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Assisted existence: an ethnography of being in Ecuador

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In Ecuador, reproductive assistance, whether from God, extended family, or medical technologies, is emphasized and desirable in a precarious and unequal world with a minimal social safety net and chronic economic insecurity. Assistance is the very grounds of being. In better-resourced realities like parts of the United States, assisted reproductive technologies can trouble the biological and social autonomy of individual heterosexual couples. Juxtaposing assisted reproduction in these divergent sites demonstrates that resources can make autonomy easier to establish and assistance between people and things difficult to perceive. Through an insistence on the material specificity of assisted reproduction itself, this ethnographic contrast contributes to anthropological approaches to ontological questions of being. In particular, ethnographic observation of the material realities of reproductive treatments in Ecuador demonstrates that medical care is one means to instantiate race. Private assisted reproduction makes whiter babies and patients in the face of a crumbling public health care infrastructure whose patients are by definition poor and Indian. The framework of assistance might serve then as a means to ethnographically trace the constitution of racial being in better-resourced nations, as well as allow for a more comprehensive recognition of the interdependence of existence.

In vitro fertilization (IVF) practitioners from nearly every nation in Central and South America attended the 2003 conference of La Red Latinoamericana de Reproducción Asistida (Latin American Assisted Reproduction Network). One of the keynote speakers was Dr Catherine Racowsky, a well-known embryologist and the laboratory director of the IVF programme at Brigham Women's Hospital in Cambridge, Massachusetts. Racowsky spoke on several panels throughout the conference, always in English with a clipped British accent. Many of the participants, including some of the clinicians and biologists from the IVF clinics in Ecuador where I was conducting research at the time, needed translation during her presentations. Racowsky's performance as a first-world IVF expert was dazzling. She was serious as well as impassioned and intuitive. In describing her specific protocols, she explained how she 'sensed what embryos want'. Her emphasis on precise technique and laboratory quality was pre-eminent, but that did not mean that she imagined all laboratories to be the same. In her discussions about protocols and techniques, she stressed how certain approaches might not work in other laboratories because of different air quality, different temperatures, different incuba-

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tors, and different culture media. While Racowsky acknowledged how different laboratory conditions could arise with different equipment, her expert advice, directed towards practitioners working in Latin America, did not acknowledge how clinics might have difficulties in obtaining and maintaining equipment in the first place.

Racowsky worked in a reality where she could take for granted all the equipment and other infrastructures that assisted her in maintaining such exacting laboratory standards. But from my ethnographic research in Ecuadorian IVF clinics I knew that maintaining precise laboratory standards could be extremely challenging. Customs delays made it difficult to obtain properly handled growth media for culturing embryos or infertility drugs that weren't about to expire. Cycles were disrupted for weeks in Quito when a nearby volcano exploded and contaminated lab air quality because of the lack of air filters. Purchasing new microscopes and incubators was an enormous undertaking in Ecuador because they were so expensive and hard to service or repair. Once I spent an entire day with a laboratory biologist in a clinic in Quito, as we both tried to figure out a problem with her US-supplied micromanipulator microscope. We couldn't call anyone to come service it, and we couldn't call the company's toll-free technical support line to get help. These difficulties affected clinical practice in multiple ways. When pipettes were stuck in customs, clinicians had to halt inseminations for a month. When catheters didn't arrive at all, clinicians improvised with general-purpose syringes. When the lab ran out of certain cultivation media, they had to transfer embryos back into patients on day two instead of day three, considered the more optimal time.

These difficulties in maintaining clinic and laboratory provided Ecuadorian practitioners with daily reminders of just how much assistance assisted reproduction required to make it work. These reminders were nothing out of the ordinary, however, given that in Ecuador, making things and making things happen always required assistance. This included making new people, that is, children, with or without new reproductive technologies. Racowsky worked and lived in Cambridge, Massachusetts, where the assistance required for co-ordinating IVF, or to bear and raise children for that matter, is much easier to ignore. The way things could come together with ease is part and parcel of how things in general, like people and institutions, can seem stable and autonomous. The relative (and I stress relative) stability of infrastructures like schools, health care, roads, and public sanitation in many parts of the United States can produce in middle-class and wealthy people a sense of autonomy about many of their pursuits, including having children. In this terrain, assisted reproduction can feel like an imposition on that autonomy.

I have spent many years as an ethnographer of assisted reproduction – IVF, surrogate motherhood, egg and sperm donation – first, among middle- and upper-class coastal Californians in the early 1990s and then among urban Ecuadorians across classes in the neoliberal early 2000s, before Rafael Correa's attempts to remake social welfare programmes, including public health services (Roberts 1998, 2012*a*). Through ethnographic observation in both sites, I noticed that experiences of assisted reproduction differed between, on the one hand, California and, on the other, Quito and Guayaquil, the two cities where all of Ecuador's nine clinics were located at the time. These differences were partially due to the different role and valuation placed on 'assistance' in these very different material realities.

I never thought much about the 'assist' in assisted reproduction during my California-based research in the early 1990s. Assistance was a problem so obvious I

never thought to analyse it. Assistance to overcome heterosexual childlessness signalled a biological malfunction in how children should naturally come about. IVF equipment such as catheters, synthetic hormones, and microscopes; third parties, such as egg and sperm donors and surrogates; and the efforts of physicians were often seen as artificial, external interventions in 'natural' biogenetic processes of reproduction, which included the heterosexual act of intercourse, and the birth of individual children to nucleated couples. Besides potentially alienating these couples from their natural bodily experiences, reliance on technological assistance entangled them with unwanted people and things, calling their autonomy as a couple into question. For instance, while many couples I encountered made use of gamete donors and surrogate mothers, these other parties potentially threatened a couple's claim to exclusive parenthood. Although I noted their concerns about autonomy and artificiality, at the time I understood them as markers of 'cultural' specificity. I didn't notice how the relative ease of co-ordinating equipment supplies, gamete donors, and money in these private clinics was based on state infrastructures that made good roads, well-connected supply chains, an abundance of educated patients, and a relative sense of stability concerning people and institutions. I didn't give much thought to the material infrastructures that made both IVF and an idealized sense of autonomy possible.

