moment when "civilization" first "blossomed" in India. For example, pointing to an image of the ruins of Mohenjodaro, he explains that archaeological excavations uncovered a charkha there. Indians also plied the charkha during the "Vedic," "Buddhist," "medieval," and "Mughal" periods but were forced to stop in the eighteenth and nineteenth centuries when the arrival of the East India Company put an end to their industry (Fig. 4.5).[70] While the story of the devastation of the Indian textiles industry is a familiar one, the KVIC and its fictional khadi worker tell it with a notable twist: the spinning wheel becomes the central actor in the story, the crucial link connecting one generation of spinners to the next.

[70] *Ambar Charkha* 1959, 2-6.

Fig. 4.5 Illustration from a KVIC album tracing the charkha to Mohenjo Daro.[71]

The KVIC's comic books are, in many respects, insightful accounts of the relationship between machines and bodies, and the ways in which changes in one can effect potentially transformative changes in the other. Despite the presence of images showing British boots crushing Indian bodies beneath them, this is not a one-sided story, however.[72] Instead, machines are allowed—even encouraged—to participate in the making of modern India, an India in which things and humans work together to decrease unemployment and build peaceful, almost utopian village communities. Machines can do this work, in part, because they have bodies of their own, bodies that change shape and, in doing so, acquire new capacities. Just as changing human bodies can be mapped onto genealogical charts and evolutionary grids, changing machine-bodies can also be plotted. In fact, the KVIC includes two family trees in the pages of its comic books, one of which places a tiny *takli*, or spindle, in the background and a much larger ambar charkha in the foreground. Arranged between them in order of increasing size are a traditional charkha, a Punjabi charkha, a box charkha, and another unidentified predecessor to the ambar charkha.[73] Sweeping them all along as if into the future is a swirling white carpet, a reminder that while all charkhas are members of the same genus, their species separates them (Fig. 4.6).[74] The second, and substantially longer, family tree arranges charkhas in order of invention along consecutive pages. Unlike the others, the ambar charkha gets an entire page to itself, framed against a light blue background with soft white lines radiating around it.[75] These family trees do not belong to the charkha alone, however, but instead intersect time and again with "larger" trends in Indian history. For example, while the periodization outlined above—Mohenjo Daro and Harappa

---

[71] *Ibid*, 3.
[72] *Ibid*, 7-9.
[73] Names are not assigned to any of the charkhas in the comic book itself. I employ the terminology used by the National Gandhi Museum.
[74] *Silent Revolution*, 15.
[75] *Ambar Charkha* (1959), 3-21 but especially 12-21.

followed by the Vedic period, then the Buddhist period, then the medieval period, then the Mughal period then the British period—is a standard if not unproblematic one, it gains its coherency in this account through the work done by the charkha and its changing forms. The Vedic period is not related to the Mughal period by its common location in a space called India (although there are undertones of this, of course) but because the charkha effects a relationship between them. Because it is an object with a material body it can move between these "periods" in ways that even humans cannot. Indeed, its forward movement through time and space is the central force joining one period to another and, more importantly in this case, providing the ambar charkha spinners of the 1950s with a connection to an Indian past. Such a connection is vital since, on both an empirical and analytical level, the existence of such a history has long functioned as a crucial resource for artisanal communities.

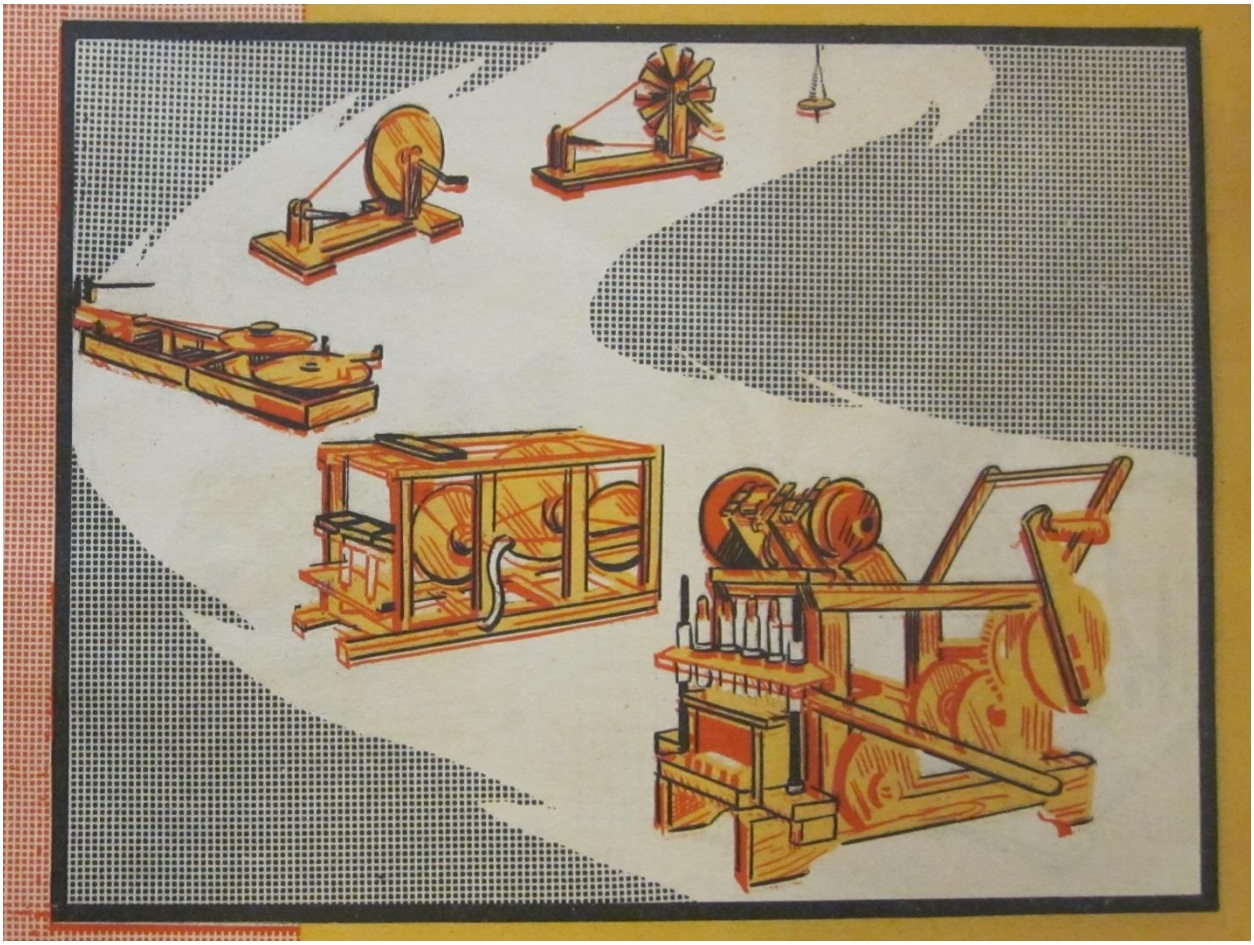

Fig. 4.6 Illustration from a KVIC album tracing a genealogy of the ambar charkha.[76]

Still, the development of an imagined history for ambar charkha spinners was not in itself sufficient and so the Khera Committee, appointed by the Government of India in 1955 to evaluate the results of a series of tests performed on the ambar charkha, took the unusual step of recommending that newly manufactured ambar charkhas go first to weavers and their families.[77] This step was unusual in that for the preceding two centuries at least, Indian weavers had not been in the habit of spinning. Instead they secured their yarn from merchant intermediaries or

[76] *The Silent Revolution*, 14.
[77] For a brief summary of the Khera Committee's mandate, see *All India Khadi and Village Industries Board Annual Report, 1955-6*, 91. The Khera Committee was also referred to as the Ambar Charkha committee.

textile mills and, upon weaving it into cloth, sent it elsewhere for washing and dyeing. As a result, the Khera Committee's proposal that "at least 75 percent of the spinners (other than the present spinners of traditional khadi yarn) should be from weavers' families, until nearly all such families have been provided with at least one, preferably two, Ambar charkha sets" threatened not only to create an entirely new breed of spinner but to overhaul the weaving industry as well.[78] Thus, the committee's recommendations and the KVIC's subsequent attempts to act upon them can be read as an effort to embed the new ambar charkha spinner within a preexisting artisanal community of weavers. Such a strategy had the advantage of enacting two improvements simultaneously: ambar charkha spinners would become artisans and weavers, up to this point the archetypal Indian artisan, would become better ones.

Interestingly, the material apparatus of the new Indian artisan, the spinner plus weaver, would look much like that of the factory with the crucial caveat that centralization, not specialization, would be its defining feature. If, as Sevak and others have already informed us, the ambar charkha was a "miniature spinning mill decentralized and worked by the villager in his hut," the insertion of the weaver and his handloom into the picture made it more like one of the dual spinning-weaving factories that had opened in Kanpur and other industrial centers at the beginning of the twentieth century.[79] Though these factories sold some of their yarn on the open market, they consumed the vast majority of it themselves, thus concentrating virtually the entire cloth production process within the space of the factory floor. Similarly, the ambar-charkha-spinner-plus-weaver-would centralize cloth production within a single home, in the process sharply reducing the influence of merchant intermediaries. In addition, by encouraging weavers

[78] Ambar Charkha Enquiry Committee, 9 and 50-1.
[79] Sevak, 15.

to spin their own yarn, one of the primary threats to the long-term viability of khadi—the problem of bad thread, or millspun yarn passed off as handspun yarn—would be eliminated.

Women as Industrial Producers

The village home had never before been the factory floor. It had, however, been a place of work, especially for women, who performed a wide variety of domestic tasks within its four walls. If one strand of feminist scholarship has characterized the home as a site of value production on the basis of women's oftentimes invisible labor within it, another has investigated how the production of a boundary between home and work meant different things to different groups of women, some of whom were largely confined to the home and others of whom labored in the factory or the fields. Though members of this latter group enjoyed some freedom of mobility, they rarely enjoyed equality of status with their male co-workers, receiving lower wages (when indeed they were compensated) and performing more menial tasks. Meanwhile, they assumed primary responsibility for a growing number of agricultural operations in the late nineteenth and early twentieth centuries as men increasingly migrated to urban areas to seek out factory employment.[80] Growing landlessness and the progressive "de-feminization" of the industrial workforce in the 1920s and 1930s further increased the ranks of female agricultural labor.[81] Some women supplemented their agricultural income through cottage industries work

---

[80] Sen 1999, 71-2.

