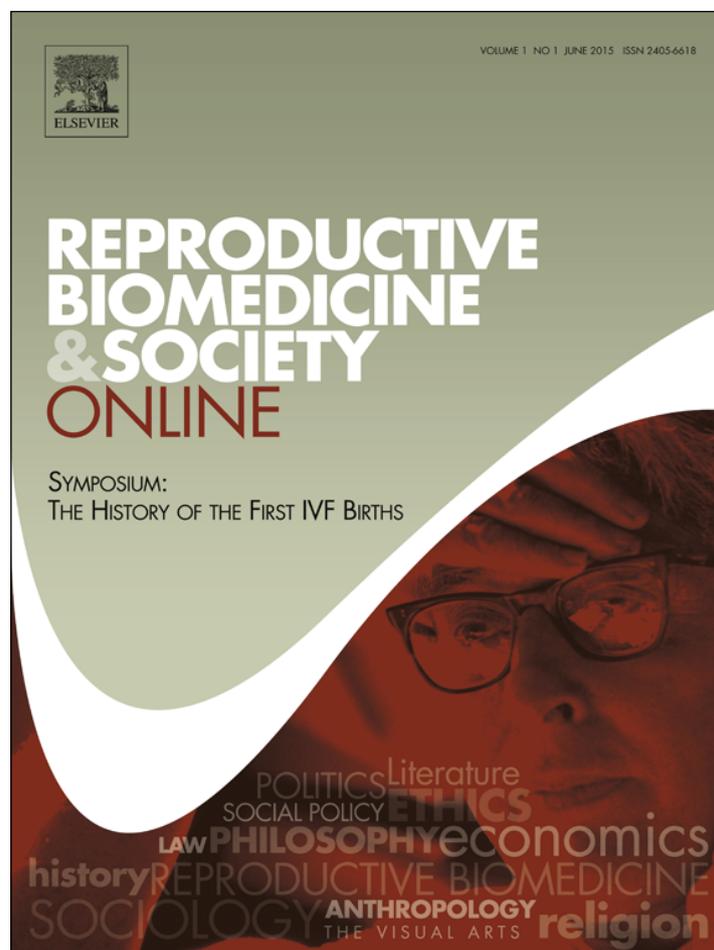


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## SYMPOSIUM: IVF - GLOBAL HISTORIES

# Resources and race: assisted reproduction in Ecuador

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**Abstract** This article considers the early period of development of IVF in Ecuador, focusing on factors that shaped the decade after the nation's first successful IVF birth (1992–2002). It describes how a poorly resourced public healthcare sector compelled Ecuadorians towards private-sector medicine, which included assisted reproduction treatment, and how IVF clinics drew patients through the pervasive racial inequalities that characterise post-colonial Ecuadorian society. More generally, the development of assisted reproduction treatment in Ecuador exemplifies themes in 20th century healthcare provisioning and inequality in Latin America, making it essential to understand this larger picture when considering Ecuador's IVF industry both within the region and also internationally.

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**KEYWORDS:** Ecuador, health care systems, IVF, Latin America, private sector health care, race

## Introduction

In the years leading up to the birth of Ecuador's first test-tube baby in 1992, the mainstream media publicised the possibility of locally produced 'test-tube babies' as a sign of successful scientific and national progress (Bustamante, 1989; Gomez, 1991). However, this breathless praise of Ecuadorian biomedicine contrasted with the experience of IVF practitioners, who, in the decade after the birth of the first Ecuadorean IVF baby, constantly lamented the difficulties of

conducting 'peripheral' biomedicine, especially in regard to obtaining equipment and supplies for this resource-intensive activity. Media commentary about 'technological progress' also contrasted with the experience of women, and their supporters, undergoing IVF. IVF patients in Ecuador, about a third of whom were working class, often experienced the IVF process positively, not because of its scientific modernity, but because their time in private IVF clinics involved highly desirable, personal and paternalistic levels of care conspicuously absent in Ecuador's under-resourced public healthcare

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settings. Within Ecuador's unequal racial history, this kind of personal care allowed patients and their children to become 'whiter' in a terrain where race is not an essential state, but a dynamic process shaped by access to resources, like medicine, education and employment (as discussed in 'Resources and race', below). Thus while IVF practitioners bemoaned their technological shortcomings, the paternalistic care they offered in their clinics attracted patients through the promise of whitening, reinforcing Ecuador's longstanding racial hierarchies.