In urban Ecuador, I found that existential anxieties about autonomy or artificiality did not manifest to anywhere near the same degree as they did in California. Most people I encountered in Quito and Guayaquil's clinics, many who travelled there from smaller cities and towns, experienced their existence as fundamentally assisted by other people, God, and other things, all of which contributed to the general embrace of *reproducción asistida* in Ecuador. Assisted reproduction did not interfere with a sacrosanct and separate nature. Heterosexual infertility was a biological problem, but often the bigger problem lay in a breakdown of relations that childlessness could bring to the continuity of an extended family. Assisted reproductive technologies could help solve this breakdown through the assistance of technology, money, and egg donors.

Crucially, reproductive endeavours in urban Ecuador entailed not only making children but also making and reinforcing relations among adults, and between adults and God in an unstable and materially insecure world. My fieldwork took place amidst chronic and sometimes catastrophic inflation shaped by oil boom-and-bust cycles as well as dollarization, the rise and fall of nine presidents in nine years, debt crisis and bank failures, contracting public services, corruption scandals, indigenous uprisings, pernicious racism, and constant strikes by public servants such as teachers, health care workers, and the police (Clark & Becker 2007; Gerlach 2003). In the face of this instability, most people I encountered in Ecuador, no matter how vast their access to material resources, experienced life as existentially precarious and erratic. Existence, then, emphasized not individual autonomy, but the necessity of interdependence and connection. Assistance was the very grounds of being.

This article, therefore, is about the importance of assistance in assisted reproduction in Quito and Guayaquil, with some juxtaposition with what I observed in California for contrast. It is imperative to emphasize, however, that there is nothing essential about these differences. Comparison is fraught because of our tendency to see differences as timeless and fixed, and most problematically as arising separately – as though the historical, economic, colonizing, and environmental processes that shape the reality of Quito have nothing to do with the historical, economic, and environmental processes that shape the reality of urban Delhi, rural Hunan, or suburban Los Angeles. By

juxtaposing assisted reproduction in Ecuador with California, I am not making a typological model of North/South or centre/periphery, to be applied elsewhere. California does not stand in for the 'West' or the 'North'. For instance, in the early 1990s, Californian clinics began the practice of paid egg donation from known donors, uncommon in the rest of the United States. Additionally, the infrastructures and social welfare that made life feel stable to the middle-class patients I spoke with in California were quite different from the infrastructures and social welfare available in Britain or Spain in Western Europe. And these two nations are different from each other as well. The ban of egg sales in Britain has produced a thriving egg market in Spain, where it is legal, catering specifically to UK citizens. The ethnographic record is filled with examples like these of how assisted reproduction is practised specifically within and between nations in relation to their own particular geopolitical and economic histories (Beck, Klotz & Knecht 2012; Bharadwaj 2002; M. Clarke 2009; Franklin & Roberts 2001; Handwerker 1995; Inhorn 2003; Ivry 2009; Nahman 2008; Pashigian 2009; Strathern 2005).

It is also very important to emphasize that the practices involved in assisted reproduction in Ecuador are not uniform either. Assisted reproduction differed in Quito and Guayaquil in relation to these two cities' specific regional, economic, and religious histories. In Quito, which lies in the sierra, a history of agrarian patron-client labor relations produced a more corporate, collective labor system and family structure that also produced more materialistic and personal exchange relations with God. In contrast, in the port city of Guayaquil, economic relations since the nineteenth century have been structured around the sale of individual labour (Clark 2002) and residents tended to have a more doctrinaire relationship with a more individual God. These differences shaped IVF practice, especially in terms of personhood and kinship. For example, *guayaquileño* embryos and eggs were more individuated than *quiteño* embryos and eggs. But in both cities assisted reproductive technologies did not force reconsiderations of nature and kinship as they did when they arrived in California, because nature and kinship in millennial urban Ecuador were not predicated on separation or autonomy. Instead, assisted reproduction reinforced the assistance necessary for living.

My argument throughout this article, then, is materialist, about what resources 'do', applied towards ontological questions of how people come to be. IVF eggs, embryos, and patients are produced differently in California and in Quito and Guayaquil. In the better-resourced reality of California in the early 1990s, sources of supplies and equipment were reliable, making it easy to establish regular routines and protocols. In this context, women's bodies and the gametes produced internally and externally were ministered to under relatively stable regimens of care and far-reaching infrastructures that were easy not to see. Autonomy was easier to establish and assistance was easier to disregard. In other words, resources are 'black boxes' that can make assistance between people and things difficult to perceive. In the less-resourced reality of Quito and Guayaquil, the autonomous existence of anything, be it biological individuals, eggs, or embryos, was very difficult to establish. People and things were very obviously shaped and altered through resources, and, as I shall describe below, so were characteristics like race.

Malleable reality

The mode of assisted existence that I found common in urban Ecuador resonates with the work of feminist theorists, philosophers, historians, sociologists, and anthropologists of

science who have argued for the thoroughgoing material interconnectedness of the world, proposing terms like 'local biologies' (Lock 1993), 'nature/cultures' (Haraway 1991), and 'biosocialities' (Rabinow 1996). These scholars insist that dogs, humans, water pumps, bees, land, scallops, computers, legislatures, tomatoes, micro-organisms, and divinities co-make each other within very material relations (Callon 1989; de Laet & Mol 2000; Haraway 2008; Kosek 2010; Latour 1987; 2010; Moore, Kosek & Pandian 2003; Rabinow 1996). In this vein, the philosopher of medicine Annemarie Mol argues that objects like diseases, bodies, and statistics exist through the enactment of specific practices and other objects that hold them in place – thus a disease is different in a pathology lab with a microscope than in an operating room with a scalpel. What enacts an object makes it. In Mol's words, 'to be is to be related' (Mol 2002: 54).