[81] The term "de-feminization" comes from Roy 2005, 134. Women made up a progressively smaller percentage of the industrial workforce in many large centers. For instance, the percentage of women employed in Bengal's jute industry declined from 20% in 1901 to under 13% in 1941 (Sen 1999, 4). In Bombay, women's participation in the cotton textiles industry declined from about 25% in the 1890s to 20% by the 1920s to no more than 15% by the late 1930s (Chandavarkar 1994, 94). In the Kanpur textiles industry, women's participation declined from 5% in 1906 to 2% in 1921 to 1% by 1944 (Joshi 2005, 84-5). Rajnarayan Chandavarkar attributes de-feminization to several factors, especially government legislation that restricted women's working hours and made employers responsible for maternity benefits. He adds that families generally benefited from a division of labor making women responsible for maintaining rural landholdings while assigning to men the role of seeking out wage labor in urban areas. As a result, those women who entered the urban labor market tended to be widowed or to have an

but found that many of the tasks they had previously performed (among them, rice pounding, grain husking, and flour grinding) were being taken over by small-size mechanized units.[82] And, to make matters worse, new "ideologies of domesticity" "valorised women as mothers and homemakers rather than as workers," thus divesting even income-producing domestic labor of much of its economic content.[83]

Meanwhile, Indian politicians and bureaucrats drew increasingly explicit connections between household management and national development in the years immediately following independence. Indian nationalists had long posited the existence of such a link, equating household management alternately with the management of the community and of the nation.[84] In Partha Chatterjee's telling, the "nationalist resolution of the women's question" in the late nineteenth century produced a "new woman," distinct from both her "traditional" and "Western" counterparts. This new woman was closely connected to a particular spatial formation: the inner, spiritual domain of the home and family. Significantly, the nation came into being in this inner domain, thus remaining separate (and protected) from the outer, material domain in which colonialism reigned supreme.[85] The association between home, woman, and nation forged under colonial rule would be mobilized once again in the post-independence era in the face of chronic food shortages. State officials saddled women, in particular, with the task of monitoring family

---

unemployed or underemployed husband. See Chandavarkar, *The Origins of Industrial Capitalism: Business Strategies and the Working Classes in Bombay, 1900-1940* (Cambridge: Cambridge University Press, 1994), 94-9.

[82] Sen 1999, 78-80.

[83] These ideologies gained force in different parts of India at different times. Samita Sen argues that such an ideology emerged among the Bengali elite in the late nineteenth century. This ideology dissociated domesticity from productivity and the family from the economy. See Sen 1999, 56-60. Chitra Joshi, by contrast, suggests that these ideologies gathered force among Kanpuri mill managers and colonial officials only from the 1920s and 30s. See Joshi 2005, 87.

[84] The classic statement on the relationship between household management and the nation is Partha Chatterjee, *The Nation and its Fragments: Colonial and Postcolonial Histories* (Princeton: Princeton University Press, 1993), 116-34.

[85] Chatterjee 1993, 146-51.

food consumption, thus making them partly responsible for India's failure to accomplish food sovereignty.[86] But as Samita Sen has argued in relation to an earlier period, women's consumption-related tasks had been evacuated of all economic value and were therefore understood to be inherently unproductive.[87] KVIC's reconfiguration of the home as a factory and home-based industrial labor as a national obligation thus marked a significant reorientation of the home-nation dyad, all the more so when it became clear that KVIC meant for women to serve as India's normative industrial producers.

Consider the promotional albums released by KVIC to publicize its vision for the ambar charkha. Three in number, the albums narrated the ambar charkha's history through a combination of statistical accounts of rural poverty, staged dialogues between imaginary villagers, and elaborate imagery. One of the albums introduced readers to what it termed "a typical Indian rural family" consisting of nine members: Gaurishankar, the father, who works his small plot of land for six months a year; Ambabai, the mother, who runs the household; Gopinath, the older son, who assists his father in the fields; Gopinath's wife Saroj, who nurses their young child; a nameless daughter and younger son; and the widow and daughter of Gaurishankar's deceased brother. The family, explains the album's anonymous narrator, is "poor, quite poor"; it does not generate enough from agricultural work to supply even its most basic needs. One day, a neighbor informs Gopinath that a training center has been opened in the village to provide instruction in the ambar charkha. Gopinath greets this news with disdain: "What? A new charka? Ha haa! Tell it to somebody [else]. I've no time for your Charkha; what

---

[86] Hayden S. Kantor, "'A Dead Letter of the Statute Book': The Strange Bureaucratic Life of the Bihar Food Economy and Guest Control Order, 1950-1954," *South Asian History and Culture* (2016), 2-3; Benjamin Siegel, "'Self-Help which Ennobles a Nation': Development, Citizenship, and the Obligations of Eating in India's Austerity Years," *Modern Asian Studies* (November 2015), 33-5; and Taylor C. Sherman, "From 'Grow More Food' to 'Miss a Meal': Hunger, Development and the Limits of Post-Colonial Nationalism in India, 1947-1957," *South Asia: Journal of South Asian Studies* 36, no. 4 (2013): 571-88.
[87] Sen 1999, 59-60.

can it give?" But Gopinath is eventually persuaded to enroll his wife in the first batch of trainees, and after three months, she is given a charkha to take home with her.[88] The entire family crowds around Saroj to examine the charkha and after a few initial missteps, they all learn how to operate each of its three components. With the exception of the baby, each family member plies the charkha for at least a few hours a day, and their joint efforts generate an additional monthly cash income of Rs. 70. The family's rising fortunes create "a stir in the village." The daughter finds a good husband, the youngest son is sent away to school, and Gopinath pays off a longstanding debt. "And above all," the narrator comments, "Ambar Charkha made it possible for the members of the family to join in co-operative effort, establish harmony and thus opened the road to prosperity."[89]

The other two albums told much the same story. In one, a peasant family improves its fortunes by procuring three ambar charkhas, one each for the grandfather, wife, and young son.[90] In the other, we see three generations of a single family working the ambar charkha, dhunai modhiya, and ambar belni side-by-side with a pile of coins and rupee notes stacked between them.[91] Other images depict village life more generally, emphasizing the changes the ambar charkha will bring. The "before" images (before the ambar charkha, that is) show hungry villagers clad only in tattered rags, the children playing listlessly and the men sitting idly on the ground or smoking a pipe to pass the time. Meanwhile, women tend anxiously to babies or gossip with their neighbors. Even the cows do nothing for much of the year, their ribs visible through their skin as they lie sleeping in the dirt (Fig. 4.7). The "after" images, by contrast, depict a bucolic Eden. Villagers are smiling and well fed, their clothes clean and neatly pressed.

---

[88] Vijayadev, 27-9.
[89] Vijayadev, 33-9.
[90] *The Story of a Silent Economic Revolution* (Bombay: Khadi and Village Industries Commission, 1958),
[91] *The Silent Revolution* (Khadi and Village Industries Commission, 1959), 16.

Domestic life is blissful as families sit together, take walks together, plan their futures together. Caste and religious prejudices are overcome, and women gain in social status. The cows look happier and fatter. And lest we forget who or what to thank for this astonishing transformation, we see an ambar charkha whirring busily in every village home (Figs. 4.8 and 4.9).[92]

Fig. 4.7 Illustration from a KVIC album showing village life in the absence of the ambar charkha.[93]

[92] Vijayadev, especially 27-8 and 43-4; *The Silent Revolution* 1959, especially 2-6 and 19-20.
[93] *The Silent Revolution* 1959, 2.

Fig. 4.8 Illustration from a KVIC album showing village life after the ambar charkha.[94]

[94] *Ibid*, 19.

Fig. 4.9 Illustration from a KVIC album showing village life after the ambar charkha.[95]

These fairly generic images of village uplift would not look out of place in the promotional materials for other rural reconstruction programs, including the much-vaunted Community Development program. However, other images, particularly those that emphasize the special role performed by women, mark a point of divergence. In a notable reversal of prevailing gender roles, women are portrayed as the primary architects of rural industrialization. For instance, it is women who receive initial training on the ambar charkha, then instruct male

[95] *Ibid*, 20.

relatives in its use. We see this clearly in the case of the aforementioned Saroj, who is first depicted meekly assenting to her husband's command to do well in the training program and subsequently as the authority to whom her husband turns when he is confused about how to operate the ambar charkha.[96] Other husbands behave in a similar fashion, even periodically showing up at the training center to offer their wives refreshments.[97]

KVIC reports suggest that women may have performed this instructional role even outside the pages of a fictional album. For instance, K. G. Deodhar, the head of KVIC's Ambar Education Department, described the process by which an ambar charkha generally entered a household:

> A sister (*bahan*) learns the charkha, takes it home, and teaches her relatives how to use it. Her house becomes a school (*vidyalay*) and that sister becomes a teacher (*shikshika*). In this fashion, in just a short time, the entire house becomes familiar with the ambar charkha, and the ambar charkha turns there from dawn till dusk.

To bolster his point, he cited examples from across India, asserting that a similar pattern was in effect in Madhya Bharat's Shivpuri village, Rajasthan's Bansa Village, Madras' Mallekund Palayam village, and many others.[98] Women had even proven themselves capable mechanics, he commented, intuitively understanding how to repair broken spinning wheels and communicating this knowledge to others.[99]

The pedagogical role khadi organizations assigned to women both mirrored and diverged from the pedagogical role social reformers had assigned them more than half a century earlier. Chatterjee's new woman had been encouraged to acquire a "modern" education partly so that she could serve as a better companion to her husband and partly so that she could better instruct her

---

[96] Vijayadev, 30-4.
[97] Vijayadev, 42.
[98] K. G. Deodhar, *Ambar Charkha Yantra* (Nasik: Khadi Gramodyog Ayog Ambar Shiksha Vibhag, 1957), 36-8. Translated from the Hindi.
[99] Deodhar, *Ambar Charkha Yantra* 1957, 33.

children.[100] By contrast, the ideal woman envisioned by khadi organizations was expected to supply her family with an industrial education, then supervise them while they worked. Moreover, if the family described by Chatterjee was an upper-caste, Bengali Hindu one, the family depicted in KVIC promotional materials was a generic unit—Hindu or Muslim, upper-caste or lower-caste, joint or nuclear. In this respect, it also differed from the stock family of the social reform literature, which was almost always elite and/or urban.[101] Still, in their insistence that women assume primary responsibility for education within the family, khadi organizations were retreading old ground even as they sought to expand the scope of what qualified as the proper subject of women's education.

