

GOD'S LABORATORY: RELIGIOUS RATIONALITIES AND  
MODERNITY IN ECUADORIAN IN VITRO FERTILIZATION

**ABSTRACT.** Catholicism is the only major world religion that unequivocally bans the use of in vitro fertilization (IVF). Nevertheless, in Ecuador, Catholic IVF practitioners declare God's dominion over their IVF laboratories and clinics in explaining pregnancy outcomes. My analysis of this routine combination of spiritual and material causal models in Ecuadorian IVF contributes to two ongoing discussions about (1) the tensions between "institutional" and popular forms of Catholic religiosity and (2) the proper boundaries of science in modernity. The Catholic Church's historical and contemporary struggle to determine control of the *miraculous* has usually been characterized as a conflict between *educated* clergy and *humble* peasants. In the case of Ecuadorian IVF, we find, instead, educated elites and middle classes participating in this same contestation with the Church, proclaiming their direct ability to harness the power of God to effect material change on earth. This spiritual power to affect clinical outcomes does not take place just anywhere, but in clinic and lab, disrupting another set of presumptions about modern scientific practice and subjectivity. Like other Ecuadorian elites and middle classes, IVF practitioners are heirs to Enlightenment thought, and experience themselves as modern in their participation in these high-tech endeavors. But their spiritual approach to laboratory rationality does not trouble these IVF practitioners' experience of themselves as moderns, prompting a reevaluation of the narratives of scientific modernity that limit their scope to Europe and North America.

**KEY WORDS:** Ecuador, in vitro fertilization, modernity, Catholicism

INTRODUCTION

Technologies of assisted reproduction such as in vitro fertilization (IVF) have been controversial on religious grounds since their inception, but nonetheless, within Islam, Judaism, Confucianism, Hinduism, and most forms of Christianity, adjustments have been made to facilitate the fertility of their adherents (Bharadwaj 2002; Handwerker 1995a; Inhorn 2003; Kahn 2000). Catholicism remains the only major world religion that unequivocally condemns the use of IVF. Official Catholic condemnation of IVF revolves around two primary issues. The Vatican argues that (1) the research, development, and practice of IVF involve the destruction of embryos, i.e., the "destruction of human life," and (2) by engaging in assisted reproduction, humans are technologically interfering with a process that should remain under God's dominion (Ratzinger 1987).

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Since 2000, I have conducted research at seven IVF clinics in Quito and Guayaquil, Ecuador, a predominantly Catholic country. In 2002–3, I carried out a year of ethnographic research at seven of Ecuador's nine private IVF clinics. My observations mainly took place in the IVF clinics themselves, as I watched and talked with practitioners and patients in waiting rooms, laboratories, operating rooms, and patients' recovery rooms. In addition, I conducted more than 130 formal interviews for the project with female infertility patients, their male partners, IVF practitioners, physicians, laboratory biologists, and staff at IVF clinics, egg and sperm donors, surrogate mothers, local Catholic priests, lawyers, and bioethicists. I obtained consent from both patients and practitioners for interviews and observations, and changed the names of all participants in order to protect their identity. My study and informed consent process was reviewed, approved, and monitored throughout by the Institutional Review Board at the University of California, Berkeley (for an expanded discussion of my methods and findings see Roberts 2006).

In October of 2003 I was in Quito attending a national meeting for infertility specialists and IVF doctors. The penultimate night of the conference, the Grünenthal Group, a German pharmaceutical company that markets birth control pills,<sup>1</sup> paid for and hosted a dinner in the Convent of San Francisco, the largest, oldest, and most celebrated Church complex in Ecuador. San Francisco de Quito is controlled by the local Episcopal conference but, as part of colonial Quito, has been deemed a UNESCO world heritage site and is frequent home to civic and state events that display the richness of Quito's colonial heritage. The banquet halls of the convent can also be hired for private events such as weddings and conferences. Apparently while renting out their halls those in charge at the convent either did not check into the affiliations of their renters, or had not cared to prevent the use of consecrated ground by those who promote nonreproductive sex and asexual reproduction. Conference participants—doctors, biologists, pharmaceutical executives, spouses, and I—ate dinner in the banquet hall adjacent to the church, listening to live classical music under monumental paintings of Franciscan history and larger-than-life crucifixes carved by members of the 16th- and 17th-century Baroque Quiteño school of religious art. The waiters wore tunics with Grünenthal's name embroidered on the breast. There were no religious representatives from the convent in evidence.