The enactment of a disease or a fact or a person is carried out through 'co-ordination', the process of bringing together the 'diversity of objects that go by a single name' (Mol 2002: 84). What I found in Ecuador is that this central task of scholars of medicine, science, and technology in well-resourced places, that of noticing all the complicated acts of co-ordination necessary to enact objects or persons or facts (A. Clarke & Fujimura 1992; Mol 2002), is something that people in Ecuador already experience on a daily basis. In Ecuador, bringing together the diversity of objects necessary to make persons, facts, or objects was often difficult. Daily life was made through the contingencies of material relations, compelling recognition of how what's at hand directly shapes what can be made. Facts, people, and objects require assistance to exist, and existence is 'malleable and mutually interactive', dependent on what's available (Fuentes 2010: 604). Thus, characteristics like race that tend to be stabilized in individuals in the United States can shift within people in Ecuador throughout their life-course.

The phrase *nuestra realidad* (our reality), commonly used throughout urban Ecuador, speaks to the particular sets of relational contingencies, connections, and constraints that shape the specificities of life there, which make it difficult to assume a singular and universal reality. *Nuestra realidad* explicitly denotes non-universality. Sometimes it refers to the lack of infrastructure in Ecuador, as in: 'That project won't work in *nuestra realidad*'. Sometimes it refers to a social norm or law, as in: 'No one will follow that regulation in *nuestra realidad*'. I also heard it used more positively to denote the warmth, attachment, and flexibility of people in *nuestra realidad* in contrast to the harsh individuality of people from the United States.

Nuestra realidad manifested in Ecuadorian IVF clinics with regularity. Co-ordinating the elements of assisted reproduction that come together quite smoothly in North America was much more difficult in *nuestra realidad*. IVF doctors arriving home from overseas training often had a difficult time adjusting to the slower pace and the looser schedules for procedures at the clinics, characteristics of practice in resource-poor settings. Nurses who bore the brunt of a doctor's ire would whisper to each other that the doctor had not adjusted to *nuestra realidad*. These same doctors would have to be reminded how difficult and expensive it was to get clinical supplies. When they gave supply orders to clinic administrators, the administrators would chide them: 'Do you think it's Christmas and you can order anything you like here?'

In these clinics, *nuestra realidad* involved materially contingent relations that shaped biological organisms. IVF doctors tailored their drug regimens specifically for the bodies of Ecuadorian women who had often grown up malnourished in '*nuestra realidad*' and in relation to the economic and bureaucratic problems of '*nuestra*

realidad', such as the high cost of imported fertility drugs and the difficulty of bringing them through customs. Sometimes practitioners had to change their protocol to fit the tools at hand. During the month it took for a replacement to arrive for Dr Madera's[1] broken sperm micromanipulator, he had to discontinue introcytoplasmic sperm injection (ICSI), which he used in almost all IVF cycles. This changed how he went about stimulating women's ovaries, yet another circumstance that shaped reality. In a similar vein, patients experienced their bodies as particular, not universal. As I'll describe more below, female IVF patients had heard that fertility hormones caused mood swings in women in other countries, but they attributed their own feelings of emotional tumult to the complexity and messiness of managing their lives during a difficult reproductive project in *nuestra realidad*. Physicians' deviations from standard international protocols, as well as patients' sense of their own bodies as different from other women's bodies, were the result of specific, intertwined biological, economic, and institutional configurations in *nuestra realidad*.

Nuestra realidad parallels insights of the Science and Technology Studies (STS) theorists who carefully attend to the specifics of place and history, demonstrating that technologies that are envisioned to work everywhere sometimes do not because of different material circumstances (Daston 1992; Latour 1987). For example, pharmaceuticals that require refrigeration do not work well in places with intermittent or no electricity (Crandon-Malamud 1991). Objects made in laboratories are not everywhere the same. A frozen embryo in Delhi is not the same as a frozen embryo in London or Quito. They are constituted in material relations that make them differently. What *nuestra realidad* allows for is a reflection on the specificities of how things and people come to be, and in turn how these specificities can make particular kinds of people. In Ecuador, the co-ordination of people and things explicitly makes raced people.

As in other Andean nations, Ecuadorian political elites and social reformers in the nineteenth and twentieth centuries were concerned with what they saw as the rampant 'tribalism' of Indians impeding the progress of a cohesive Ecuador. One solution was to try to make a lighter/whiter nation filled with educated citizens through the process of *mestizaje* (mixture), attempted by encouraging illegitimate offspring between whiter men and darker women (Harris 2008), and making Indians lighter through the cultivating effects of education, medicine, and social welfare (Clark 1998; de la Cadena 2000). While the 'hybrid vigour' of the mythic *mestizo* race has at times been celebrated on its own terms, the project of elites has always been that of *blanqueamiento* (whitening) the nation through mixture. This sense of a racial problem and a project to fix it continued. In a 1972 declaration that racial change within adulthood was possible, the Ecuadorian president General Rodriguez Lara proclaimed: '[T]here is no more Indian problem. We all become white when we accept the goals of national culture' (Stutzman 1981: 45).

Proponents of racist programmes of *mestizaje* were and are 'race optimists' rather than the 'race pessimists' more common in Western Europe and North America, who sought to impede the reproduction of undesirable groups (de la Cadena 2000). Race optimists did not strive to excise whole groups but rather to enfold them into a 'better' race. Racial optimism assumed, and still assumes, the malleability instead of the intractability of race and the ability to effect racial betterment within one generation, even within already living individuals. Malleability is premised on race as a material reality, and on the plasticity of that reality that comes from the contingency of everyday life. Race is cultivated and transformed through material circumstances of dress, language,

education, diet, and occupation. The historical, economic, and political processes built into these attributes mark and make people's bodies and their racial realities (Clark 1998; de la Cadena 2000; Leinaweaver 2008; Orlove 1998; Pitt-Rivers 1973; Smith 1996; Swanson 2010; Wade 1993; Weismantel 2001). I found similar racial malleability at work through the assistance – inputs of time, money, and bodily attention – involved in the medical treatment available in private IVF clinics in Ecuador. Medical care was one means to make raced people, in relation to the historical relationship of medical care to the Ecuadorian national whitening project.