It is worth dwelling on this point a little longer, since prior to this time, women had not been the primary targets of technical education. On the contrary, colonial officials and Indian reformers alike had made the "artisan"—almost always conceptualized as a man—the near exclusive focus of their technical schemes. As part of those efforts, they had established technical schools throughout India to instruct artisans in design and production techniques.[102] While some government and private institutions also established home economics courses for women, these seem to have been regarded as primarily domestic, and not technical, pursuits.[103] Why, then, did khadi organizations identify women as the proper subjects of an industrial

---

[100] Chatterjee 1993, 127-30.
[101] Examples are Gail Minault, *Secluded Scholars: Women's Education and Muslim Social Reform in Colonial India* (Delhi: Oxford University Press, 1998); Geraldine Forbes, *Women in Modern India* (Cambridge: Cambridge University Press, 1996); and Faisal Devji, "Gender and the Politics of Space: The Movement for Women's Reform in Muslim India, 1857-1900," *South Asia* 14, no. 1 (1991): 141-53.
[102] Abigail McGowan, *Crafting the Nation in Colonial India* (New York: Palgrave MacMillan, 2009) and Arindam Dutta, *The Bureaucracy of Beauty: Design in the Age of its Global Reproducibility* (New York: Routledge, 2007).
[103] For instance, the Allahabad Agricultural Institute, established by the American missionary Sam Higginbottom in the 1910s, began to offer a home economics course in 1936. Higginbottom's wife, Ethelind, directed the course. See Sam Higginbottom, *Sam Higginbottom, Farmer: An Autobiography* (New York: Charles Scribner's Sons, 1949), 209-10 and 224-5.

education and, by extension, as the most suitable agents for the reindustrialization of the countryside?

Khadi institutions did not offer a straightforward answer to this question, so we are left with multiple possibilities. The first of these is that the systematic undervaluation of women's work predisposed families to view female labor as more dispensable than male labor. In order to receive an ambar charkha, individuals had to complete a three-month training program—six weeks of classroom instruction followed by six weeks of supervised practical work—and pass an exam.[104] Though some training institutes offered a small stipend to trainees, others did not, meaning that families were probably reluctant to send their highest-earning members to the training program.[105] Since women tended to earn less than men and to perform a higher percentage of work assigned little-to-no economic value, they may have seemed the most obvious candidates for the course. This explanation is not entirely satisfactory, however, since women made up a progressively larger share of the rural workforce as the twentieth century advanced. While a growing number of men migrated to urban areas in search of industrial employment, women were far more likely to stay put or to migrate relatively short distances to work as seasonal agricultural laborers.[106] As a result, even as urban industry was increasingly masculinized, rural agricultural work was increasingly feminized, making women the de facto protagonists of the rural economy.

The KVIC albums drew a direct link between women's technical labor and the reproduction of the rural household through a series of vignettes, many of which portrayed

---

[104] Tarunbhai, *Ambar Charkha* (Varanasi: Sarvoday-Sahitya-Prakashan, 1958), 86 and Government of India, Ministry of Production, *The Report of the Ambar-Charkha Enquiry Committee, 1956* (Delhi: Government of India Press, 1956), 1-6 and 49.
[105] Haynes 2012, 211 reports that government weaving schools often had difficulty attracting participants precisely because weaving families found it prohibitively expensive to release even small children from their weaving duties.
[106] This general pattern is discussed in Chandavarkar 1994, 94-9 and Sen 1999, 25-33.

women as their family's primary breadwinners. For instance, one album narrated the story of a "young housewife from Subhashnagar, Dum Dum, Calcutta-28, mother of three children," who "saved her family from starvation with the help of her Ambar Set." "She has defeated her husband in the race for earning more. Her husband working eight hours a day in a nearby factory, earns only Rs. 30 a month, while she earned Rs. 65 in the month of July by plying her Ambar Charkha."[107] Another album introduced readers to a man who, having lost his job at a factory, returns home to his wife. In response to a neighbor's questions, he declares that he is not "panicky" and will make ends meet by assisting his wife on the ambar charkha (Fig. 4.10). Other vignettes told the story of households composed entirely of women, as in the case of "a family of four in Rajasthan consisting of a widowed mother, two unmarried daughters and a widowed daughter" that earns Rs. 100 a month jointly plying the ambar charkha.[108]

[107] *The Silent Revolution*, 19.
[108] Vijayadev, 41-2.

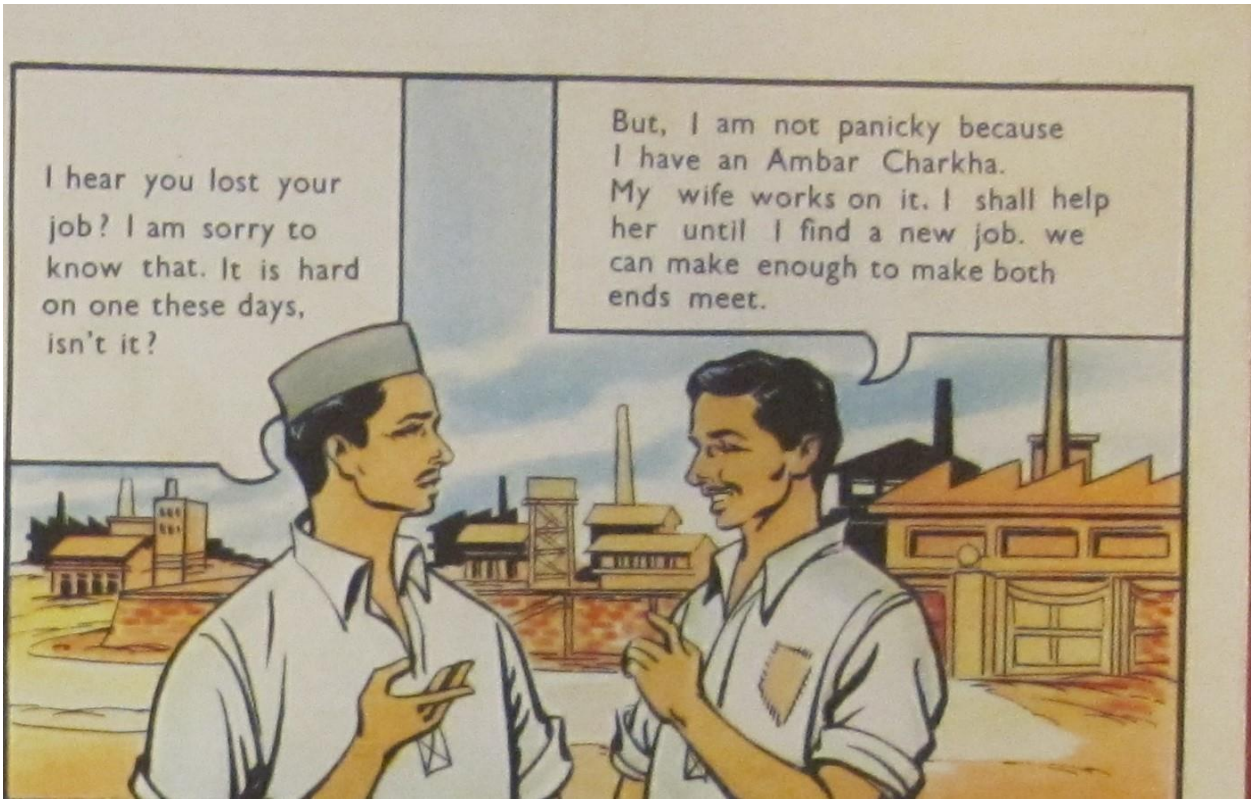

Fig. 4.10 Illustration from a KVIC album depicting the ambar charkha as a sort of unemployment insurance.[109]

It is far from clear that we should regard these vignettes as straightforward cases of female empowerment, however. After all, khadi organizations had shown only intermittent interest in challenging prevailing gender hierarchies and had even reinforced them through their hiring decisions. Though they insisted that both men and women ply the charkha, they simultaneously staffed their governing bodies almost exclusively with men and even expelled women from certain positions.[110] For instance, at the height of the ambar charkha program in 1958, UP's Shri Gandhi Ashram decreed that women would no longer be hired to inspect and repair ambar charkhas, and that those women currently performing such work would be

[109] Vijayadev, 42.
[110] National and state executive committees rarely counted more than one woman among their members.

retrenched.[111] We should keep these examples in mind when evaluating the extent to which khadi organizations truly aspired to change women's social standing through the medium of the ambar charkha program. Perhaps efforts to establish a new household economy had to pass through women by virtue of their longstanding association with the home. And perhaps, just as in the late nineteenth century, some social reformers encouraged women to acquire a "modern" education in order to better fulfill their primary roles as wife and mother, khadi officials viewed an industrial education as a prerequisite for women's new role as productive national citizen.

Crucially, this new role does not seem to have extended outside the home. On the contrary, khadi organizations repeatedly emphasized that women's primary responsibility was to their immediate family and that even neighbors could not always be relied upon to provide help in times of need. Consider the case of the fictional Savitri, whose struggle to support her two younger brothers after the death of her parents and older brother is the focus of the Hindi-language play *Ek Sahara*, or *A Support*. Published in 1960 by the Gandhian-inspired All India Sarva Seva Sangh, the play opens with an invocation: "A true helpmate is one who aids humanity in uplifting itself. That helpmate is useless which maims the body, rendering its limbs inert."[112] Rather cryptic, this invocation nevertheless alerts the reader to what will prove the play's central theme: self-sufficiency, especially the perils of overreliance on others.