Earlier that evening, participants assembled at the conference hotel in the "new town" to board a bus chartered to carry dinner guests to the convent in the old town, which is considered dangerous by many Quiteño elites and middle classes. (Most would not want to drive their cars there at night.) On the way to the dinner I sat next to Dr. Madera, probably Ecuador's most

prominent IVF specialist, at whose clinic I had worked the previous year. As we rode I commented on the fact that we were having dinner at the convent when the Catholic Church is against IVF. Madera started laughing and said, "That's good for you to write about, no?" Continuing to laugh, he joked that the conference organizers could only say that "a group of doctors" was having a meeting, without specifying what kind of doctors they were. "But", he added, "Money opens every door."

As we continued to drive through the very narrow lanes of Quito's *Centro Historico*, Madera acted as a tour guide, naming off the streets for me. In turn, as we passed the convent of Santa Catalina, I asked Dr. Madera if he knew about the seventeenth-century bench inside the Convent that had been the possession of an especially pious nun. The bench is reputed to help infertile women who sit on it and pray to get pregnant.<sup>2</sup> Madera told me he never has heard of the bench and wanted to know (winking at me) "if the nuns get pregnant too." He continued in this vein with a story: "There are tunnels under the churches in the old town where the priests and nuns meet and they have found the remains of fetuses there." This was not the first time I had heard this story, but never from a doctor who might have a specific interest in portraying the Church in a less than flattering light, given his own role in facilitating a condemned form of virgin birth.<sup>3</sup>

Throughout this encounter with Dr. Madera I was enacting what I always imagined as a somewhat standard North American position in relation to my Ecuadorian hosts. I would point out a discrepancy between "the official rules" and what actually happens in Ecuador, be it a state or religious matter. Then the Ecuadorian friend, taxi driver, research informant, or other interlocutor, would reply with an almost-gleeful further elaboration of how egregious the infraction of the rule *really* was. Thus, schematically, my exchange with Dr. Madera went as follows: I said, "The church is breaking its own rule, allowing IVF doctors to use consecrated space." Madera (intensifying this point) responded, "You can't even begin to imagine how outrageous things are. Nuns and priests couple and then abandon aborted fetuses in Church tunnels."<sup>4</sup> Dr. Madera considered himself Catholic, however, and in fact portrayed God as taking direct action in his IVF practice. Three years earlier, during an interview I conducted with him, he had declared, "God is in the laboratory."

In this article I explore how Ecuadorian, Catholic IVF practitioners like Dr. Madera approach their use of these technologies in the face of Vatican disapproval.<sup>5</sup> In observing the practice of these bioscientific professionals, I came to perceive that they routinely combine the domains of spirit and matter in the realm of science (God is in the laboratory), in a way that works to contest the position of the Catholic Church. My observations and analysis

of this phenomenon contribute to two ongoing discussions about (1) tensions between “institutional” and popular forms of Catholic religiosity and (2) the proper boundaries of science in modernity. The Catholic Church’s historical and contemporary struggle to determine control of the *miraculous* has usually been characterized as a struggle between the *educated* clergy and *humble* peasants. In the case of Ecuadorian IVF, we find, instead, educated elites and middle classes participating in this same contestation with the Church, proclaiming their direct ability to harness the power of God to effect material change on earth. This spiritual power to affect clinical outcomes does not take place just anywhere, but in the clinic and lab, disrupting another set of presumptions about modern scientific practice and modern scientific subjectivity. Like other Ecuadorian elites and middle classes, these IVF clinicians and biologists are heirs to Enlightenment thought, and experience themselves as modern in their participation in these high-tech endeavors. But their spiritual approach to laboratory rationality does not trouble these IVF practitioners’ experience of themselves as moderns, prompting a reevaluation of the narratives of secular, scientific modernity that limit their scope to Europe and North America.