Indians, especially supposedly hyper-fertile indigenous women, were subjects of these whitening interventions of late nineteenth- and early twentieth-century state-funded medicine (Clark 1998; Ewig 2010). Yet after a century of state neglect, producing physically crumbling, poorly supplied medical infrastructure, public health institutions that were developed to whiten poor and indigenous subject populations into national citizens have come to make their patients more Indian, that is, people who do not have the resources to pay for private care. The national whitening project is facilitated through the neglect of public medicine, which compels even people with few material resources towards private medical care. Indeed one of the surprises of my research was how many of the IVF patients I encountered had very few economic resources. Given that state services in the early 2000s were generally devalued and the recourse only of poor, indigenous, or Afro-Ecuadorians, people across class and race went into debt to afford private medical care so they wouldn't be treated 'like Indians'. This racial and racist history is essential for understanding how, in millennial Ecuador, patients were whitened through reproductive assistance in private clinics.

Whiteness is a characteristic of those who participate in private medicine and can avoid the subpar care of state institutions in *nuestra realidad*. It is also a characteristic of women specifically suffering from infertility. Starting in the late nineteenth century, whiter middle- and upper-class women in emerging Latin American nation-states came to be seen as responsible for improving the national racial stock (Zulawski 2007). These programmes reinforced racial distinctions between overly fertile Indian women, on the one hand, who were 'known' to have more rugged constitutions and could birth without assistance in the fields where they laboured, and whiter women, on the other, whose delicate reproductive capacities required both protection and assistance (de la Cadena 2000; Icaza 1968). Throughout the twentieth century, the perceived over-fecundity of poorer and darker women made them subject to the greater reproductive governance of state programmes (Morgan and Roberts 2012), while whiter women's fertility came to be understood as increasingly imperilled. In Ecuador, I found a prevalent 'anticipatory infertility' among middle-class as well as some working-class women. The young, childless, middle-class women I encountered in Ecuador had almost all undergone some sort of surgery (such as diagnostic laparoscopy or fibroid removal) or had intensive hormonal treatments to address female function gone awry. These women were often sure that they could not have children because of strange or troublesome menstrual symptoms. Considering the historical construction of whiter women as possessing a more fragile fertility, I came to see reproductive dysfunction as a means to whiten, through the private assistance and resources reserved for Ecuador's most desired reproducers.

The women and men participating in assisted reproduction in *nuestra realidad* shared in a sense of the material and biological world as malleable, shaped through configurations of people and things, including money and the care it can buy. The

common phrase 'money whitens' (*el dinero blanquea*) is not figurative (Lau 1998). With regard to assisted reproduction, money allowed for participation in IVF, a private practice that served the ongoing national whitening project by making whiter IVF patients and children. Patients took great pleasure in discussing how much it cost to produce their children through assisted reproduction. Their pleasure derived from the way in which, within the thick relations of hierarchy, inequality, and material instability in everyday urban life, their expenditures made them favoured recipients of assistance from powerful patrons: private IVF doctors and God. Patients were not necessarily better off after their treatments – many were in deep financial debt. But they had become more assisted and whiter during their IVF cycles.

Reproductive assistance

Writing in the early 1990s, Marilyn Strathern noted that Euro-American kinship was based on discrete autonomous individual persons – where family, social life, and society are all extrinsic to the person, and a person's interdependence on others '*appears* negotiable' (Strathern 1992: 25, emphasis mine). Thus, assisted reproduction, like all reproduction, produced individual people. Problematically, though, these technologies introduced a 'new contrast between artificial and natural processes – assisted reproduction creates the biological parent as a separate category ... What is new is the assistance given to the social and natural domains' (Strathern 1992: 20). These contrasts did not stop people from using these technologies, of course, but anxieties about the artificial assistance of nature had to be taken into account in making their use acceptable. These concerns could be somewhat diffused through what Charis Thompson, writing about US-based infertility clinics, calls 'ontological choreography', 'the deftly balanced coming together of things that are generally considered parts of different ontological orders (part of nature, part of self, part of society)' (Thompson 2005: 8).

The IVF participants in California I observed also tended to choreograph the process to make it seem less assisted, and fit within a framework of the accepted 'facts' of life, where reproduction is primarily a biological process shared between a man and woman, disconnected from technology, money, or extended kin relations, with the goal of an individual child. A common lament I heard from many married women going through assisted reproduction was that they, and especially their husbands, found their parents', siblings', aunts', and uncles' attentions to their childless state exasperating and meddlesome. These complaints emphasized how an individual couple ideally should make a child. Within surrogacy arrangements, similar practices were at work. The tenacity of the surrogate's body and the technological interventions used throughout a surrogate's pregnancy were a constant reminder of the 'unnatural' assistance the couple required to have a child. In response, surrogates and commissioning couples would sometimes deny that surrogacy was technological at all, and instead 'naturalize' it by explaining that it was common in the past and in 'primitive' cultures perceived as closer to nature. Sometimes participants described specific technological practices like ultrasounds, hormone syncing, and labour induction that furthered connections between commissioning couples and surrogates. These moments of connection, however, did not diffuse the larger problems of technological interference and the addition of outsiders to a couple's reproductive project.

At the same time, concerns about individuality were so central to what persons are that participants sometimes even used the potentially alienating structure of assisted

reproduction to emphasize the individuality of their offspring. One middle-class commissioning mother of a surrogate baby told me:

> From the moment Tara was born, I knew she wasn't part of me genetically. I viewed her as a very individual person. And I try to respect that if she doesn't like carrots – who cares? If she had actually come from me, I would be more, 'We do it this way, and you're one of us'. But, instead, I have to remind myself all the time that Tara may be unlike any of us. I think, as a result of it, she's a more spirited child. And I notice that other surrogate children are as well.