This article considers the early period of IVF in Ecuador (1992–2002), focusing in particular on how the nation's longstanding racial hierarchy and lack of resources shaped its development. In my ethnographic fieldwork carried out from 2000 to 2007 in six of Ecuador's eight IVF clinics, I traced how a poorly resourced public healthcare sector compelled Ecuadorians towards resource-rich, private-sector medicine, including assisted reproduction treatment (Roberts, 2012a, 2012b). Ethnographic observations of daily life in Ecuador during this period also provided context for how resource access exacerbated pervasive racial inequalities that characterised post-colonial Ecuadorian society. Thus IVF clinics attracted patients partly through their ability to whiten patients and their potential offspring through resources. More generally, the trajectory of assisted reproduction treatment in Ecuador exemplifies the development of 20th century healthcare provision in highly unequal and underdeveloped Latin American nations, making it essential to understand this larger picture when considering Ecuador's IVF industry within the region and around the globe.

Throughout the 20th century, several Latin American nations, particularly Mexico, Colombia, Brazil, Chile, Costa Rica, Uruguay and Argentina, nations with a well-developed state apparatus, developed excellent public healthcare and social security systems based on progressive models of social welfare (Molina et al., 2001). While access to healthcare in these nations tended not to be universal, often linked only to formal-sector employment, marriage or residency in urban areas, the governments of these nations nonetheless created and sustained relatively robust public healthcare systems and healthcare education infrastructures. The so-called neoliberal turn towards the end of the 20th century, characterised by internationally mandated austerity measures and the privatisation of healthcare across Latin America, roughly coincided with the introduction of IVF technology, and consequently most of the early development of assisted reproduction treatment in the region occurred within private medical facilities. However, it was the nations with histories of strong public healthcare infrastructures where the largest and most comprehensive Latin American IVF industries developed, such as in Brazil, Colombia and Argentina, locations that also became hubs for 'elective' forms of healthcare, such as plastic surgery. Thus, growth and innovation within these privatised industries was made possible through the earlier resources allotted to public health provisioning that involved well-organised medical training and robust supply chains for pharmaceuticals and equipment – a fact that is often unacknowledged in the celebration of privatisation and for-profit medical services such as assisted reproduction treatment, plastic surgery, and also medical tourism (Wilson, 2011).

The nations with strong public healthcare systems in Latin America were historically the most prosperous (Huber and Solt, 2004). Poorer Latin American nations, those with a much larger percentage of surviving indigenous peoples after the conquest, especially in Central America and the Andes, tended to have progressive constitutions and laws guaranteeing public health services, similar to more prosperous nations. But these healthcare services were rarely delivered as promised (Coronil, 1988; Roberts, 2012b). This history of under-performing health sectors rendered the neoliberal austerity measures imposed during the 1990s and 2000s somewhat redundant because there had never been a viable social welfare system that could be 'rolled back' to reduce public expenditure. In these nations, the lack of public health provisioning led directly to the development of an IVF industry that was under-resourced from the outset.

The division between relatively prosperous and relatively poor nations in terms of infrastructure and state presence also affected the ability of the Catholic Church to influence IVF practice across Latin America. The Catholic Church is the only major world religion that absolutely condemns all forms of assisted reproduction. The nations in Latin America with relatively robust IVF industries that emerged out of strong state-organised healthcare systems were also the nations with a stronger 'rule of law' than the nations where the Church had a more tangible presence in influencing legislatures and shaping policy. In Costa Rica for example, which had a robust nation state, excellent healthcare infrastructure and strong Church presence, IVF was banned from 2000 to 2015. In my own ethnographic encounters with assisted reproduction treatment practitioners from Chile and Argentina at Latin American assisted reproduction treatment conferences, they described their strategies to deflect the twin attentions of clergy and lawmakers; e.g. promoting GIFT (gamete intrafallopian transfer) or ZIFT (zygote intrafallopian transfer) in clinic publicity or minimising embryo freezing. This concern did not emerge in my work with practitioners in Ecuador who regularly asserted that neither Church censure nor any resultant legal regulation of IVF would affect their clinical practice.

### Ecuador's healthcare landscape

Ecuador was one of the Latin American nations with poor public health provisioning and IVF developed within this context. This weak healthcare infrastructure was partially shaped by Ecuador's late 20th century's political instability. From 1996 to 2004, Ecuador had nine presidents, almost all overthrown, some within days of the start of their presidency. In this period urban poverty increased from 19% to 30% (Clark and Becker, 2007; Gerlach, 2003; Sawyer, 2004). During this time, people increasingly avoided interacting with state representatives and services, avoidance made possible by the flourishing of private medicine, along with private education and private security.