#### MODERN ECUADOR

In detailing the particularity of Ecuadorian modernity through IVF I am not suggesting an “alternative modernity” (Gaonkar 2001) but, instead, a local formulation of the predicament involved in achieving modernity within a nation marginalized to that process. In Ecuador the urban middle- to upper-class IVF practitioners with whom I worked could be described as avid participants in what Talal Asad (1993) calls the “modern project,” for which elite and professional classes strive. This project aims at institutionalizing civil equality, industry, consumerism, freedom of the market, and secularism. These aspirations were manifest in their uncritical accounts of societal failure. While national pride is one of the most common characteristics that travelers have noted about neighboring Peru, my daily encounters in Ecuador were filled with a palpable sense of what has been termed Ecuador’s “national inferiority complex” (Miles 2003: 123). As a representative of a supposed Northern functionality, I was frequently used by Ecuadorians of all classes to enact another standardized interaction, this time more of a monologue: “What’s wrong with this country? Why are we so backward?” Depending on the person speaking, the blame, I was told, rests with the dysfunctional state, corruption, or with the superstitious and insular indigenous groups of Ecuador. Blame or anger was *very* rarely

directed toward the “North” or at the injustices of the economic world order. To remedy this failure, there have been constant attempts by the elite to “modernize” the mentality of the nation, often through efforts at the creation of a shared sense of *being* Ecuadorian that elites find lacking (Radcliffe and Westwood 1996).

In the news media, IVF has been mobilized as a symbol of pride, modernity, and progress in Ecuador; however, Ecuadorian IVF practitioners engaged in this failure narrative of the nation as well. They constantly lamented the difficulties of “peripheral” bioscience due to what they see as their country’s failure to maintain the infrastructure of a “modern” nation-state. They had to go elsewhere for training and, on returning, faced an ongoing “crisis,” narrated as economic, political, and social. Many of these Ecuadorian technical elites, who have advanced degrees attained elsewhere, are compelled to seek employment in three or four locations, as clinicians, teachers, or consultants.<sup>6</sup> At Dr. Madera’s clinic, the best known in the country, there was always a large staff on hand due to the very low cost of labor. On the other hand, material resources, such as paper, pipettes, and tubing, were watched closely and reused when possible. Clinicians and auxiliary staff had to be constantly strategic about the problems and costs inherent to operating so far from any bioscientific center. Selecting and purchasing new microscopes and incubators were enormous undertakings. Delays in airport customs made it difficult to obtain properly handled growth media for culturing embryos or infertility drugs within expiration dates. In my travels back and forth from the United States I was often recruited as a mule to transport hormones, Dopplers, instructional videotapes, books, and specialized microscope pipettes.

Even though IVF practitioners represented these problems of access to technical resources as signs of Ecuador’s distance from modernity, they were not anxious about how their enchanted laboratories deviated from the standard modern narrative of secular science. While modernity was a key symbol of attainment for these middle-class Ecuadorians, laboratory mixtures of spirit and matter were not considered by them to be worrisome signs of a premodern irrationality. Ecuadorian IVF practitioners invoked the divine in clinics and laboratories to make sense of clinical outcomes and to legitimate their practice in the face of Vatican condemnation. Their desire to achieve modernity did not include a yearning to become “secular subjects.”<sup>7</sup> So when an Ecuadorian IVF doctor declared, “God is in the laboratory,” or when an IVF biologist used the image of the Virgin on her microscope to bless eggs and sperm in the hopes of fertilization, it must be understood that for these practitioners there was no contradiction between scientific

modernity and the miraculous and personal intervention of God within one of *the* archetypal spaces of modernity—the laboratory.