Tara's mother could have made Tara 'part of her', or 'part of us', by focusing on the care she and other family members gave Tara after her birth. This is what many people I met in Ecuador did, in similar situations of adoption, surrogacy, and gamete donation. They used 'blood, genes, and care' to make and reinforce a connection between children and adults (Roberts 2012*a*: 163). Instead, Tara's mother emphasized how genetically, and as a surrogate baby, Tara came into existence more autonomously than children born through the act of heterosexual intercourse.

In contrast, connection, not individuality, infused assisted reproduction in urban Ecuador. When I began research in Quito and Guayaquil, I found that the technological interventions of assisted reproduction did not have to be hidden, and a parent's connection to a child was often made in conjunction with others. Especially in Quito, third parties, like egg donors, were not necessarily threatening or painful additions to the process, as long as they were family members. In an unreliable reality where it was very hard to imagine that any two people could have and raise children alone, it was a matter of course that a multitude of relations between people, objects, and processes had to be harnessed and co-ordinated to produce children. It was not that these relations were easy. In the words of one young woman undergoing IVF amid the ministrations and stifling care of her relations, '*Como sangre duele*' (how blood hurts). Painless relations these were not. But reproduction in general, and IVF conception in particular, was presumed to take place within them, instead of through a modern and transcendent 'agency freed of the press of other people' (Keane 2006: 310).

Practitioners and patients were indeed concerned about their involvement with assisted reproduction. There was the near-crippling pain of infertility to contend with, especially for women, when so much of their existence was supposed to centre on raising children. There was also the substantial financial outlay involved. These concerns were similar to what I found in California. However, in the less predictable reality of Ecuador, especially in Quito, patients tended to be much more anxious than assisted reproduction participants in California that their eggs, sperm, and embryos might get mixed up with strangers'. Gametes were relatives, parts of larger families, one of the only potentially reliable entities around. Losing gametes to strangers constituted family abandonment, anathema to assisted existence (Roberts 2011). IVF participants also grappled with the fact of being Catholic in the face of the Church's condemnation of all forms of assisted reproduction. Their concerns were not as strong as I had anticipated, however. For patients, Church doctrine was much less important than negotiating with God for His assistance in producing children.

In this terrain where persons could not be imagined alone, reproductive assistance emphasized how children should ideally be born before these techniques ever arrived – with abundant assistance that reinforced relations among extended family and, very importantly, with God. IVF participants took an explicit pleasure in what technology brought them in terms of connections with others. Sometimes it seemed that for

patients, their babies born through the assistance of physicians, hormones, surgery, gamete donors, and test tubes existed 'even better' than ones born without the help of these people and things. As I demonstrate in the sections below, relations enacting and co-ordinating hormones, bed rest, and gamete donors supplemented God's contribution to an assisted and whiter existence.

Divine assistance

My time with IVF and surrogacy participants and practitioners in coastal California was for the most part devoid of God. This likely would not have been the case if I had worked elsewhere in the nation or even in California's Central Valley. In the United States, God is very much part of the national discussion about reproductive technologies, especially those that involve embryos. Likewise, as many recent scholars of biotechnology in the United States have found, religiosity infuses the experience of biotechnologies for many patients and their families (Lyerly *et al.* 2008; Rapp 1999; Sharp 2006). However, in northern and southern coastal California, for all of the practitioners and the bulk of patients I encountered, biological processes like reproduction were separate from God's influence. Even when God was part of participants' lives in other realms, and even when they experienced assisted reproduction as 'a miracle', God as a spiritual being was disconnected from this intensive biotechnical process. Assisted reproductive technologies were not God's domain.

When I began work in urban Ecuador, I didn't take God's role very seriously, thinking that the Catholic images of God and the Virgin Mary hanging throughout the clinics in Quito had to be 'for show' to calm patients. Over time, however, I came to realize that God was an integral part of the IVF process for both patients and practitioners. For most doctors and lab biologists and nearly all the IVF patients and families I encountered in Ecuador, relationships with God were hierarchical and paternalistic, rather like the patterns of mutual obligation established with kin, friends, children, doctors, and nurses. God was always present to be called on, never distant, impersonal, or bureaucratic. While religiosity was expressed somewhat differently in each city, within the material realities of biomedical practice in Latin America, the majority of Ecuadorian IVF practitioners I met were insistent on their dependency on God. They proclaimed their laboratories to be God's and repeatedly reminded themselves and others of their need for assistance.

At key moments in the IVF process practitioners touched crucifixes on gamete incubators and called on God to aid their patients. In Dr Padilla's clinic in Quito, Linda, the laboratory biologist, would kiss and caress the incubator as she asked God to fertilize the eggs. She would often say a short prayer, addressing God familiarly: '*Que Diosito quiera que los ovulitos fertilicen*' (May sweet God want the little eggs to fertilize). In another *quiteño* lab, the biologist Dr Escobar would make the sign of the cross before he placed the petri dish with the ovum and sperm in the incubator. With the gametes safely inside, he would pat it, saying, '*Vayan con Dios*' (Go with God). Across town, when Dr Leon finished combining ovum and sperm, she would touch the image of the Virgin Mary hanging over the microscope and make the sign of the cross. As she closed the door to the incubator after placing the petri dish inside, she would touch a crucifix that hung from the incubator in a sterile plastic bag and again make the sign of the cross. Calling for God's interventions diffused Vatican condemnation of assisted reproduction. Prayers to the Virgin and exchanges with God constituted existence through this disciplinary and external ritual of self-oblation, making clear to all present –

patients, practitioners – that the power of life rests in divine hands. The repetitive invocations I witnessed involved a renewal of the awareness of God through practice (see Kirsch 2004; Roberts 2010). During the most fraught moments of an IVF cycle, when the potential for the creation of a new family member hung in the balance, clinicians and patients performed a kind of divine service by reminding themselves and others that they were not responsible for the creation of life. Like the repetitive checking of the temperature gauge on the incubator where the gametes were stored, repetitive invocations of God while caressing a crucifix attached to that incubator were calls for assistance from unseen forces that directly assisted the growth of embryos.