Throughout the late 1990s and early 2000s Ecuador had some of the leading indicators of poor health in Latin America (Crandall et al., 2005), and only 2% of Ecuador's annual budget was allocated to public health, with only Haiti spending less (Vos et al., 2004). The Ecuadorian constitution

and various laws guaranteed health as a right of its citizens but this meant very little in practice. In publically administered hospitals and clinics, patients were treated abysmally, there were few supplies or resources, buildings were crumbling, and iatrogenic infection was common. The World Health Organization (WHO) estimated that in 2002, 64.0% of all health spending in Ecuador came from private sources, indicative of an antipathy towards, and lack of faith in, public health services. Of those expenditures, 88.4% were directly 'out of pocket' from individual and family-household incomes. The WHO also found that 42.5% of the poor and 37.0% of the poorest of the poor turned to the costly private health sector rather than use free or low-cost public services (WHO, 2005). In my ethnographic work in Ecuadorian IVF clinics I found that patients with few resources gathered funds from extended family and/or went into debt to afford these services.

At the same time, private medicine in Ecuador in the early 2000s was unregulated and relatively flourishing, with ubiquitous advertisements for every sort of medical specialty, at all price ranges, blanketing the cityscapes, including IVF, plastic surgery, weight loss centres and medi-spas. The most expensive private clinics had many of the latest technologies and services, but even the more moderately priced and cheapest clinics provided a level of personalised patient care impossible to find in public health facilities. While these offerings were indications of the spread of neoliberal economic policies, many of the underlying economic, relational and physiological logics that shaped the provisioning of private medicine in Ecuador were not new – indeed, they reinstated Ecuador's longstanding racial 'whitening' project (discussed below).

Another factor relevant to the development of IVF in Ecuador was an increase in the number of physicians seeking work. In the late 1990s, while Ecuador had a much-noted shortage of doctors in the public sector (CEPAR, 2000), the actual ratio of doctors per inhabitants in Ecuador had ballooned due to the expansion of the for-profit health education sector (Vos et al., 2004). Until the late 1980s the only medical school in Quito was the public Universidad Central. By the early 2000s at least three more private medical schools had opened, which produced more doctors every year who wanted to avoid working in public hospitals or clinics. Doctors in public sector medicine were paid as little as \$500 a month, which was substantially lower than most professional salaries. Often they were not paid at all, leading to frequent local and national strikes, not for salary increases, but for regular payment (Roberts, 2012b). Private clinics offered much better working conditions and pay, which drew physicians away from public sector medicine.

The imposition of austerity measures within the region from the 1990s onwards produced a severe retraction in formal employment of professionals within the state sector throughout Latin America, driving even more physicians towards private-sector medicine (Portes and Hoffman, 2003). In Ecuador, offering infertility services was one way to enter the potentially lucrative private medical sector where there were few publicly funded or low-cost fertility services. Although most Ecuadorians were used to paying for medical services out of their own pockets, the private sector could not fully support all of these doctors. The salaries of most private physicians were still too low to keep up with inflation, and most of the ancillary staff working in IVF clinics, such as biologists or anaesthesiologists, worked in two or three clinics to make ends meet (Roberts, 2012a).

## IVF in Ecuador

Ecuador's first IVF baby was born in 1992 in Guayaquil, the largest and most commercial city in Ecuador. What became Ecuador's largest IVF clinic was located in Quito – the country's capital and second largest city. Ten years after the birth of Ecuador's first IVF baby, eight IVF clinics had opened, with more in the planning stages. Some of the larger clinics offered a variety of reproductive services – including hysterectomies and even care during labour and delivery. Smaller clinics focused exclusively on IVF and were often located within private Catholic hospitals. Six of these eight clinics were located in Quito and two in Guayaquil. Despite Guayaquil's status as Ecuador's largest and most prosperous city, more IVF clinics developed in Quito, due to its historically higher number of universities and, subsequently, the for-profit medical schools established in the late 20th century. In 2002/2003, when the bulk of the fieldwork upon which this article is based was carried out, there were rumours of clinics opening in Cuenca and Manta, two of Ecuador's medium-sized cities. The exact number of clinics in Ecuador was difficult to ascertain because in the early 2000s there were only two clinics certified by Red Latinoamericana de Reproduccion Asistida (REDLARA), the largest regulatory governing body for assisted reproduction in Latin America, and IVF physicians in Ecuador were reluctant to speak of other clinics with which they were in direct competition.

The number of IVF cycles per clinic per year varied from 10 to 60, a relatively small number compared with the Latin American nations with larger IVF industries. Several of the clinics were or had been engaged in collaborations with IVF clinics from nations with bigger IVF industries, e.g. carrying out group cycles so that IVF specialists from elsewhere could come and conduct gamete retrieval and embryo transfer, and establishing agreements with clinics in the USA where Ecuadorian practitioners could send their patients in need of newer techniques like pre-implantation genetic diagnosis (PGD), while the US-based clinics could send their Spanish-speaking patients, with modest economic means, to Ecuador.