The laboratory has become one modern secular realm that is commonly thought to demand the explicit exclusion of spirit in order for the work of science to proceed (Latour 1993; Shapin and Schaffer 1989). Its daily operations are thought to be “secular” in the extreme sense, signifying the full excision of religion from its domain (Hess 1993). It is sometimes easy to forget, however, that the secular was initially constituted through the creation of religion as a bounded object and its subsequent constriction to the “private” sphere (another newly formulated category of the Enlightenment). Max Weber’s famous thesis (2001) predicated the modern era on the emergence of a new type of religious subjectivity, not religion’s totalizing banishment from modernity. But “the secular” has taken on life of its own, so that it is sometimes understood to have brought about religion’s demise.

In the past two decades social scientists have begun to question this standard narrative of modern disenchantment (Asad 2003; Bauman 2001; Latour 1993), in recent years a narrative made even easier to complicate given the unabashed religiosity of the Bush administration and its supporters. As historian Jonathan Sheehan (2003) describes in his article surveying recent historical work on the religious origins of the Enlightenment:

As an analytical category, secularization plagues the efforts to connect the Enlightenment and religion, not least because the term is so crucial to the self-imagination of the modern age, which has, from the eighteenth century onward, understood itself as surpassing its religious past.

While the Bush administration has exhibited little interest in “surpassing” religion, its move to infuse science with religiosity has perhaps compelled beleaguered North American scientists to police the boundaries between matter and spirit with greater vigor. This is not the case in Ecuador, where even Ecuadorian bio-scientific practitioners do not imagine their scientific endeavors as “surpassing” a religious past; instead, they live in a fully religious present.

In the field of Latin American history as well, there has been a move by scholars to reevaluate the received wisdom told about the battle between secular liberalism and the Catholic Church in the 18th and 19th centuries. Historian Pamela Voekel describes how the Enlightenment project in Latin America, where the Catholic Church’s hold was never completely undermined, took a different form than in Western and Northern Europe (Voekel 2002). In Latin America, many of the battles about the Enlightenment

project took place within the flock of Church faithful instead of from outside and against it. Voekel argues that in Mexico the move towards Enlightenment ideals came not from elite men who had moved away from the Church, but instead from elite reformers within the Church.

Referencing Foucault, Voekel (2002) portrays these men as “self” fashioned into a new form of Catholic subject heavily borrowed from the Protestant reformation. These men, whom she terms “enlightened Catholics,” proclaimed themselves sober, civic-minded, self-disciplined, and rationally bureaucratic. They objected to what they saw as the baroque displays of traditional Catholicism, with its outwardly focused “decadent” professions of devotion and entrenched, personalistic, patron-client relations.<sup>8</sup> Voekel claims that at least in the late 18th century these men were not fighting for a separation of church and state, but instead for a rationalized Catholic state; thus modernity in Mexico had clear religious origins. This distinction made by Voekel between baroque and enlightened Catholicism is key to my analysis of God’s invocation at the clinics and laboratories of Ecuadorian IVF. Baroque Catholicism, for the purposes of my analysis here, signifies outwardly focused devotion centered on personalistic exchanges with God and saints, with relatively little attention paid to Church doctrine. Enlightened Catholicism denotes a cultivation of the individual self as inwardly focused, temperate, and rule-oriented. By understanding the majority of IVF practitioners in Ecuador as baroque Catholics, their approach to IVF, as Catholics, becomes explicable.

With this careful set of reevaluations in mind we cannot take the nonreligious foundation of modern science for granted, but we also must remember how powerful the image of nonreligious, secular science is for many moderns. Practitioners of science and biomedicine (at least in the “North”) continue to assert their practice as disenchanting, even as scholars demonstrate modernity’s continued production of the mystical and the enchanted, as a necessary means to constitute self through other (Asad 2003; Certeau 1992; Favret-Saada 1980). This continued affirmation of the nonreligious secular makes evocations of God’s presence in the laboratory on the part of Ecuadorian IVF practitioners a somewhat irregular declaration of religiosity where only material explanations should be permitted to enter. It would be easy enough for Northern scientists to dismiss these claims as another example of the inability of “third world” scientists to purify themselves and their practices from spirit.<sup>9</sup> The task here, however, is to explain how and why Ecuadorian elites in laboratories, who are fully enlisted in a modern project, proudly declare God’s presence in their midst.