Urban Ecuadorian IVF patients were also vocal about the assistance they received from both technology and God in their pursuit of children. IVF babies were unabashedly technological as well as miraculous. As Hilda, a patient in Quito, explained to me: 'God helps us in this ... All of science is thanks to him. If [patients] don't have children, it's not because they don't deserve it, or they are bad. It's because they had the destiny that God wanted. Without the will of God, there is nothing'. When I asked another patient how many embryos the doctor had implanted, she corrected me, saying: 'No, you mean transfer. Only God decides if they implant'. A woman who had received donated eggs from her sister explained, 'God and science are the same'. As if to illustrate this point, her sister, the donor, vividly recounted the dream she had had the night before the donation: she visualized the (clinically produced) embryos swimming inside her sister's womb, with God guiding them towards implantation. For the majority of Ecuadorian IVF practitioners and nearly all of the patients I met, God manipulated the material world on behalf of family continuity. His actions did not unsettle the laws of nature, as 'all of science is thanks to him'. God's direct interventions in biological processes were real, not unnatural or supernatural, and were consistent with the way people and things need to come together to mould assisted reproduction.

Assisted whiteness

In a nation where female reproductive dysfunction is a mark of whiter women, having the means and the methods to treat it through assisted reproduction also worked to assist whiteness, the most valued form of being in Ecuador. IVF involved a vast array of private techno-medical interventions such as exploratory reproductive surgeries, the authoritative paternalism of physicians, nearly inevitable caesarean sections, and gamete donation, all of which emphasized the privileged status of a woman who could afford this kind of attentive care. My conversations with these women were filled with stories about their fear of public hospitals where they would be 'left alone' and treated 'like Indians and black women', who were assumed to reproduce effortlessly, and without much need for assistance (Roberts 2012*b*). Two other practices, hormonal treatments and bed rest, reinforced the private and expensive nature of the assistance an IVF patient received in becoming reproductive.

During IVF cycles, hormones, such as Lupron, are administered to regulate and stimulate follicle production and enhance uterine receptivity. The Californian patients I interviewed in the 1990s described their hormone regimes as making them feel as if they were on an emotional rollercoaster or as if they were crazy. This was similar to what other social scientists found for infertility hormones in the United States. As one woman explained to Gay Becker in her study of IVF in the United States:

> Lupron is like going into madness. I get on Lupron and I get this agitated depression, really severe. I have never felt so suicidal in my life ... You kind of know on some level it's just the chemicals. I'm not looking forward to it, especially with the agitation on top of it ... So in some ways, the Lupron is just this little shot in your thigh, it seems so benign. But it's not. The depression seems like such a common response to Lupron (Becker 2000: 88).

This woman attributed instability to hormones, as discrete, external and unnatural chemical agents that entered the individual body producing specific effects, including mood swings (Temkin 1977).

Because the effects of these hormones were so central to Californian women's experience of assisted reproduction, I was surprised that most Ecuadorian IVF patients were often not focused on them, except to note how expensive they were. They usually attributed their own feelings of emotional tumult to the complexity and messiness of managing their lives during a difficult reproductive project. Although many patients described experiencing irritability, nerves, and stress during IVF treatment, when I asked them directly whether these feelings were due to the hormones, the usual response was a blank look or something like Roxana's reply as she was underwent IVF for a second time:

> Nothing affected me. Because the doctor told me that it might put me in a bad mood. But to me it wasn't that. I had this feeling that if I was going to get pregnant, that nothing was important. I suffered a little from the injections. That hurt, yes, but moods, no ... With all the things together – school, the house, the husband – there are always problems.

For most IVF patients in Ecuador, the emotional tumult that accompanied the process was attributed not to the biochemical effect of a discrete, external, or unnatural agent on their individual body but from shifting dynamics within families while undergoing the financial, physical, and existential demands of assisted reproduction.

However, when women did experience effects from fertility hormones, they often experienced them positively, as assistance in enhancing their fertility. When Sandra went through IVF (unsuccessfully), she felt wonderful throughout, 'calm and beautiful from the hormones'. Her skin had been soft, her breasts full. Some women even saw the hormones as enhancing their moods, one patient telling me, 'I felt like another person. Better. More active, positive', and another patient explaining, 'My character was more docile and calm, more loving and caring'. For these women, hormones were an (expensive) form of medical assistance that contributed to making their bodies and behaviours more femininely reproductive. This care was one of the many components of the IVF process that produced and enhanced existence. In the context of the race-making abilities of private infertility care, the necessity for expensive hormones marked IVF patients as whiter for needing them, and for their ability to harness that assistance economically.

After an embryo transfer, IVF patients and their families would have to wait two weeks for the pregnancy test. How a patient was cared for during this waiting period mattered. I experienced the importance of this care when Wilson, a young physician, returned to a Quiteño clinic from a year-long advanced medical training in Spain. Before then patients would spend a few hours in bed after their embryo transfer, followed by up to two weeks of bed rest at home until their pregnancy test. Taking his cue from recent North American and European studies showing that bed rest did nothing to augment pregnancy rates, Wilson decreed that women should rest for fifteen

minutes after the transfer and leave the clinic soon after. I observed him on several occasions practically chasing patients from their beds, admonishing them to return to normal life. Nearly all of the patients refused to listen to Wilson and stuck with what he saw as outmoded behaviour. Wilson's 'foreign' determination to get patients up and out upset the women's sense of how they should act and be cared for in these circumstances. 'Did he think this was a public hospital?' While in the recovery room, women would emphasize their fragile state by asking their husbands or female relatives to help them to the bathroom. The nurses, appalled at Wilson's new protocol, snuck bedpans to patients while apologizing for his abruptness.