About half of the patients arriving in IVF clinics resided in Quito or Guayaquil, with the other half coming from more rural provinces. About 20% of the patients in the clinics had very limited economic means (with total monthly combined household income of less than \$500), often going into enormous debt to families and money lenders to pay for their treatments (Roberts, 2013). This percentage of patients with few economic resources was partially shaped by the fact that across classes, private medicine was a matter of course, often a first stop, rather than last resort, given the run-down and dehumanising state of low-cost public clinics and hospitals. In the early 2000s the cost of an IVF cycle ranged from \$3000 to \$5000, depending on the clinic, with most patients and their families spending anywhere between \$7000 and \$15,000 dollars throughout the treatment period, a large expenditure in a nation where the average monthly salary at the time was \$270 (Trading Economics, 2015).

During the first decade of IVF's availability in Ecuador there was virtually no regulation of IVF clinics by either state institutions or professional associations, other than the standard annual sanitation inspection required by the Ministry

of Health of all private clinical facilities. There was no Ecuadorian Board of Medicine that issued or revoked licences, nor were a physician's clinical practices scrutinised by insurance companies because patients paid out of pocket and malpractice insurance did not exist. The documents that practitioners and patients signed were not legally binding (Roberts, 2012a). As in the neighbouring countries of Peru and Bolivia, the regulation of IVF in Ecuador was minimal. The only potentially relevant regulatory act, Ecuador's 2002 civil code, which prohibited 'the manipulation of human life after conception', was part of a general trend towards abortion restriction in the larger region (*Código de la Niñez y Adolescencia*, 2003). In theory, this code could have restricted some practices within Ecuador's expanding IVF industry, such as embryo cryopreservation, but in reality, IVF practitioners continued to operate clinics with virtually no oversight or interference from state institutions. In sum, the IVF industry in Ecuador developed, then, not through a pre-existing vigorous public health infrastructure guided by a strong regulatory framework, but as an autonomous, unregulated private endeavour. The growth of private infertility clinics in Ecuador can be understood to have been supported by both the low quality of public healthcare provisioning and by the high level of autonomy afforded to private medicine. These conditions not only allowed, but also encouraged, low-paid and under-employed medical practitioners to establish independent clinics, which in many cases benefitted further from ready access to additional under-employed healthcare workers.

## Resources

Lack of resources characterised much of everyday life in IVF clinics in Ecuador, which were located far away from functional supply chains. Doctors and embryologists had to leave the country for specialist training, most commonly provided by successful IVF centres in Spain, Brazil or the USA. Upon their return home, practitioners would express to me how disheartened they felt by the difficulties of gathering and maintaining the resources they needed to carry out IVF. Taxes and import fees drove up the cost of much needed, but difficult to obtain, equipment. Delays in airport customs made it difficult to obtain properly stored growth media for culturing embryos, or infertility drugs within expiration dates.

These difficulties affected clinical practice in multiple ways. The laboratory biologist at one clinic where I conducted fieldwork had to halt inseminations for a month because the pipettes used to store frozen sperm had not arrived on time, after shipping delays and hold-ups in customs. After an ordering miscalculation at another clinic, practitioners had to change their aspiration method. Instead of using specialised catheters for removing ova they had to improvise with general-purpose syringes – the few remaining catheters reserved for the most challenging cases of embryo transfer to women patients whose cervixes and uteruses were especially difficult to navigate. At another clinic, staff ran out of culture medium and had to transfer embryos back into patients prematurely, on day two rather than day three which was the common protocol at the time. Other supply deficits made it difficult to service larger pieces of equipment when they broke down. I spent an entire day once with the biologist

at one of the medium-sized clinics as we tried to establish why the suction did not work on her intracytoplasmic sperm injection microscope. The US-based company that had supplied the microscope did not offer any after-sales service within Ecuador. The microscope remained non-functional for over a year.

Ecuador's poor supply chain made it more difficult for practitioners to adhere to international protocols and norms. For the biologist at one of the most expensive clinics in Ecuador, the bright red culture medium she used to assess the pH of sperm being prepared for IVF was far from ideal. She explained to me that although the medium was made in France, it was normally only used for livestock: no one in Europe or the USA used this medium on humans. Considered impure for clinical use because of the chemicals used to make it red, she nonetheless chose to employ it because of its durability in the face of temperature changes during shipping. Such difficulties were part of what made it so hard to stick to international standards, which meant that while there were eight privately owned clinics in Ecuador in 2003, only two of them had certification from La REDLARA.