## RELIGIOUS RITUAL EXPRESSION: CLINIC AND LAB

My own presuppositions of what modern medical professionals were supposed to be like were challenged in my first days of observation in Ecuadorian IVF clinics. Initially, I assumed that the Catholic religious imagery hanging on the clinic walls was on display for the patients, the majority of whom I knew to be religious. My assumption was proved wrong when I first entered clinic laboratories and operating rooms and observed that these images, as well as religious rituals, occupied an integral position in the practice of many embryologists and clinicians. God, it seemed, had not been banished from the premises. God's will was invoked in two main areas of clinic life: the first during procedures and treatments and the second in practitioners' reflections on the general state of clinical affairs. There was a spectrum of types of religious expression and practice. Of the ten laboratory biologists and ten clinicians with whom I spent the most time, 15 could be categorized as embodying a baroque Catholic religious sensibility as characterized by Voekel, although they were as much modern participants in Enlightenment thinking as the others. Of the five remaining, two were atheists, and three I came to think of as enlightened Catholics. These three denied God's influence on clinical outcomes with statements like, "God is not a puppet master," or "Faith does nothing."<sup>10</sup> But when working with patients, everyone—even the atheist practitioners—would invoke God at specific moments of the IVF process.<sup>11</sup>

A cycle of IVF involves many steps or phases, some more dramatic than others. At the commencement of the cycle the patient is given hormones to stimulate her follicles so more than one egg will be released at ovulation. The clinician checks the patient's follicles with a sonogram every other day to measure their growth. When the follicles are large enough (usually around days 12–15), they are vaginally aspirated in an operating room. Follicular fluid containing the eggs is suctioned out of the patient and deposited into test tubes, which are delivered to the waiting biologist in the darkened laboratory next door. She empties the contents of these tubes into petri dishes and examines this fluid under a microscope for eggs.<sup>12</sup> At the aspiration, all conscious participants (the patient at this moment is unconscious) wait expectantly for the number of eggs retrieved. As she searches for eggs, the biologist calls out the running number from the laboratory. If she fails to keep those present informed, nurses and doctors shout queries from the operating room. When the biologist is satisfied that all the eggs have been isolated, she places them in growth media to await further preparation for the fertilization and cultivation stage, which lasts from two to three days.

The next drama, although more solitary, is one of the two most fraught moments of the entire process. The laboratory biologist, now alone (except for the occasional anthropologist), prepares the eggs for insemination. Once she places the sperm in the petri dish, there is nothing else she can do but hope, until checking for fertilization 18–20 hours later.<sup>13</sup> It is at this time that she reflects on the quality of the gametes and wishes for an outcome. At Dr. Padilla's clinic, Linda, the laboratory biologist, kissed and caressed the incubator as she intoned her desire for God to fertilize the eggs. She would often say a short prayer, addressing God familiarly: "Que Diosito quiera que los ovulitos fertilicen." (May God want the eggs to fertilize.) At another lab, the biologist, Dr. Escobar, made the sign of the cross before he placed the petri dish with the ovum and sperm in the incubator. With the gamete safely inside, he patted the incubator, saying, "Go with God." In Dra. Leon's laboratory, when she finished combining ovum and sperm, she would touch the image of the Virgin Mary hanging over the principle microscope and then make the sign of the cross. As she closed the door to the incubator after placing the petri dish inside, Dra. Leon touched an attached crucifix hanging in a sterile plastic bag, and again made the sign of the cross.

In addition to these visible acts of devotion, some biologists told me that they make silent prayers throughout the cycle as well. Dra. Larrea told me that at every aspiration she says "a prayer to God asking him to let us get the number of eggs we need and that we get good results. I say this before I enter the lab before each aspiration so that it goes well. God help us." She continued, "I have Christ in the laboratory. Whenever I go to do a procedure, I ask that he enlighten me to do things well." The next day, before checking the eggs for fertilization, the biologist might make the sign of the cross. If they are *bonito* (pretty), instead of *feo* (ugly) or not fertilized at all, she might give thanks and make another sign of the cross. After this crucial check the new embryos are monitored on a daily basis for cell division and cell regularity until the transfer. Finally, before the transfer the right embryos must be selected and another prayer might be offered at this moment: "God permit me to choose good embryos."