The play's first section narrates Savitri's efforts to secure clothing and schoolbooks for her brothers. She largely fails in this attempt, not for lack of effort, but because of the greed and callousness of other members of her community. The local merchant refuses to pay Savitri the full value of a gold bracelet she brings to his shop to pawn. The local holyman appeals to God to

[111] Prabandhak samiti, 14-17 July 1958, Shri Gandhi Ashram, 226. SGA did not offer an explanation for this decision.
[112] Ramchet Verma, *Ek Sahara: Natak* (Kashi: Akhil Bharat Sarva-Seva-Sangh-Prakashan, 1960), foreword. Translated from Hindi.

help her but will not loan her money himself. A local notable refuses to give her work but offers to take her on as his mistress. A female neighbor offers a small loan but lacks the means to continue doing so.[113] Finally, in despair, Savitri informs her brothers that kindness and religion have vanished from the world, and leads them out of the village to seek a new life elsewhere. But even then, their fortunes continue to decline. An old woman threatens them with a stick when they ask for water on the grounds that they might belong to the "wrong caste."[114]

Relief arrives in the form of a nameless old man, who offers them water and lets them rest in his hut. But, he warns, he cannot take care of them forever. Instead, they must learn how to provide for themselves. To illustrate this point, he tells Savitri the story of a rabbit who was once threatened by a pack of dogs. Although the rabbit counted all the animals of the jungle among his friends, one-by-one they refused to aid him for fear the dogs would attack them, too. The rabbit grew increasingly desperate until, finally, he remembered his mother's words from long ago—"You will have to learn how to help yourself one day." And, with that, he leapt high into the air, vanishing from the dogs' sight and gaining his freedom. "Daughter!" announced the old man, "In just this fashion, you, too, should not rely on anyone's help in this world. You should place faith only in your own labor."[115]

He then proceeds to tell Savitri about the ambar charkha, which, he claims, is the only support she requires. To reinforce his point, he narrates the story of Ram Pyari, a washerman's daughter from Rajasthan, who has earned Rs. 2,500 in the last two years working exclusively on the ambar charkha.[116] Savitri agrees to give spinning a try, and after fifteen days, she has made substantial progress, producing 16-20 hanks of yarn a day. This covers all her expenses,

---

[113] *Ibid*, 15-23.
[114] *Ibid*, 25.
[115] *Ibid*, 28-9. Translated from Hindi.
[116] *Ibid*, 30-1.

including the hut she has constructed with the old man's assistance. Her two brothers assist her but still find the time to play for at least two hours every day. She even advises her impoverished neighbor to take up the ambar charkha, exclaiming:

> You can see how helpful the ambar is at providing an income of Rs. 1.5-2 per day even as you sit in your home. I say, 'Today, given Bharat's [India's] present circumstances, the ambar charkha can help so many families to provide for their daily needs, to make themselves self-sufficient [*swavalamban*] and to help the nation [*rashtra*] move forward'.[117]

She becomes involved in constructive work, too, and is appointed the manager of a cooperative store.[118] And when she finally returns to her old village, the people who previously shunned her gather round to beg her forgiveness.[119]

The "helpmate" of the play's invocation is the ambar charkha, the use of which enables Savitri to accomplish economic self-sufficiency for herself and her brothers. Though she requires some initial assistance in the form of an ambar charkha and spinning lessons, she soon assumes control over her own fate, a state of affairs the author recommends to everyone. Significantly, it takes relatively little effort for Savitri to become an autonomous economic agent. While in the early stages of the play she struggles to secure assistance from others, by the middle, she has acquired an ambar charkha and, with it, the means to fend for herself.

Conclusion

The qualities that separated the ambar charkha from the upright charkha made it appealing to an audience that extended beyond rank-and-file Gandhians. Members of the Indian planning establishment were especially excited since they viewed it as a technology potentially

---

[117] *Ibid*, 34-7. Translated from Hindi.
[118] *Ibid*, 42-3.
[119] *Ibid*, 46-7.

capable of providing full-time employment at little cost to the state. Partly as a result, the KVIC developed a plan to manufacture and introduce 2.5 million ambar charkhas to Indian households by the end of 1961. This plan failed spectacularly, however, leaving KVIC in considerable debt.[120] As if this was not enough, a committee appointed by the central government in 1959 to evaluate the ambar charkha had been extremely critical of its potential to become a household item. According to its survey, the upright and ambar charkhas together supplied an average annual employment of 119 days or less with the upright charkha accounting for sixty percent of those. In its judgment, the ambar charkha would be of little help in producing full employment.[121]

[120] This plan is discussed in many publications, including "Ambar Charkha-Parikshan Yojna," (Ahmedabad: Ambar Charkha Samiti Prakashan, 1956), 58.
[121] Prasad 2001, 167.

CONCLUSION

In November 2014, Indian news organizations reported that the Government of India (GoI) was preparing to challenge a German company's registration of "khadi" as an international trademark.[1] Although government officials publicly complained that the German company's actions amounted to theft of India's intellectual heritage, their submission to the trademark office made a different, more technical argument: that the GoI alone possessed the legal authority to certify cloth as "khadi" in both the domestic and the international market. The GoI's case rested on the argument that only the Khadi and Village Industries Commission (KVIC) enjoyed the legal authority to certify cloth as "khadi." KVIC had inherited this authority from its predecessor organization, the All India Spinners Association (AISA), the GoI explained in its brief. AISA, in turn, had inherited its authority directly from Gandhi, the putative inventor of "the khadi brand." In support of this argument, the GoI submitted historical documents signed by Gandhi and others purporting to show that KVIC (and before it AISA) enjoyed the exclusive right to regulate khadi production and thus to determine what counted as "khadi" in both the domestic and the international market. While the GoI's legal case attracted an outpouring of public support, the employees of several khadi institutions privately expressed their discomfort to me. "Gandhiji would not like this," one of them said. "He did not even take out a copyright on his own books.

[1] Dilasha Seth, "Government Objects to German Company Khadi Naturprodukte Using Khadi Trademark," *Economic Times*, https://economictimes.indiatimes.com/news/politics-and-nation/government-objects-to-german-company-khadi-naturprodukte-using-khadi-trademark/articleshow/45029004.cms, accessed March 18, 2017.

Khadi belongs to everyone. It can be made by everyone. How can you take out a trademark on something like that?"[2]

Then in February 2017, Indian news organizations reported that KVIC had sent a legal notice to several Indian companies ordering them to stop using the brand name "khadi" to sell their products. KVIC, citing khadi's historical importance, has claimed exclusive ownership over the khadi brand since at least 2013.[3] In practice, this means that it reserves the right to determine which companies can market their goods as "khadi." Companies interested in using the khadi brand must first demonstrate that they have complied with all relevant regulations and submit samples of their products for inspection. The head of the government agency charged with overseeing compliance explained that the regulations were put in place to safeguard khadi's purity. "Certain rules have to be followed," he continued, else there was no way of guaranteeing that the khadi marketed by the companies in question was genuine.[4] The experts asked to comment on the legal case almost uniformly condemned the government's position. The head of a non-governmental organization dedicated to revitalizing traditional handicrafts pointed out that khadi was meant to be a decentralized project.[5] A major Indian newspaper published an editorial suggesting that the khadi brand rules were so onerous as to threaten a return to License Raj, the derogatory name assigned to the period prior to economic liberalization when the state assumed a more explicitly interventionist role in the economy.[6] And the employee of one of India's oldest

---

[2] Personal conversation, April 2, 2018. Translated from Hindi. "Gandhiji" is an honorific for Gandhi.
[3] It claims ownership under the Khadi Mark Regulations of 2013.
[4] Meha Mathur, "Khadi Spinning Trouble," *India Legal*, http://www.indialegallive.com/constitutional/special-report/khadi-spinning-trouble-20583, accessed March 17, 2017.
[5] Mridula Chari, "Legal Notice to Fabindia Puts Spotlight on 2013 Rule: Firms Selling Khadi Need Official Approval," *Scroll*, https://scroll.in/article/829370/legal-notice-to-fabindia-puts-spotlight-on-2013-rule-firms-selling-khadi-need-official-approval, accessed March 17, 2017.
[6] "Who Owns Khadi Trademark? Why KVIC's Fight with Fabindia Suggests Norms are Quite Stifling," *Finance Express*, http://www.financialexpress.com/opinion/who-owns-khadi-trademark-why-kvics-fight-with-fabindia-suggests-norms-are-quite-stifling/556301/, accessed March 17, 2017.

khadi institutions complained to me that Gandhi would have frowned upon the very notion of a khadi brand.[7]

Implicit in the reaction of these interviewees was the presumption that KVIC had overstepped its bounds, thus threatening to take the khadi economy in a new and undesirable direction. Khadi workers, in particular, worried that KVIC's foray into the world of trademark law and court proceedings would detract from its original mission, whatever that happened to be. And yet from the perspective of KVIC officials, they were just doing what khadi workers had always done: adapt to changes in the economic landscape.

The Khadi Economy in Perspective

This dissertation has traced the development of the khadi economy across the late colonial and early postcolonial periods, showing how a network of institutions long presumed to constitute a traditionalizing zone within the Indian economy instead lay at the heart of processes of modern economy formation. In doing so, it has argued that the history of the khadi economy offers critical insights into some of the major developments in twentieth-century Indian economic life, including the changing spatial relationship between industry and agriculture; the rise of formal organizations and scientific management; the establishment of standardized weights and measures; and the creation of technological development programs.

Just what does the khadi economy tell us about the processes that went into the making of the modern Indian economy between 1915 and 1965? For starters, it shows us that many different parties, including members of the khadi economy, shared a common understanding of how to make an economy—that is, they all recognized the power of standardization,

[7] Personal conversation, May 18, 2017. Translated from Hindi.

bureaucratization, centralization in economic life. Simultaneously, however, it demonstrates that many of the tools taken to be constitutive of the modern economy could be deployed to different ends. In fact, this was where much of the political potential of the khadi economy lay: in material objects and practices modified by khadi workers to meet new ends. Khadi workers modified these instruments to better conform to their economic imagination, which prioritized goals at odds with that of, first, the colonial state and, later, the postcolonial state's planning apparatus. Though they did not always succeed in their mission, khadi workers nevertheless built an enduring economy, one which now derives part of its power from its enmeshment with state agencies.

The Future

What then is the future of the khadi economy? Its continued relevance in post-liberalization-era India suggests that it is not going away anytime soon. In fact, KVIC has become more aggressive in recent years, with its chairperson announcing in the summer of 2018 that the central government would soon be taking "Brand Khadi" to a new level.[8] In fact, it is possible that a new generation of consumers will take an interest in khadi, attracted by its stated commitment to a living wage for workers and sustainable development. Regardless of its path, it is likely that it will continue to participate in the major developments in Indian economic life and thus to serve as one vantage point from which to observe the shifting configurations of the Indian economy.

[8] T. E. Narasimhan, "Reimagining Brand Khadi," *Business Standard* (10 July 2018).

APPENDIX: UNITS OF MEASUREMENT

Crore – Ten million

Gaz – A yard

Gundi – A hank

Hank – A measure of length for yarn, varying with the material. In the imperial system, a hank of cotton yarn is equal to 840 yards and a hank of wool yarn is equal to 560 yards.

Kali – A unit of length for yarn particular to khadi metrology. A kali of cotton yarn is equal to 21 ⅓ yards.

Lakh – One hundred thousand

Lati – A lea

Lea – A unit of length for yarn, varying with the weight of the fibers in the yarn. In the imperial system, a lea of cotton is equal to 120 yards.

Pati – A unit of length for yarn particular to khadi metrology. A pati of cotton yarn is equal to 53 ⅓ yards.

Ratal – A pound

Rupee – Basic unit of Indian currency

Round – A unit of length for yarn derived partly from the circumference of the bobbin around which yarn is wound. In the imperial system, a round of cotton yarn is equal to 1 ½ yards. In the khadi system, it is equal to 1 ⅓ yards.