## Resources and race

The problems described above may seem like a fairly prosaic aspect of IVF practice in Ecuador, however difficulties accessing resources in general, and in these private clinics in particular, directly related to how pervasive racial hierarchies manifested in Ecuadorian daily life. In Ecuador, those with more access to resources could become 'whiter', in a nation where location within a racial hierarchy shaped nearly everything about life circumstances. The argument proposed here, linking resources to race, is influenced by the medical anthropologist Libbet Crandon-Malamud, who found that in rural Bolivia in the 1970s, people shifted between religious and healing modalities associated with different races, in order to obtain the material resources that came along with those identities. Crandon-Malamud theorised medicine as a primary resource that could be used to access secondary resources like health but also importantly, social mobility through racial change (Crandon-Malamud, 1991). I witnessed similar processes in Ecuadorian IVF clinics, where infertility treatment brought with it racial transformation for patients and their offspring.

Ecuador became a nation state in 1830, one of the three nations that emerged from the collapse of the *Gran Colombia* formed by Simon Bolivar, (with Venezuela and Colombia making up the other two). The new nation survived post-independence turmoil with its colonial, creole, highland, aristocracy relatively intact, and emerged as one of the most politically and socially conservative of the Andean states. Ecuador had the highest percentage of indigenous peoples of all the new Andean republics (Larson, 2004), and as in other Andean nations, colonial political elites and social reformers in the 19th and 20th centuries decried what they perceived as an indigenous obstacle to the Eurocentric goals of Ecuadorian national development. A key means to develop the nation was through maintaining the whiteness of elites by guarding the reproductive potential of upper-class women, which was seen as fragile (Icaza, 1968; Lyons, 2006). Another 'solution' was to try to produce a lighter/whiter nation through encouraging

the process of *mestizaje* (mixture between indigenous and European), aimed at 'whitening' the indigenous population through (i) illegitimate offspring of male hacienda owners and female members of the indigenous labour force (Harris, 2008), and (ii) the cultivating effects of state-provided education, medicine and social welfare (Cadena, 2000; Clark, 1998). While the first tactic, 'miscegenation', might make sense within a North American essentialist logic of race where distinct races mix biologically, the simultaneous development of programmes to lighten the indigenous population through social programmes speaks to how race in the Andes is a dynamic process, not an essential state. Thus, proponents of *mestizaje* were concerned not only with physical attributes like skin, hair and eye colour, but also with characteristics like dress, diet and dialect. Both were key to maintaining highly stratified racial categories.

Observers of race in the Andes have repeatedly documented how race is conjured through much more than skin colour, involving education, language, employment, residence (urban/rural), foods eaten, and bodily characteristics such as teeth, hair, size and smell (Clark, 1998; Rahier, 1998; Wade, 1993; Whitten, 2003). Race is not experienced as an essential genetic trait as it is in the USA. It can be changed over the course of a person's life through various forms of cultivation (Stutzman, 1981; Weismantel, 1995). For instance, from the early republican period onwards, both healthcare and education were viewed as two of the main strategies for 'whitening' the indigenous into citizens.

From its inception, state-provided medical care was crucial to the national Ecuadorian project to whiten the indigenous by bringing them under state management (Clark, 1998). By the late 20th century, however, public healthcare had generated the opposite effect, of increasing racial distinction. The gross inadequacy of public medical care facilitated racial segregation by forging a direct link between poverty, indigeneity and clinical neglect – making the population who used these services more markedly indigenous through their association with poor health and hygiene. Given that by the early 2000s the nation's crumbling public health service had become the almost exclusive recourse of poor, indigenous or Afro-Ecuadorians, access to private medical care increased in importance as a marker of whiteness.

Ecuadorian IVF clinical directors in the early 2000s operated outside of state oversight but contributed to the national reproductive project of whitening in several ways. Perhaps the most obvious mode of whitening was through the recruitment of whiter egg and sperm donors, organised through the efforts of elite male directors. In general, practitioners 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, in which case, practitioners would pick a donor lighter than the recipient. One biologist explained to me that the clinic's staff were looking for donors from the 'better social class' because the clinic director didn't want indigenous donors. He wanted to '*mejorar la raza*' (better the race) through mixing. This effort resonated with efforts to 'better the race' through the control of female reproduction potential on post-colonial haciendas – both through guarding the reproductive potential of elite women and through the lightened offspring that resulted from the often coercive sexual relationships between indigenous women and hacienda

owners and overseers. This mixing towards lightening did not only mean physical skin colour, either in this biologists' formulation or in Ecuador more widely (Roitman, 2008).