The transfer of embryos to the patient is also a moment of great consequence. The transfer occurs from 48 to 72 hours after the aspiration. The transfer itself is often made religious through interactions between practitioner and patient. During the transfer the IVF patient is told to relax so the embryos have a better chance of implanting. But relaxing can be difficult. This directive is often given with an abrupt tap on the patient's inner thighs exposed in stirrups. A catheter is inserted through her cervix. She has a full bladder. She is nervous and uncomfortable and often has to urinate. When

the doctor inserts the catheter he holds it there for one timed minute before injecting the embryos into the patient's uterus. This moment is unusually quiet. Everyone holds their breath, staring at the catheter or at the clock positioned over the doctor's head, which in turn is positioned between the patient's thighs. Once withdrawn, the catheter must be inspected by the biologist back in the lab to ensure that no embryos remain inside the tube. With the shout of "Está bien" (It's fine) from the lab, the tension dissipates.

During transfers, God's intervention is called for in several ways. One lab biologist, Rocio, told me that she always says a silent prayer at the beginning of the transfer:

I do it internally. I ask him [God] for the *señora* to get pregnant. For me it's the moment of the transfer, the first day, the second day, the third day, all perfect [referring to the days before transfer]. It is the last step. The most important. Don't fail me.

At Dr. Padilla's clinic, Linda, the biologist, would enter the operating room from the laboratory holding a tube containing the embryos that were to be inserted into the catheter already positioned in the patient's cervix. Dr. Padilla would then say out loud, mostly for the benefit of the prone woman and her husband, "This is the serious part." When he placed the embryo-filled catheter inside the patient for the timed minute, he would twice intone, "God help us, may these implant" as a nurse guided the patient's right hand in the sign of the cross. With the transfer complete, the patient's legs would be taken out of the stirrups and laid on the table. She was covered in blankets and the table was cranked up so that her legs were higher than her head. When Linda returned to the lab after checking the catheter she would often announce to everyone, "This all depends on God. It's in the hands of God if they [the embryos] will stick." She would then turn to the now inverted patient and say, "There is a high chance you'll get pregnant but you don't know. If God helps us, all will go well." As each practitioner exited the room he or she kissed the patient on the cheek and told her and her husband, "God willing, you will be pregnant" or "We need to have faith." One morning, at another clinic, while holding a catheter in the prone patient's cervix, Dr. Quiroga turned to a visiting biologist and remarked, "Wouldn't it be great if everyone got pregnant?" Then he mentioned an American study of the hormone selectin, which in the future might allow them to understand and control implantation better. The biologist replied, "But for now only God can help us." Dr. Quiroga nodded in agreement. When he removed the catheter he said to the patient, "Felicitaciones. Que Dios nos ayude. No podemos hacer mas hasta la prueba."

(Congratulations. May God help us. We can't do anything more until the test.)<sup>14</sup>

Throughout my observations, God was invoked at all of these stages, but he was summoned most frequently at the moments surrounding the fertilization and the transfer. The preparation for the fertilization and transfer were pivotal moments in the IVF process. They signaled two instances when the clinicians, after preparing as best they could, ceded control of the gametes to the unknown. The gametes sat in dark, unseeable places and could not be manipulated. The eggs and sperm were put in a sealed incubator where they were not examined for a day. The embryos remained in the uterus unseen for two weeks of waiting, a period punctuated by frequent hormone injections and hormonal testing. This uncontrollability can be contrasted with other, more manageable stages, such as the stimulation, when follicles can be monitored by ultrasound through the patient's body every day. These moments where the lack of control is heightened are linked to God in a way that other moments of the process that we might expect to be sacred are not. For example, after the quality of embryos was checked, prayers or thanks to God were frequently offered. The embryos themselves, though, do not necessarily provoke such sentiment: after a transfer, when there are "extra" embryos, they are often dumped unceremoniously in the trash.