At most of the other IVF clinics where I worked, post-embryo transfer protocol emphasized assistance. In Dr Padilla's small private gynaecological hospital, IVF patients would lie in the operating room for three hours after a transfer and then spend a night or two at the clinic. The embryologist and patient manager would exhort them throughout their stay to remain in bed at home, taking off work if necessary. 'No physical efforts. Nothing but repose! Repose! Repose! Repose!' The patients who could afford this bed rest were quite receptive to Linda's speeches. Her instructions to rest acknowledged the momentousness of the process, the efforts exerted, and the financial outlay a family had spent trying to make a child. Except for Wilson, patients and practitioners in both private clinics worked to emphasize all the forms of assistance directed towards patients as they undertook the complicated process of *in vitro* fertilization. While many of the tools and objects necessary to carry out IVF were hard to come by, bed rest harnessed what was actually available in Ecuador: assisted reproduction in the form of domestic ministrations and the labour of family and servants who coalesced in a family project encouraging a bedridden woman to become pregnant.

Donor assistance

In Western Europe and North America, capitalist economic relations and kinship have been based on a division of intimate, female, unpaid domestic labour and care separate from the masculine market (Simmel 1990 [1907]; Wilson 2004). These divides currently fuel some of the foremost anxieties about reproductive technologies (Ahuja, Simons & Edwards 1999; Robertson 2006). The possibility that a woman could employ her intimate reproductive potential in the business of egg selling, for instance, collapses idealized separations between kinship and economy (Gimenez 1991; Ragoné 1994; Strathern 1985). It is no surprise, then, that paid egg donation has been banned in many countries and is debated in others (Steinbrook 2006). Although egg sales are allowed in the United States (unlike in Britain and some other Western European nations), the transaction is referred to as donation in order to choreograph the process to avoid the appearance of economic exchange. Most of the egg donation and surrogate exchanges I observed in California were framed as gifting, even when money changed hands – reinforcing the sense that 'if a relation is intimate it cannot and should not involve labor, especially paid labor' (Zelizer 2010: 269; see also Almeling 2011). In California especially, the framework of gifting was facilitated through the practice of having commissioning parents meet egg donors, who they then could gift as well as pay.

Most of the people I encountered involved in gamete donation in California were anxious about gamete donation for a host of reasons. What were the genetic implications of using a stranger's egg or sperm? What did it mean that money changed hands? Or if they were using a family member 'to know' who the donor was and/or to avoid

financial transactions, how would they establish their primary parenthood as a couple? In Ecuador, using donor gametes could also cause anxiety, but differently. Racial mixture was a more explicit concern, and, crucially, using female relatives as donors was a form of assistance that very pointedly involved financial transactions. Especially in Quito, egg donation did not pose a new or uncomfortable formation of kinship and economy. Instead, the practice was used to reinforce mutual economic assistance between kin.

Ecuadorian practitioners co-ordinated both anonymous and known egg donation. In order to delimit the bounds of the heterosexual nuclear family, practitioners in both cities tended to advocate using eggs from a paid anonymous donor rather than from a family member. Additionally, anonymous egg donation assisted in whitening the nation. In general, doctors tried to match egg and sperm donors to the patient as closely as possible. This process involved a variety of factors, including but not restricted to skin colour. Frequently, though, it was hard to find a close match, and then practitioners would pick a donor lighter than the recipient. One biologist explained they were looking for donors from the 'better social class'. When I asked what that meant, she told me that the clinic director didn't want Indians as donors. He wanted to '*mejorar la raza*' (better the race). The egg donors I met were also explicit about how their contribution served to better the race and prevent families from receiving a darker child through adoption.

Anonymous egg donation appeared to have more appeal in Guayaquil, with its history of monetized, individually contracted labour. In Quito, however, patients tended not to share their practitioners' qualms about familial donation. They wanted to avoid exchanges with strangers across familial boundaries, an avoidance clearly saturated with racial anxiety. Several patients in Quito told me that they wouldn't want an anonymous donor since you might get 'Indian' or 'black' eggs. Besides preventing unwanted racial mixture, egg donation between kinswomen was experienced as strengthening existing familial connections through the exchange of material resources. In cases of familial donation, the decision about whom to ask to be a donor involved rules of relatedness reminiscent of the anthropological literature on marriageability (Barth 1954; Goody 1959; Leach 1951). Instead of determining whom one can marry in order to produce legitimate offspring and create alliances between families, the questions were: Who can give eggs? Who will best share in the experience of having a child? And with whom do I want an enhanced relationship?

Egg donations between sisters, between nieces and aunts, and between mothers and daughters not only served to make new children but also provided occasions to reflect on and maintain pathways of inheritance and property transfer. Part of these patients' antipathy to paid anonymous donation was not the fact that money changed hands but the fact that anonymity did not foster continued material alliance between family members. While these transactions were not officially paid for, for female family members, they nearly always involved economic calculation of debts incurred and offset. Several of the women engaged in these transactions were in business together, jointly operating commercial ventures, and described how the donation of eggs from younger to older women paid off their debts for business aid.

In Ecuador, payment, not gifting, was the idiom of egg donation even among family members. When I asked Lucia if she planned to give her sister Ingrid money to compensate her for the time she had missed from work when she donated eggs, Ingrid interrupted and said:

> No. I will recuperate to be the same. Afterward, if God blesses us, you don't have to do anything. Your baby will be the best pay. For everyone. For the whole family that is because for everyone with this uncertainty we need a payment, and the payment will be this [a baby]. We can rest then, everyone complacent and tranquil.

As with many *quiteño* IVF participants, Ingrid's eggs were not given just to Lucia but served as payment for the whole family. When kinswomen and their larger families were involved, clarifying parenthood was seen as a manageable task, not an impossibility. In fact the donor was understood most often as having an enhanced relationship to any child born through her donation, a relationship that did not threaten the parenthood of the egg recipients, who assumed that familial assistance brings children into existence.