Additionally, this biologist's remarks about 'bettering the race' demonstrates that while race in Latin America is generally characterised as more fluid than North American essentialist race, race does not work the same in all Latin American nations. This practitioner's evocation of race in a private infertility clinic contained a larger, national agenda, while recent ethnographic work in Argentina shows that in egg donation, race is not deployed as part of the national agenda, but instead works to implicitly confer familial kinship through likeness (Ariza, 2015).

In Ecuador, whiter egg and sperm donors were also explicit about how their contribution served to 'better the race' on this larger scale, by enabling childless couples to avoid having to adopt a darker child (which also implied a child from a poorly educated and unruly family). Many IVF patients, especially in Quito, worried that anonymous egg and sperm donors might make potential offspring 'dark', which meant they preferred family donors. However, one difference between these racial concerns and race essentialism in the USA was that race and colour were not only conferred through phenotypic attributes but through environment and access to resources. We can see this racial dynamism at work in the racialised provisioning of medical care of private IVF clinics.

The process of becoming a patient in a private infertility clinic also entailed whitening female patients along with their potential offspring, by offering attention in the form of relatively well-resourced, elite private healthcare instead of public health services. In millennial Ecuador, there was a prevalent 'anticipatory infertility' among middle-class women as well as some working-class women. The young, childless, middle-class women I encountered in the early 2000s 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. They were often sure that they could not have children because of strange or troublesome menstrual symptoms. Considering the historic construction of whiter women as possessing a more fragile fertility that must be guarded, reproductive dysfunction itself was a means to whiten women, through the private assistance and resources reserved for Ecuador's most desired reproducers, who deserved personalised care (Armus, 2003; Nouzeilles, 2003; Zulawski, 2007). Patients receiving services in private infertility clinics were whitened then, by having the resources to become recipients of the care reserved for 'delicate' whiter elites in need of more intensive cultivation. The time, effort, expense, attention and equipment invested in their bodies, and in bringing about their hoped-for children, made them whiter in a nation where the vast majority did not have access to this kind of care.

Assisted reproduction needs to be understood as one among several private medical techniques that whitened its recipients. Plastic surgery and Caesarean section were two other forms of assisted whiteness in millennial Ecuador. Similar to IVF, plastic surgery harnessed resources that indicated whiteness. Additionally, nasal reconstruction to remove 'indigenous' nose bumps, and liposuction in the context of the high valuation that indigenous communities place on fat and heavy bodies (Canessa, 2000; Weismantel, 2001), were both profoundly whitening in their rejection of Indian corporality.

Caesarean sections also served to whiten their recipients. In early 2000s Ecuador, the C-section rate in private hospitals was estimated to be between 70 and 90%. In publicly funded clinics and hospitals, it was less than 20%. Costing anywhere between \$300 and \$1500, a C-section in a private clinic was affordable (through debt) for many urban Ecuadorians. The urban Ecuadorian women I came into contact with were well aware of the radical differences between public and private birth. The vast majority of middle-class women of childbearing age with whom I spoke did not know any women of their generation who had a vaginal birth, except possibly their *empleadas* (domestic servants). Every woman in my study who got pregnant via IVF gave birth with a Caesarean, even those women who had given birth vaginally before.

IVF participants, like plastic surgery and C-section patients, lived in a malleable material and biological world shaped through configurations of people and things, including money and the resources and care it can buy. The commonly used phrase 'money whitens' (*el dinero blanquea*) was not only metaphoric (Lau, 1998). In regard to assisted reproduction, money enabled participation in IVF, a private practice that served the ongoing national whitening project by making whiter IVF patients and children. The expenditure of expensive resources and interventions involved patients and practitioners in relations of privileged patronage. Reproducing racial hierarchies through the expenditure of resources was a significant part of assisted reproduction, because in this vastly unequal terrain, more resources meant a more valued existence. This history of racial hierarchy and malleability is essential for understanding why the outlay of scarce resources is so essential to the practice of private medicine in Ecuador. For patients, private medical assistance did not index some free-floating desire for scientific modernity, as much as long- and short-term histories of resource inequality and personalised care that materialised racial difference.

## Conclusion

Understanding the development of IVF in Ecuador requires knowledge of the nation's history and political economy, especially in relation to its history of poor healthcare infrastructure, and its racial reality. In writing about IVF in the USA, Charis Thompson deploys the term 'ontological choreography' to describe '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)' in assisted reproduction treatment clinics (Thompson, 2005, p.8). The choreography required for IVF in Ecuador tended, instead, to involve practices that allowed resources to come together, which could be quite difficult in resource-poor settings. The fact of these difficulties manifested a longstanding racial order that while malleable was always hierarchical.