Tar – A round

Tola – A unit of mass. In the khadi system, there are 40 tolas in 1 pound.

BIBLIOGRAPHY

ARCHIVAL SOURCES

Bihar Khadi Samiti, Muzaffarpur

Bihar Khadi Samiti, *Niyamak Mandal Ki Karya Bari*, 1947-1951

Bihar Khadi Samiti Evam Bihar Khadi Gramodyog Sangh, *Niyamak Mandal Ki Karyavahi Pustika*, 1952-1961

Bihar Khadi Gramodyog Sangh, *Niyamak Mandal Ki Karyavahi Pustika*, 1961-1973

India Office Library and Records, British Museum, London

English-Language Texts

Nanda, Gulzarilal. "Some Aspects of Khadi." Congress Jubilee Brochure, No. 3. Allahabad: All India Congress Committee, 1935. P/T 1194.

Narayan, Lakshmi. "Report of Khadi Work in Bihar, 1926-27." Patna: Central Printing Press, 1927.

Ramanathan, S. with Pattabhi Sitharamyya and N. S. Varadachari. "The Superstition of Khadi: A Discussion." Erode: Kudi Arasu Publishing House, 1931. P/T 196.

Hindi-Language Texts (Vernacular Text Collection)

Bali, Amarnath and Mohanlal. *Bharatiya Arthashastra*. Lahore: Virjanand Press, 1923/24.

Dube, Dayashankar Dube. *Videshi Vinimay*. Lucknow: Ganga Pustakmala, 1926.

Dube, Dayashankar and Bhagwandas Kela. *Hindi mein Arthashastra aur Rajniti Sahitya*. Vrindavan: Bharatiya Granthmala, 1935.

Dube, Dayashankar, Gadadharprasad Ambasth, and Bhagwandas Kela. *Arthashastra Shabdavali*, 4th ed. Allahabad: Bharatiya Granthamala, 1949.

Gandhi, Maganlal. *Charkha Shastra*. Ahmedabad: 1922.

Gandhi, Maganlal and Richard B. Gregg. *Takli Shikshak*. Sabarmati: Charkha Sangh, 1926.

Goyal, Hanuman Prasad. *Vyapar aur Karigari*. Banaras: Bhagwan Pustakalay, 1938/39.

Gramya Arthashastra (Yuktprant ke Highschool aur Intermediate Board ki Highschool Pariksha ke Gramya Arthashastra ke Pathyakram ke Anusar Likhit). Allahabad: National Press, 1940.

Jha, Radhakrishna. *Bharat ki Sampattik Avastha.* Calcutta: Hindi Pustak Agency, 1920.

Kela, Bhagwandas. *Bharatiya Arthashastra*. Lucknow: Ganga Pustakmala Karyalay, 1925.

Pathak, Ganeshdatt. *Arthashastra Praveshika, Arthat Arthashastra ke Mul Siddhant*. Allahabad: Indian Press, 1919.

Prasad, Rajendra. *Khadi ka Arthashastra*. Muzaffarpur: Bihar Charkha Sangh, 1928.

Raghuvir, Bhagwatsharan Adholiya, and Pannalal Baldua. *Arthashastra Shabd-Kosh*. Wardha: Govindram Seksariya Arth-Sahitya Prakashan Mandal, 1949.

Sharma, Krishnakumar Sharma. *Arthashastra ke Mul Siddhant aur Unka Bharat mein Prayog*. Kanpur: Kishore Publishing, 1939.

Sharma, Shivlal. *Gramya Sangathan*. Agra: Gramin Granthmala Karyalay, 1935.

"The Song of Charkha." Calcutta: Khadi Pratisthan, 1926.

National Archives of India, New Delhi

Central Board of Revenue

Home Department Judicial Branch

Legislative Department

Private Papers of Rajendra Prasad

Nehru Memorial Museum and Library, New Delhi

All India Khadi Board Papers, 1924-1925

All India Spinners Association Papers, 1925-1948

All India Spinners Association Papers 1940-1952

All India Spinners Association Papers, 1952-1953

J. B. Kripalani Papers

J. C. Kumarappa Papers

Shri Gandhi Ashram, Lucknow

Shri Gandhi Ashram, *Karyavahi Pustika: Prabhandak Samiti*, 1931-1983

Shri Gandhi Ashram, *Karyavahi Pustika: Samanya Sabha*, 1928-1983

PUBLISHED SOURCES

Acharya, Anil Kumar. *History of Decimalisation Movement in India*. Calcutta: Indian Decimal Society, 1958.

Akhil Bharat Charkha Sangh: Karya Vivaran, July 1942 Se June 1944 Tak. Sevagram: Akhil Bharat Charkha Sangh, 1945.

Akhil Bharat Charkha Sangh: Karya Vivaran, 1 July 1944 Se 30 June 1945 Tak. Sevagram: Akhil Bharat Charkha Sangh, 1946.

Akhil Bharat Charkha Sangh: Marg-Suchika. Wardha: Akhil Bharat Charkha Sangh, 1942.

Akhil Bharat Charkha Sangh: Varshik Vivaran, 1940. Wardha: Akhil Bharat Charkha Sangh, 1941.

Akhil Bharat Charkha Sangh: Varshik Vivaran, 1941-42. Wardha: Akhil Bharat Charkha Sangh, 1942.

Akhil Bharat Charkha Sangh Ka Sarv-Seva-Sangh Mein Vilinikaran. Sevagram: Akhil Bharat Sarv-Seva-Sangh, 1953.

Akhil Bharat Khadi Aur Gramodyog Mandal (Vyapar Aur Udyog Mantralay): Varshik Vivaran, 1953-54. Bombay: Akhil Bharat Khadi Aur Gramodyog Mandal, 1954.

All India Khadi Board Directory. Sabarmati: The All-India Khadi Bureau, 1925.

All India Khadi Board Khadi Bulletins. Sabarmati: Khadi Information Bureau, 1923.

All India Khadi and Village Industries Board (Ministry of Commerce and Industry): Annual Report, 1954-54. Bombay: Khadi and Village Industries Commission, 1955.

Ambar Charkha-Parikshan Yojna. Ahmedabad: Ambar Charkha Samiti Prakashan, 1956.

Ambar Parikshan-Parishramalay. Ahmedabad: Ambar Charkha Samiti Prakashan, 1956.

Anand, Mulk Raj. *Homage to Jamnalal Bajaj: A Pictorial Biography*. Ahmedabad: Allied Publishers Private Limited, 1988.

Annual Report, 1926-27. Ahmedabad: The All-India Spinners' Association, 1927.

Annual Report, 1927-28. Ahmedabad: The All India Spinners' Association, 1928.

Balwant, Kunder. *Takli*. Trans. Aryanayakam. 3rd ed. Sevagram: Hindustani Talimi Sangh, 1955

[1940].

Bharatananda. *Dhanush Takli*. Sevagram: Hindustani Talimi Sangh, 1943.

Bhave, Vinoba. *Mul-Udyog: Katna [Shikshakon Ke Liye Pathyakram Ka Spashtikaran]*. Sevagram: Hindustani Talimi Sangh, 1938.

Buchanan, Francis. *The History, Antiquities, Topography, and Statistics of Eastern India: Comprising the Districts of Behar, Shahabad, Bhagalpoor, Goruckpoor, Dinajpoor, Purniya, Rungpoor, and Assam, in relation to their geology, mineralogy, botany, agriculture, commerce, manufactures, fine arts, population, religion, education, statistics, etc.* Edited by R. Montgomery Martin. London: Wm. H. Allen, 1838.

Building from Below. Bombay: All India Khadi and Village Industries Board, 1955.

Carnegie, Andrew. *The Gospel of Wealth*. London: F. C. Hagen & Co., 1889.

Charkha Sangh Ka Karyakram. Sevagram: Akhil Bharat Charkha Sangh, 1949.

Charkha Sangh Ka Navsanskaran: Prarambhik Charcha. Sevagram: Akhil Bharat Charkha Sangh, 1945.

Charkha Sangh Khadi Shiksha Samiti: Abhyaskram Tatha Niyamavali. Sevagram: Akhil Bharat Charkha Sangh, 1950.

Charkha Sangh Khadi Shiksha Samiti: Karya Vivaran. Sevagram: Akhil Bharat Charkha Sangh

Das Gupta, Satis Chandra. *Bans Ka Charkha (Mul Bangla Se Anudit)*. Calcutta: Khadi Pratisthan, 1950.

---. *Khadi Manual*. Vol. 1. Calcutta: Khadi Prathistan, 1924.

Dastane, Dattoba. *Bunai: Saranjam, Kriyaen Aur Ganit*. Kashi: Akhil Bharat Sarv-Seva-Sangh Prakashan, 1962 [1948].

---. *Nai Tunai*. Sevagram: Khadi Vidyalay, 1944.

Deodhar, K. G. *Ambar Charkha (Haath Pustika*). Ahmedabad: Ambar Charkha Kachhari, 1955.

---. *Ambar Charkha Katai*. Nasik: Khadi Gramodyog Ayog Ambar Shiksha Vibhag, 1957.

---. *Ambar Charkha Kyon?* Nasik: Khadi Gramodyog Ayog Ambar Shiksha Vibhag, 1957.

---. *Ambar Charkha Lagat Kimat*. Nasik: Khadi Gramodyog Ayog Ambar Shiksha Vibhag, 1957.

---. *Ambar Charkha Yantra*. Nasik: Khadi Gramodyog Ayog Ambar Shiksha Vibhag, 1957.

---. *Dhanush Takua*. Sevagram: Khadi Vidyalay, 1944.

---. *Khara Charkha: Savali, Bihar, Bardoli Aur Andhra*. Sevagram: Akhil Bharat Charkha Sangh, 1947.

---. *Saranjam-Parichay*. Trans. Ramnaresh Singh. Madhubani: Akhil Bharat Charkha Sangh, Bihar, 1945 [1941].

---*Sulabh Puni*. Sevagram: Akhil Bharat Charkha Sangh, 1946.

Dhaddha, Siddraj. *Charkha Banam Mill*. Jaipur: Rajasthan Sarvoday Sahitya Samit, 1953.

---. *Kisan Charkha [Peti Charkha Tatha Dubta Charkha Sahit]*. 2nd ed. Sevagram: Akhil Bharat Charkha Sangh, 1948 [1945].

Diwan, Prabhakar. *Katne Ki Kala*. Raipur: 1935.

Gandhi, Krishnadas. *Ankaron Ki Drishti Se Gram Swavalamban Ki Aur*. Sevagram: Akhil Bharat Charkha Sangh, 1948.