Implications of assistance

In urban Ecuador in the early 2000s, private infertility treatment involved care enmeshed in long-standing forms of material stratification and domination that extended from the colonial era to the neoliberal era. Patients were largely engaged in normative projects of forming heterosexual families in a racist and hierarchical terrain. Unstable state institutions, erratic and demeaning social welfare services, and chronic economic insecurity made it difficult to co-ordinate people and things. Doctors, biologists, families, and God mobilized to make patients' bodies fertile by assembling scarce material resources like money, machines, and hormones. Assistance, not autonomy, was the very basis of existence. Through my ethnographic research in these private clinics I began to grasp two desired interrelated aspects of existence in Ecuador: interdependence and whiteness. The cultivation of these two elements helps to explain why, despite the relatively recent arrival of IVF and the Catholic Church's condemnation of the procedure, it has been taken up with less anxiety in Ecuador than in the United States. Practices of assisted reproduction coincided with the ways in which children and relations were already ideally made within a precarious and hierarchical material reality.

Additionally, these observations reshaped my understanding of why practices experienced as auxiliary to individuals in a well-resourced place like California might cause so much existential tension. Noticing all the assistance that goes into co-ordinating and stabilizing people and objects can be difficult in well-resourced locations. It was only by working in Ecuador that I began to make a fuller account of the assistance necessary to make medicine, science, and technology work in general, and the different ontological formations that make different kinds of people in California than in Ecuador. My findings resonate with the work of STS scholars who show how reality is made not through the intrinsic properties of people and things, but through their shifting interrelations. In other words, ontology is not fixed, an insight that has been used to collapse pernicious essentialisms of race, sex, and nature (Fausto-Sterling 2000; Haraway 1991).

My study of assisted reproduction in Ecuador makes a specific contribution to studies of science and technology by foregrounding the political economy of reality, demonstrating (1) that life in less-resourced places might have a lot to teach about how reality is made, and (2) that experiencing reality as made relationally is not necessarily liberatory. With regard to the first point, in places where making people and things is more difficult to co-ordinate, scholarly insight is not necessary to notice the assistance required for existence. Reality is in fact experienced as malleable because the contingency involved in what holds things and people together is palpable. So, while scholars

from the global North have tended to associate corporeal malleability with elite, hybrid, neoliberal subjects who can afford to partake in cutting-edge technological offerings to enhance and modify their bodies (Chen & Moglen 2007; Roberts and Scheper-Hughes 2011; Ticktin 2011), I found in Ecuador that corporeal malleability is part of everyday relational existence across class and race. The everydayness of malleable reality in Ecuador gives us another empirical means to understand that the stabilization of reality is not equally distributed. In a highly stratified nation like the United States that espouses equality, life and self can be experienced as stable for some and not for others.

Secondly, my analysis of biotechnology in the context of racial and corporeal malleability in Ecuador generates cautionary insights for STS scholars who seek to problematize deterministic nature/culture divides in order to undo stratifications of race and sex. As assisted existence in Ecuador illuminates, collapsing determinisms of nature/culture does not necessarily collapse hierarchy, making political economy essential to the study of bodily and bioscientific processes. In other words, fluid and malleable race can be just as pernicious as the 'one drop' rule.[2] Focusing on the relation of resources to being, both in regards to assisted reproduction, and more generally to how people come to exist, can animate comparative questions, like: in different sites, what objects are stable and how did they get that way? What kind of assistance and what kinds of autonomy are wanted by whom and why? What material configurations produce what kinds of people?

Specifically attending to assisted existence allowed me to investigate the specific conditions that bring IVF-produced persons into existence, and the kinds of assistance those persons will receive once born. In California, as in Ecuador, IVF and surrogate babies were made privately and through great expense. But possibly even more than in Ecuador, babies born through assisted reproduction in California were usually going to be born into relative material abundance, distinguishing them from children whose parents could never afford that kind of assistance. What's more, private technological assistance in conjunction with an abundance of state-provided resources made the lives of IVF babies appear more autonomous and less in need of assistance. If this is the case, then might this technology and these resources also contribute to making whiter babies and parents in California, as in Ecuador? Even if assisted reproduction contributed to making race in California, the differences between existence in these two nations are stark. In both Ecuador and California, state infrastructures that benefit elites were unmarked; but these nations' very different political and economic histories made for different kinds of people. In California, it was desirable to assert autonomy, unlike in Ecuador, where no one worried about receiving too much assistance.

NOTES

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[1] All informants' names are pseudonyms.

[2] The 'one drop' rule is a term used in the United States referring to a twentieth-century law in some Southern states that classified any person with 'one drop of Negro blood' as black.

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Existence assistée : ethnographie de l'être en Équateur

Résumé

En Équateur, l'assistance à la procréation, qu'elle vienne de Dieu, de la famille élargie ou de la médecine, est valorisée et souhaitable dans un environnement de précarité et d'inégalités, où la sécurité sociale est réduite au minimum et où l'insécurité économique est chronique. L'assistance est le fondement même de l'être. Dans d'autres réalités mieux loties, par exemple dans certaines parties des États-Unis, l'aide apportée par la technologie à la procréation peut perturber l'autonomie biologique et sociale des couples hétérosexuels. En juxtaposant la procréation assistée dans ces sites différents, l'auteur montre que les ressources peuvent faciliter l'autonomie et rendre l'assistance entre les gens et les choses plus difficile à percevoir. En insistant sur la spécificité matérielle de la procréation assistée proprement dite, cette comparaison ethnographique contribue à l'étude anthropologique des questions ontologiques de l'être. Plus précisément, l'observation ethnographique des réalités matérielles de la procréation médicalement assistée en Équateur montre que le traitement médical est un moyen d'instancier la race. L'assistance à la procréation dans les établissements privés donne en effet des bébés et des patients plus blancs, face à un secteur public de la santé en déliquescence, dont les patients sont, par définition, pauvres et indiens. Le cadre de l'assistance peut être utilisé pour retracer du point de vue ethnographique la constitution de l'être racial dans les nations disposant de meilleures ressources, tout en permettant une reconnaissance plus complète de l'interdépendance de l'existence.

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