Historical and regional insight about Ecuador, especially with regard to inequitable resource distribution, allows for a better understanding of why the arrival of assisted reproduction treatment in Ecuador brought few of the anxieties about 'nature' that had been common in the global north concerning 'different ontological orders' (Thompson, 2001), for instance concerning its 'artificiality'. Additionally, Catholic condemnation of assisted reproduction did little to prevent

Catholic Ecuadorians from participating in IVF. A focus on resources partially explains this embrace. People in Ecuador, both inside and outside the clinics, commonly described themselves and others as having *bajos o altos recursos* (low or high resources). This language of resources, indicating their highly unequal distribution, underscores how resources are linked to existential questions of how people came to be, and in Ecuador, 'being' has an explicitly racial element, where race is a dynamic process beyond physical markers, involving region, language, dress, education and access to resources.

It also helps us to understand why the anxieties of IVF practitioners about their lack of clinical resources did not diminish their patients' pleasure in being treated in these same clinics, given the stark difference between private and public medical facilities. IVF's capacity to whiten its participants through the outlay of resources contributed to dissipating possible concerns about Church condemnation and potential anxieties about its relation to 'nature'. We could also use the framework of resources to examine private IVF provision since the election of the leftist president Rafael Correa in 2007 when, by many accounts, Ecuador's public healthcare system actually began receiving the resources necessary to deliver care.

Viewing IVF provision through the context of resources might also provide a useful analytic more generally. In Ecuador, healthcare inequality and encompassing racial inequality provide a means to examine the effects of resource-poor settings on IVF practice, and how state policy (or lack of it) facilitates the private practice of IVF. A resource framework could be equally applied to wealthier nations, or nations with functional public healthcare systems, tracking how, what and for whom resources for assisted reproduction are put in place. In other words, what kinds of people do these resources make? This resource framework would compel us to examine the kinds of conditions that bring persons into existence and the kinds of resources these persons then receive. With resources as our guide, we can also examine how, even when IVF is carried out in private clinics, it is often facilitated in various ways by state institutional and infrastructural histories, contributing to the ongoing production of hierarchy in vastly unequal global realities.

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## References

- Ariza, L., 2015. Keeping up Appearance in the Argentine Fertility Clinic: Making Kinship Visible through Race in Donor Conception. *Technoscienza* 6 (1), 5–31.
- Armus, D., 2003. Disease in the History of Modern Latin America: From Malaria to AIDS. Duke University Press, Durham.