---. *Gharelu Katai Ki Aam Gintiyan*. Sevagram: Akhil Bharat Charkha Sangh, 1948 [1946].

---. *Katai Ganit: Gaz Aur Tar, Ya Sut Ki Lambai Ke Nap*. Vol. 1. 4th ed. Kashi: Akhil Bharat Sarv-Seva-Sangh-Prakashan 1957 [1940].

---. *Katai Ganit: Sut Ka Ank*. Vol. 2. 3rd ed. Maganwadi: Akhil Bharat Sarv Seva Sangh, 1954.

---. *Katai Ganit: Sut Ka Vyas*. Vol. 3. 2nd ed. Kashi: Akhil Bharat Sarv-Seva-Sangh-Prakashan, 1957 [1949].

---. *Katai Mandal: Niti Niyami*. Sevagram: Akhil Bharat Charkha Sangh, 1949.

Gandhi, Mohandas Karamchand. *An Autobiography: Or the Story of My Experiments with Truth*. Trans. Mahadev Desai. Ahmedabad: Navajivan Publishing House, 1927.

---. "Cooperation." *Young India*, Nov. 3, 1921. CWMG Vol. 21, 391.

---. "Decimal Coinage and its Cost." *Harijan* 10.7 (March 24, 1946), 53-4.

---. "Fiery Ordeal." *Harijan Sevak*, Feb. 22, 1942. CWMG Vol. 75, 323.

---. "Khadi in the Legislatures." *Young India*, 28 March 1929. CWMG Vol. 45, 280-1.

---. "Letter to Maganlal Gandhi," June 1, 1919. *CWMG* Vol. 14, 340.

---. "A Mill-Owner on Boycott." *Young India*, April 5, 1928. CWMG Vol. 36, 188-90.

---. "More of Mill-Owners' Greed." *Young India*, May 10, 1928. CWMG Vol. 36, 302.

---. *Rachnatmak Karyakram: Uska Rahasya Aur Sthan*. Trans. Kashinath Trivedi. 6th ed. Ahmedabad: Navjivan Prakashan Mandir, 1959 [1946].

---. *Swaraj Through Charkha*. Ed., Kanu Gandhi. Sevagram: All-India Spinners' Association, 1945 or 1946.

"Gandhi-Nehru Dialogue." In *"Hind Swaraj" and Other Writings*, edited by Anthony J. Parel, 143-9. Centenary ed. Cambridge: Cambridge University Press, 2016.

Gandhi, Prabhudas. *Khadi Dwara Gram-Vikas: Khadi Aur Gramodyog Dwara Gram-Vikas Tatha Janhit Ke Liye Mill Ki Tulna Mein Khadi Ki Shakti Ka Ek Adhyayan*. New Delhi: Sasta Sahitya Mandal Prashan, 1954.

Gaon-Gaon Mein Ambar Charkha. Bombay: Akhil Bharat Khadi Aur Gramodyog Mandal, 1957.

Gover, Charles E. *An Uniform Metrology for India*. Madras: Asylum Press, 1867.

Gregg, Richard B. *Economics of Khaddar*. Revised 2nd ed. Ahmedabad: Navajivan Publishing House, 1946.

Gupta, Ram Gopal. *Khaddar*. Lucknow: 1941.

Harkare, Dwarkanath. *Khadi-Udyog-Kidhar?* Bombay: 1948.

Higginbottom, Sam. *Sam Higginbottom, Farmer: An Autobiography*. New York: Charles Scribner's Sons, 1949.

Hisab Pranali Tatha Vyavastha Sambandhi Hidyatein. Meerut: Shri Gandhi Ashram, 1940.

Jaju, Krishnadas. *Charkhe Ki Tatvik Mimansa: Gandhji Ke Kuch Lekhon Va Bhashanon*. Sevagram: Akhil Bharat Charkha Sangh, 1949.

Jaju, Shrikrishnadas and A. V. Sahastrabuddhe. *Akhil Bharat Charkha Sangh Ka Itihas: Uday Se Vilay Tak*. Kashi: Akhil Bharat Sarv-Seva-Sangh-Prakashan, 1962 [1950].

Kalelkar, Kaka, ed. *To a Gandhian Capitalist: Correspondence Between Mahatma Gandhi and Jamnalal Bajaj and Members of His Family*. Bombay: Hind Kitabs Ltd., 1951.

Kapsa Ki Samasya: Khadi Ki Drishti Se. Sevagram: Akhil Bharat Charkha Sangh, 1950.

Karya Vivaran: 1 July 1945 Se 30 June 1946 Tak. Sevagram: Akhil Bharat Charkha Sangh, 1946.

Karya Vivaran: 1 July 1946 Se 30 June 1947 Tak. Sevagram: Akhil Bharat Charkha Sangh, 1948.

Karya Vivaran: 1 July 1947 Se 30 June 1948 Tak. Sevagram: Akhil Bharat Charkha Sangh, 1949.

Karya Vivaran: 1 July 1948 Se 30 June 1949. Sevagram: Akhil Bharat Charkha Sangh, 1950.

Katai Mandal: Sarv Prantiya Pratinidhik Sabha Ka Vivaran Sevapuri (Banaras), Tarikh 12-13 November 1949. Sevagram: Akhil Bharat Charkha Sangh, 1949.

"Khaddar Work in India." Bombay: All-India Congress Khaddar Department, 1922.

Khadi Guide, 1927. Ahmedabad: The All India Spinners' Association, 1927.

Khadi Guide, 1929. Ahmedabad: The All India Spinners' Association, 1929.

Khadi Guide, 1931. Ahmedabad: The All India Spinners' Association, 1931.

Khadi Ke Asli Maksid Ki Aur: Sevagram Mein Sangh Ke Karyakartaon Ka Pratham Shivir. Sevagram: Akhil Bharat Charkha Sangh, 1949.

Khadi-Kendra-Suchi (Dwitiya Sanskaran): 1 November 1950 Se 28 February 1951 Tak Ke Liye Adhikrit. Sevagram: Akhil Bharat Charkha Sangh, 1950.

Khadi-Kendra-Suchi (Panchwan Sanskaran): 1 July 1952 Se 30 June 1953 Tak Ke Liye Adhikrit. Sevagram: Akhil Bharat Charkha Sangh, 1952.

Khadi-Kendra-Suchi (Satwan Sanskaran): 30 September 1954. Wardha: Akhil Bharat Sarv Seva Sangh, 1954.

Khadi-Kendra-Suchi (Tisara Sanskaran): 1 March 1951 Se 30 June 1952 Tak Ke Liye Adhikrit. Sevagram: Akhil Bharat Charkha Sangh, 1951.

Khadi and Village Industries Commission Act, 1956 (No. 61 of 1956): An Act to Provide for the Establishment of a Commission for the Development of Khadi and Village Industries and for Matters Concerned Therein. Bombay: Khadi and Village Industries Commission, 1957.

Kripalani, J. B. *Politics of Charkha*. Bombay: Vora & Co., 1946.

Lele, Dwarkanath. *Ambar Charkha: Ek Drishti*. Bombay: Akhil Bharat Khadi Aur Gramodyog Mandal, 1957.

---. *Ambar Prashnottari*. Bombay: Khadi Aur Gramodyog Commission, 1958.

---. *Khadi Mein Naye Nap-Taul*. Bombay: Khadi Aur Gramodyog Commission, 1961.

---. *Khadi Udyog Mein Metric Nap-Taul*. Bombay: Khadi Gramodyog Commission Vastrodyog Granthmala, 1964.

Magan Charkha. Ahmedabad: Akhil Bharat Charkha Sangh, 1940.

Majumdar, Dhirendra. *Bapu Ki Khadi*. Sevagram: Akhil Bharat Charkha Sangh, 1950.

---. *Jamane Ki Mang*. Sevagram: Akhil Bharat Charkha Sangh, 1948.

---. *Krantikari Charkha*. Banaras: Akhil Bharatiya Charkha Sangh Shakha Sanyuktprant, 1946.

Majumdar, Dhirendra and Krishnadas Gandhi. *Charkha Andolan Ki Drishti Aur Yojna (82nd Charkha Jayanti Prakashan)*. Sevagram: Akhil Bharat Charkha Sangh, 1950.

Marg-Suchika. Sevagram: Akhil Bharat Charkha Sangh, 1948 [1942].

Mashruwala, K. G. “The So-Called Decimal Coinage.” *Harijan* 10.14 (May 12, 1946), 126.

Mukherjee, Radhakamal. *The Foundations of Indian Economics*. London: Longmans Green, 1916.

Nanda, Gulzarilal. *Khadi Ka Arthashastra*. Bombay: Akhil Bharat Khadi Aur Gramodyog Mandal, 1959.

Naoroji, Dadabhai. *Poverty and Un-British Rule in India*. Reprint. Government of India Publications, 1962 [1901].

Prakasam, K. P. S. V. *Hand-Spinning*. Virudhunagar: Sadhanandha Press, 1950.

Puntambekar, S. V. and N. S. Varadachari. *Hand-Spinning and Hand-Weaving: An Essay*. Ahmedabad: All India Spinners Association, 1926.

Purushottam, Mathuradas. *Madhyam Pinjan*. 2nd ed. Sevagram: Akhil Bharat Charkha Sangh, 1949 [1938].

Ray, Prafulla Chandra. *Autobiography of a Bengali Chemist*. Calcutta: Orient Book Company.

Sahu, Dhwajaprasad. *Nya Mor: Kya? Kyon? Kaise*. 1961.

Salana Report, 1925-26. Ahmedabad: Akhil Bharatvarshiya Charkha Sangh, 1926.

Sale of Khadi Hundis, 1954-55. Bombay: All India Khadi & Village Industries Board (Ministry of Commerce and Industry), 1955.

Samagra Gramseva Vidyalay, Sevagram: Pathyakram Tatha Niyamavali. Sevagram: Akhil Bharat Charkha Sangh, 1945.

Santoshwar, Vitthal Ambadas. *Bunai Ganit (Adhikrit Pathya Pustak)*. Bombay: Khadi Aur Gramodyog Commission, 1959.

Satyan. *Kapas: Pujya Vinoba Ji Ki Prastavna Ke Sath*. Kashi: Sarvoday Sahitya Sangh, 1951.

---. *Katai Shastra: Kala Aur Vigyan*. Kashi: Sarvoday Sahitya Sangh, 1952.

---. *Otna, Tunna, V Dhunna*. 3rd ed. Sevagram: Hindustani Talimi Sangh, 1940.

---. *Takli Kaisi Katen?* 2nd ed. Wardha: Gram Seva Mandal, 1939 [1935].

---. *Tant Banana*. Sevagram: Hindustani Talimi Sangh, 1946.

Sevak. *Ambar Charkha*. Bombay, 1956.

Shri Gandhi Ashram-Charkha Sangh (Hind, Mahakaushal Tatha Dilli Prant): Ashram-Vidhan. Meerut, 1934.

Singh, Rajendra. *Gramon Ki Aarthik Punaruddhar*. Prayag: Hindi Sahitya Sammelan, 1939.

Sitaramayya, Pattabhi. *I Too Have Spun: Being a Collection of Notes on Spinning*. Bombay:

Hind Kitabs Limited, 1946.

---. *On Khaddar*. Madras: G. A. Natesan & Co., 1931.

The Story of a Silent Economic Revolution. Bombay: Khadi and Village Industries Commission, 1958.

Tarunbhai. *Ambar Charkha*. 3rd ed. Varanasi: Sarvoday-Sahitya-Prakashan, 1958.

Tisara Saranjam Sammelan, Sevapuri-Banaras: Tarikh 15 se 17, November 1949. Sevagram: Akhil Bharat Charkha Sangh, 1950.

Varma, Ramchet. *Ek Sahara: Natak*. Kashi: Akhil Bharat Sarv-Seva-Sangh-Prakashan, 1960.

Vijayadev. *Ambar Charkha: The Silent Revolutionary*. Bombay: United Asia Publications, 1957.

---. *The Silent Revolution*. Bombay: 1959.

Vishesh Karyakarta ka Sammelan: Hyderabad Dakshin, Ta. 3 Se 5 April, 1951. Sevagram: Akhil Bharat Charkha Sangh, 1951.

SECONDARY SOURCES

Alder, Ken. "A Revolution to Measure: The Political Economy of the Metric System in France." In *The Values of Precision*, edited by M. Norton Wise, 39-71. Princeton: Princeton University Press, 1995.

Amin, Shahid. *Sugarcane and Sugar in Gorakhpur: An Inquiry into Peasant Production for Capitalist Enterprise in Colonial India*. Delhi: Oxford University Press, 1984.

Arunachalam, K. *Khadi Economics: A Few Aspects*. Madurai: Koodal Publishers, 1974.

Bagchi, Amiya Kumar. "Deindustrialization in India in the Nineteenth Century: Some Theoretical Implications." *Journal of Development Studies* 22, no. 1 (1978): 135-64.

Bassett, Ross. *The Technological Indian*. Cambridge: Harvard University Press, 2016.

Bayly, C. A. "The Origins of Swadeshi (Home Industry): Cloth and Indian Society, 1700-1930." In *The Social Life of Things: Commodities in Cultural Perspective*, edited by Arjun Appadurai, 285-321. Cambridge: Cambridge University Press, 1986).

Bean, Susan. "Gandhi and *Khadi*: The Fabric of Indian Nationalism." In *Cloth in Human Experience*, edited by Annette Weiner and Jane Schneider, 356-365. Washington, DC: Smithsonian Institution Press, 1989.

Berle, Adolf A. and Gardiner C. Means. *Modern Corporation and Private Property*. New York: Harcourt, Brace, and World, 1967.

Birla, Ritu. *Stages of Capital: Law, Culture, and Market Governance in Late Colonial India*. Durham: Durham University Press, 2009.

Bose, Sugata. *Agrarian Bengal: Economy, Social Structure and Politics, 1919-1947*. Cambridge: Cambridge University Press, 1986.

---. *Peasant Labour and Colonial Capital: Rural Bengal Since 1770*. Cambridge: Cambridge University Press, 1993.

Bowker, Geoffrey C. and Susan Leigh Star. *Sorting Things Out: Classification and Its Consequences*. Cambridge, MA: The MIT Press, 2000.

Breman, Jan. "The Village in Focus." In *The Village in Asia Revisited*, edited by Breman, Peter Kloos, and Ashwani Saith, 15-75. Delhi: Oxford University Press, 1997.

Brown, Rebecca M. *Gandhi's Spinning Wheel and the Making of India*. London: Routledge, 2010.

---. "Spinning without Touching the Wheel: Anticolonialism, Indian Nationalism, and the Deployment of Symbol." *Comparative Studies of South Asia, Africa and the Middle East* 29, no. 2 (2009): 230-45.

Chakrabarty, Bidyut. "Universal Benefit: Gandhi's Doctrine of Trusteeship: A Review Article." *Modern Asian Studies* 49, no. 2 (March 2015): 572-608.

Chakrabarty, Dipesh. "Khadi and the Political Man." In *Habitations of Modernity: Essays in the Wake of Subaltern Studies*. Chicago: University of Chicago Press, 2002.

Chandavarkar, Rajnarayan. *The Origins of Industrial Capitalism: Business Strategies and the Working Classes in Bombay, 1900-1940*. Cambridge: Cambridge University Press, 1994.

Chandler, Alfred D. *The Visible Hand: The Managerial Revolution in American Business*. Cambridge: Belknap Press, 1977.

Chandra, Bipan. *The Rise and Growth of Economic Nationalism in India: Economic Polices of Indian National Leadership, 1880-1905*. New Delhi: People's Publishing House, 1966.

Chatterjee, Partha. *Nationalist Thought and the Colonial World: A Derivative Discourse*. London: Zed Books, 1993.

Chibber, Vivek. *Locked in Place: State-Building and Late Industrialization in India*. Princeton: Princeton University Press, 2003.

Cohn, Bernard S. Cohn. *Colonialism and Its Forms of Knowledge*. Princeton: Princeton University Press, 1996.

Crease, Robert P. *World in the Balance: The Historic Quest for an Absolute System of Measurement*. New York: W. W. Norton & Company, 2011.

Dasgupta, Ajit K., *A History of Indian Economic Thought*. London: Routledge, 1993.

Datta, Bhabatosh. *Indian Economic Thought: Twentieth Century Perspectives, 1900-1950*. New Delhi: Tata McGraw-Hill Publishing Company Ltd., 1978.

Devji, Faisal. "Gender and the Politics of Space: The Movement for Women's Reform in Muslim India, 1857-1900." *South Asia* 14, no. 1 (1991): 141-53.

DiSalvo, Charles R. *M. K. Gandhi, Attorney at Law: The Man Before the Mahatma*. Berkeley: University of California Press, 2013.

Douglas, Mary. *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*. New York: Praeger, 1966.

Dutta, Arindam. *The Bureaucracy of Beauty: Design in the Age of its Global Reproducibility*. New York: Routledge, 2007.

Forbes, Geraldine. *Women in Modern India*. Cambridge: Cambridge University Press, 1996.

Fox, Richard G. *Gandhian Utopia: Experiments with Culture*. Boston: Beacon Press, 1989.

Frankel, Francine R. *India's Political Economy 1947-2004: The Gradual Revolution*. 2nd ed. New Delhi: Oxford University Press, 2005.

Gallagher, John, Gordon Johnson, and Anil Seal, eds. *Locality, Province, and Nation: Essays on Indian Politics 1870 to 1940*. Cambridge: Cambridge University Press, 1973.

Ghosal, Hari Ranjan. *Economic Transition in the Bengal Presidency (1793-1833)*. Patna: Patna University, 1950.

Gooptu, Nandini. *The Politics of the Urban Poor in Early Twentieth-Century India*. Cambridge: Cambridge University Press, 2001.

Goswami, Manu. "Imaginary Futures and Colonial Internationalisms." *American Historical Review* (Dec. 2012): 1461-85.

---. *Producing India: From Colonial Economy to National Space*. Chicago: University of Chicago Press, 2004.

Grossman, Jonathan H. "Standardization (Standardisation)." *Critical Inquiry* 44 (Spring 2018): 447-78.

Guha, Ramachandra. *India After Gandhi: The History of the World's Largest Democracy*. New York: HarperCollins Publishers, 2007.

Guha, Ranajit. *Elementary Aspects of Peasant Insurgency*. New Delhi: Oxford University Press, 1983.

Guha, Ranajit and Gayatri Chakravorty Spivak, eds. *Selected Subaltern Studies*. New York: Oxford University Press, 1988.

Guha, Sumit. "The Handloom Industry of Central India: 1825-1950." In *Cloth and Commerce: Textiles in Colonial India*, edited by Tirthankar Roy, 218-41. Walnut Creek: AltaMira, 1996.

Guyer, Jane. "Composites, Fictions and Risk: Toward an Ethnography of Price." In *Market and Society: The Great Transformation Today*, edited by Chris Hann and Keith Hart, 203-20. Cambridge; Cambridge University Press, 2009.

Habib, Irfan. "Colonization of the Indian Economy, 1757-1900." *Social Scientist* 8, no. 3 (1975): 23-53.

Hardgrove, Anne. *Community and Public Culture: The Marwaris in Calcutta, 1897-1997*. New York: Columbia University Press, 2007.

Hardiman, David. *Gandhi in His Time and Ours: The Global Legacy of His Ideas*. New York: Columbia University Press, 2004.

Harnetty, Peter. "Deindustrialization' Revisited: The Handloom Weavers of the Central Provinces of India, c. 1800-1947." *Modern Asian Studies* 25, no. 3 (1991): 455-510.

Haynes, Douglas. *Small Town Capitalism in Western India: Artisans, Merchants, and the Making of the Informal Economy, 1870-1960*. Cambridge: Cambridge University Press, 2012.

Hofmeyr, Isabel. *Gandhi's Printing Press: Experiments in Slow Reading*. Cambridge: Harvard University Press, 2013.

Hunt, James D. "Experiments in Forming a Community of Service: The Evolution of Gandhi's First Ashrams, Phoenix and Tolstoy Farm." In *World Problems and Human Responsibility: Gandhian Perspectives*, edited by K. L. Seshagiri Rao and Henry O. Thompson, 177-203. Barrytown, NY: Unifications Theological Seminary, 1988.

Immerwahr, Daniel. *Thinking Small: The United States and the Lure of Community Development*. Cambridge: Harvard University Press, 2015.

Joshi, Chitra. *Lost Worlds: Indian Labour and its Forgotten Histories*. London: Anthem Press, 2004.

Kantor, Hayden S. "'A Dead Letter of the Statute Book': The Strange Bureaucratic Life of the Bihar Food Economy and Guest Control Order, 1950-1954." *South Asian History and Culture* (2016): 239-57.

Koshal, Rajinder K. and Manulika Koshal. "Gandhian Economic Philosophy." *American Journal of Economics and Sociology* 32, no. 2 (April 1973): 191-209

Kula, Witold. *Measures and Men*. Trans. R. Szreter. Princeton: Princeton University Press, 1986.

Kumar, Nita. *The Artisans of Banaras: Popular Culture and Identity, 1880-1986*. Princeton: Princeton University Press, 1988.