- Bustamante, M., 1989. *Bebes Probeta' 100% Ecuatorianos: Los Niños del Millón de Suces*. Vistazo, pp. 39–42.
- Cadena, M.d.l., 2000. *Indigenous Mestizos: the politics of race and culture in Cuzco, Peru, 1919–1991*. Duke University Press, Durham, NC.
- Canessa, A., 2000. Fear and Loathing on the Kharisiri Trail: Alterity and Identity in the Andes. *J. R. Anthropol. Inst.* 6 (4), 705–720.
- CEPAR, 2000. *Endemain-III, Ecaudor Informe General*. Centro de Estudios de Poblacion y Desarrollo Social, Quito.
- Clark, K.A., 1998. Race. 'Culture,' and Mestizaje: The Statistical Construction of the Ecuadorian Nation, 1930–1950. *J. Hist. Sociol.* 11 (2), 185–211.
- Clark, A.K., Becker, M., 2007. *Highland Indians and the state in modern Ecuador*. University of Pittsburgh Press, Pittsburgh, PA.
- Codigo de la Ninez y Adolescencia, 2003. *Congreso Nacional. Funcion Ejecutiva*, Ecuador.
- Coronil, F., 1988. *The Magical State: Nature, Money and Modernity in Venezuela*. University of Chicago, Chicago.
- Crandall, R., Paz, G., Roett, R., 2005. *The Andes in focus: security, democracy, and economic reform*. Lynne Rienner Publishers, Boulder, Colo.
- Crandon-Malamud, L., 1991. *From the Fat of Our Souls: Social Change, Political Process, and Medical Pluralism in Bolivia*. University of California Press, Berkeley.
- Gerlach, A., 2003. *Indians, oil, and politics: a recent history of Ecuador*. Scholarly Resources, Wilmington, De.
- Gomez, S., 1991. *El Bebé Probeta Llego a Ecuador: Los Hijos de la Ciencia*. La Otra, pp. 62–65.
- Harris, O., 2008. *Alterities: Kinship and Gender*. In: Poole, D. (Ed.), *A Companion to Latin American Anthropology*. Blackwell, Oxford.
- Huber, E., Solt, F., 2004. Successes and Failures of Neoliberalism: Introduction to a Debate. *Lat. Am. Res. Rev.* 39 (3), 150–164.
- Icaza, J., 1968. *Huasipungo: novela*. Losada, Buenos Aires.
- Larson, B., 2004. *Trials of Nation Making: Liberalism, Race, and Ethnicity in the Andes, 1810–1910*. Cambridge University Press, Cambridge, UK; New York.
- Lau, E.T., 1998. *Can Money Whiten? Exploring Race Practice in Colonial Venezuela and its Implications for Contemporary Race Discourse*. *Mich. J. Race Law* 3, 417–473.
- Lyons, B.J., 2006. *Remembering the hacienda: religion, authority, and social change in highland Ecuador*. University of Texas Press, Austin.
- Molina, C.G., del Arco, J.N., *Inter-American Development Bank*, 2001. *Health services in Latin America and Asia*. Distributed by the Johns Hopkins University Press for the Inter-American Development Bank, Washington, DC.
- Nouzeilles, G., 2003. *Hysteria in turn-of-the-century Buenos Aires*. In: Armus, D. (Ed.), *Disease in the History of Modern Latin America: From Malaria to AIDS*. Duke University Press, Durham Pp. viii, 326.
- Portes, A., Hoffman, K., 2003. *Latin American class structures: Their composition and change during the Neoliberal Era*. *Lat. Am. Res. Rev.* 38 (1), 41–82.
- Rahier, J.M., 1998. Blackness, the racial/spatial order, migrations, and Miss Ecuador 1995–96. *Am. Anthropol.* 100 (2), 421–430.
- Roberts, E.F.S., 2012a. *God's Laboratory: Assisted Reproduction in the Andes*. University of California Press, Berkeley, CA.
- Roberts, E.F.S., 2012b. *Scars of Nation: Surgical Penetration and the Ecuadorian State*. *J. Lat. Am. Carribean Anthropol.* 17 (2), 215–237.
- Roberts, E.F.S., 2013. *Assisted Existence: An Ethnography of Being in Ecuador*. *J. R. Anthropol. Inst.* 19 (3), 562–580.
- Roitman, K., 2008. 'Longos' and 'cholos': Ethnic and Racial discrimination among Mestizo in Ecuador. *CRISE Working Paper*. Vol. 58. Oxford England.
- Sawyer, S., 2004. *Crude chronicles: indigenous politics, multinational oil, and neoliberalism in Ecuador*. Duke University Press, Durham N.C.
- Stutzman, R., 1981. *El Mestizaje. An all inclusive ideology*. In: Whitten, N. (Ed.), *Cultural Transformations and Ethnicity in Modern Ecuador*. University of Illinois, Urbana, pp. 45–94.
- Thompson, C., 2001. *Strategic naturalizing: kinship in an Infertility Clinic*. In: Franklin, S., Mckinnon, S. (Eds.), *Relative Values: Reconfiguring Kinship Studies*. Duke University, Durham, London, pp. 175–202.
- Thompson, C., 2005. *Making Parents: The Ontological Choreography of Reproductive Technologies*. MIT Press, Cambridge.
- Trading Economics, 2015. *Ecuador Gross Average Nominal Monthly Wages (1995–2015) 2015*.
- Vos, R., Cuesta, J., Leon, M., Lucio, R., Rosero, J., 2004. *Ecaudor, Public Expenditure Review 2004*, Health. Secretaria Tecnica del Frente Social, Quito, pp. 1–80.
- Wade, P., 1993. *Race, Nature and Culture*. *Man* 28 (1), 17–34.
- Weismantel, M., 1995. *Making kin: kinship theory and Zumbagua adoptions*. *Am. Ethnol.* 22 (4), 685–704.
- Weismantel, M.J., 2001. *Cholas and Pishtacos: Stories of Race and Sex in the Andes*. University of Chicago Press, Chicago.
- Whitten, N.E., 2003. *Millennial Ecuador: critical essays on cultural transformations and social dynamics*. University of Iowa Press, Iowa City.
- WHO, World Health Organization, 2005. *Statistics by country or region*; Ecuador.
- Wilson, A., 2011. *Foreign Bodies and National Scales: Medical Tourism in Thailand*. *Body Soc.* 17 (2 and 3), 121–137.
- Zulawski, A., 2007. *Unequal cures: public health and political change in Bolivia, 1900–1950*. Duke University Press, Durham, NC.

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