Latour, Bruno. "Where are the Missing Masses? The Sociology of a Few Mundane Artifacts." In *Shaping Technology/Building Society: Studies in Sociotechnical Change*, edited by W. Byker and John Law, 225-58. Cambridge: MIT Press, 1992.

Leadbeater, S. R. B. *The Politics of Textiles: The Indian Cotton-Mill Industry and the Legacy of Swadeshi, 1900-1985*. New Delhi: Sage Publications, 1993.

Lenin, Vladimir Ilyich. *The Development of Capitalism in Russia: The Process of the Formation of a Home Market for Large-Scale Industry*. Moscow: Foreign Languages Publishing House, 1956.

Levy, Jonathan. *Freaks of Fortune: The Emerging World of Capitalism and Risk in America*. Cambridge: Harvard University Press, 2012.

Lewis, W. Arthur Lewis. "Economic Development with Unlimited Supply of Labor." *The Manchester School* 22, no. 2 (May 1954): 139-91.

Ludden, David. *An Agrarian History of South Asia*. Cambridge: Cambridge University Press, 1999.

MacKenzie, Donald. *Material Markets: How Economic Agents are Constructed*. Oxford: Oxford University Press, 2009.

Markovits, Claude. *Indian Business and Nationalist Politics, 1931-39: The Indigenous Capitalist Class and the Rise of the Congress Party*. Cambridge: Cambridge University Press, 1985.

---. *The UnGandhian Gandhi: The Life and Afterlife of the Mahatma*. London: Anthem Press, 2004.

Martin, Maria. "*Hundi/Hawala*: The Problem of Definition." *Modern Asian Studies* 43, no. 4 (2008): 909-37.

Maskiell, Michelle. "Embroidering the Past: Phulkari Textiles and Gendered Work as 'Tradition'

and ‘Heritage’ in Colonial and Contemporary Punjab.” *The Journal of Asian Studies* 58, no. 2 (May 1999): 361-88.

McGowan, Abigail. *Crafting the Nation in Colonial India*. New York: Palgrave MacMillan, 2009.

Mehta, Deepak. “A Sociological Study of Gandhian Institutions: Work, Weavers and the Khadi and Village Industries Commission.” PhD diss., Delhi University, 1991.

Minault, Gail. *Secluded Scholars: Women’s Education and Muslim Social Reform in Colonial India*. Delhi: Oxford University Press, 1998.

Nanda, B. R. *In Gandhi’s Footsteps: The Life and Times of Jamnalal Bajaj*. Delhi: Oxford University Press, 1990.

Narasimhan, T. E. “Reimagining Brand Khadi.” *Business Standard*.10 July 2018.

Narayan, Shriman. *Jamnalal Bajaj: Gandhiji’s ‘Fifth Son’*. New Delhi: Publications Division, Ministry of Information and Broadcasting, 1974.

Orsini, Francesca. *The Hindi Public Sphere, 1920-1940: Language and Literature in the Age of Nationalism*. New Delhi: Oxford University Press, 2002.

Pandey, Gyanendra. *The Construction of Communalism in Colonial North India*. Delhi: Oxford University Press, 1990.

Parekh, Bhikhu. “Nehru and the National Philosophy of India.” *Economic and Political Weekly* (Jan. 5-12, 1991): 35-48.

Parel, Anthony J., ed.” *“Hind Swaraj” and Other Writings*. Centenary ed. Cambridge: Cambridge University Press, 2016.

Parthasarathi, Prasannan. *The Transition to a Colonial Economy: Weavers, Merchants and Kings in South India, 1720-1800*. Cambridge: Cambridge University Press, 2001.

Pinch, Trevor J. and Wiebe E. Bijker. “The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other.” In *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, edited by Bijker, Thomas P. Hughes, and Pinch, 11-44. Cambridge, MA: The MIT Press, 2012.

Polanyi, Karl. “Aristotle Discovers the Economy.” In *Trade and Market in the Early Empires: Economies in History and Theory*, edited by Karl Polanyi, Conrad Maynadier Arensberg, and Harry W. Pearson, 64-94. Glencoe, IL: Free Press, 1957.

---. "The Economy as Instituted Process." In *Trade and Market in the Early Empires: Economies in History and Theory*, edited by Karl Polanyi, Conrad Maynadier Arensberg, and Harry W. Pearson, 243-70. Glencoe, IL: Free Press, 1957.

---. *The Great Transformation: The Political and Economic Origins of Our Time*. Boston: Beacon Press, 2001.

Prakash, Gyan. *Another Reason: Science and the Imagination of Modern India*. Princeton: Princeton University Press, 1999.

---. *Bonded Histories: Genealogies of Labor Servitude in Colonial India*. Cambridge: Cambridge University Press, 1990.

Prasad, C. Shambu. "Exploring Gandhian Science: A Case Study of the Khadi Movement." PhD diss., Indian Institute of Technology, 2001.

Ramagundam, Rahul. *Gandhi's Khadi: A History of Contention and Conciliation*. New Delhi: Orient Blackswan, 2009.

---. "Khadi and Its Agency: Organizing Structures of Philanthropic Commerce." *Social Scientist* 32, no. 5/6 (May-June 2004): 51-68.

Ray, Rajat Kanta. "Asian Capital in the Age of European Dominance: The Rise of the Bazaar, 1800-1914." *Modern Asian Studies* 29, no. 3 (July 1945): 449-554.

---. "Introduction." In *Entrepreneurship and Industry in India, 1800-1947*, edited by Rajat Kanta Ray, 1-69. Oxford: Oxford University Press, 1992.

Roitman, Janet. *Fiscal Disobedience: An Anthropology of Economic Regulation in Central Africa*. Princeton: Princeton University Press, 2005.

Roy, Tirthankar. *Artisans and Industrialization: Indian Weaving in the Twentieth Century*. Delhi: Oxford University Press, 1993.

---. *Rethinking Economic Change in India: Labour and Livelihood*. London: Routledge, 2005.

---. *Traditional Industry in the Economy of Colonial India*. Cambridge: Cambridge University Press, 1999.

Rudolph, Lloyd I. and Susanne Hoeber Rudolph. *Postmodern Gandhi and Other Essays: Gandhi in the World and at Home*. Chicago: The University of Chicago Press, 2006.

Russell, Andrew L. *Open Standards and the Digital Age: History, Ideology, and Networks*. New York: Cambridge University Press, 2014.

---. "Standardization in History: A Review Essay with an Eye to the Future." In

The Standards Edge: Future Generations, edited by Sherrie Bolin, 247-60. Ann Arbor, MI: Sheridan Press, 2005.

Sanyal, Kalyan. *Rethinking Capitalist Development: Primitive Accumulation, Governmentality & Post-Colonial Capitalism*. London: Routledge, 2014 [2007].

Sarkar, Sumit. *The Swadeshi Movement in Bengal, 1903-1908*. New Delhi: People's Publishing House, 1973.

Sartori, Andrew. *Liberalism in Empire: An Alternative History*. Berkeley: University of California Press, 2014.

Schumacher, E. F. *Small is Beautiful: Economics as if People Mattered*. New York: Harper Perennial, 1989 [1973].

Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven: Yale University Press, 1998.

Seal, Anil. *The Emergence of Indian Nationalism: Competition and Collaboration in the Later Nineteenth Century*. London: Cambridge University Press, 1968.

Sen, Samita. *Women and Labour in Late Colonial India: The Bengal Jute Industry*. Cambridge: Cambridge University Press, 1999.

Sen, Sudipta. *Empire of Free Trade: The East India Company and the Making of the Colonial Marketplace*. Philadelphia: University of Pennsylvania Press, 1998.

Sethi, J. D., ed. *Trusteeship: The Gandhian Alternative.* New Delhi: Gandhi Peace Foundation, 1986.

Sherman, Taylor C. "A Gandhian Answer to the Threat of Communism? Sarvodaya and Postcolonial Nationalism in India." *The Indian Economic and Social History Review* 53, no. 2 (2016): 249-70.

---. "From 'Grow More Food' to 'Miss a Meal': Hunger, Development and the Limits of Post-Colonial Nationalism in India, 1947-1957." *South Asia: Journal of South Asian Studies* 36, no. 4 (2013): 571-88.

Siegel, Benjamin. "'Self-Help which Ennobles a Nation': Development, Citizenship, and the Obligations of Eating in India's Austerity Years." *Modern Asian Studies* 50, no. 3 (November 2015), 975-1018.

Sinha, Subir. "Lineages of the Developmentalist State: Transnationality and Village India, 1900-1965." *Comparative Studies in Society and History* 50, no. 1 (2008): 57-90.

Skaria, Ajay. “Gandhi’s Politics: Liberalism and the Question of the Ashram.” *South Atlantic Quarterly* 101, no. 4 (Fall 2002): 955-86.

---. *Unconditional Equality: Gandhi’s Religion of Resistance*. Minneapolis: University of Minneapolis Press, 2016.

Spengler, Joseph J. *Indian Economic Thought: A Preface to Its History*. Durham: Duke University Press, 1971.

Star, Susan Leigh Star and Martha Lampland. “Reckoning with Standards.” In *Standards and Their Stories: How Quantifying, Classifying, and Formalizing Practices Shape Everyday Life*, edited by Lampland and Star, 3-24. Ithaca: Cornell University Press, 2009.

Tarlo, Emma. *Clothing Matters: Dress and Identity in India*. Chicago: University of Chicago Press, 1996.

Thomson, Mark. *Gandhi and His Ashrams*. Bombay: Popular Prakashan, 1993.

Timmermans, Stefan and Steven Epstein. “A World of Standards but not a Standard World: Toward a Sociology of Standards and Standardization.” *Annual Review of Sociology* 36 (2010): 69-89.

Tomlinson, B. R. *The Economy of Modern India, 1860-1970*. Cambridge: Cambridge University Press, 1996.

Trivedi, Lisa. *Clothing Gandhi’s Nation: Homespun and Modern India*. Bloomington: Indiana University Press, 2007.

Vij, Illa. “Satish Chandra Das Gupta.” *The Tribune* (May 13, 2000), http://www.tribuneindia.com/2000/20000513/windows/fact.htm. Accessed May 1, 2017.

Wolpert, Stanley. *Gandhi’s Passion: The Life and Legacy of Mahatma Gandhi.* New York: Oxford University Press, 2002.

Yang, Anand. *Bazaar India: Markets, Society and the Colonial State in Gangetic Bihar*. Berkeley: University of California Press, 1998.

Zachariah, Benjamin. *Developing India: An Intellectual and Social History*. New Delhi: Oxford