When I present this material to fellow North American scholars, someone usually asks, "Just how meaningful are these evocations of God?" Maybe, they suggest, we should think of these practices as rote and unconscious actions, like crossing one's self when walking by a church or regularly exclaiming "Dios Mio!" to signal dismay—acts that, in their minds, do not signify deep conviction. To respond to that suggestion I think it's most helpful to turn to Talal Asad's careful parsing of the genealogy of ritual. Asad makes a distinction between premodern Christian and modern Christian and secular understandings of ritual. The earlier view of rite in premodern Christian monasteries had to do with actively learned skills and instrumental behaviors that formulated connection between "outer behavior and inner motive" (Asad 1993: 58). This changed in the modern period as ritual came to be viewed as signifying behavior "classified separately from practical, that is technically effective behavior" (Asad 1993: 58). In premodern monasteries the liturgy or the routine ritual of mass was not separated out as a symbolic enactment of Christian faith, but was for monks, like copying manuscripts, a practical means to develop virtue (64).

Obviously, modern Ecuadorian IVF practitioners are not premodern European monks, but Asad's genealogy of ritual allows us to see that the commonplace anthropological analysis of ritual as symbol for something

else might not adequately match the experience of those we study. Thus, instead of questioning the depth of Ecuadorian IVF practitioners' conviction, we might imagine these Catholic practitioners as engaging in an integral and technical ritual. In this case the discipline of the ritual instills the virtue of self-oblation—the constant enactment of humility before God. During the most fraught moments of an IVF cycle, when the potential for life's creation hangs in the balance, these clinicians are performing a "divine service," by reminding themselves and others that they are *not* responsible for the creation of life. As we shall see below, these humbling acts are integral to an understanding of Ecuadorian religious expression and belief.

#### LATIN AMERICAN AND ECUADORIAN CATHOLICISM

In her description of baroque and enlightened Catholicism in Mexico, Pamela Voekel argues that similar tensions and shifts toward modern reform occurred throughout Latin America. In Ecuador, the internal contestations surrounding modernization projects came to be understood within the geographical division between the coastal, progressive, commercial class, rich off cacao, and the Sierrian, conservative, traditional, Catholic landholders in their struggles for power in the political arena.<sup>15</sup> But as in Mexico, the 19th-century coastal liberals who fought for church and state separation remained Catholic. No work that I know of has examined how these Ecuadorian liberals envisioned themselves as Catholics, but it seems that Voekel's model of enlightened Catholicism is an apt description for this group of elite merchant nation builders who were calling for modernizing reforms.

In the case of Ecuador, "traditional conservatives," or what I am calling baroque Catholics, have been positioned as premodern, but they cannot be written out of the modernization game either. Gabriel Garcia Moreno, president from 1861 to 1875 (with a nominal break from 1866 to 1869), born on the coast but schooled in the Sierra and Europe, envisioned the state as "a truly Catholic nation" sharing in "Catholic modernity" (Williams 2001). Moreno strengthened the ties between church and state, and institutionalized a series of modernizing projects such as a railroad construction and standardized national education under the auspices of the Church. During Moreno's terms in office, Catholicism became one of the requirements of citizenship, since Catholicism was the "only remaining bond" in a country "so divided by the interests and passions of parties, regions and races" (cited in Williams 2001). After Moreno's assassination, presidents oscillated between conservative and liberal until the coastal, anticlerical, liberal Eloy

Alfaro came to power and succeeded in permanently dismantling the ties of church and state in Ecuador, mandating civic marriage and wresting the keeping of vital records from church control. Alfaro's official program of separation remained in place even after his murder, which began a tumultuous civil war.

Church and state relations in Ecuador since then have at times been explosively contentious, and at present the official separation between the two is considered one of the more marked in Latin America (Aguilar-Monslave 1984). That said, Ecuador has also been described as "the most religiously conservative nation in the Andes, perhaps in all of Latin America" (Lane 2003: 92). Throughout my research I puzzled over these two possibly contradictory claims about Ecuador. Eventually I came to realize that neither of these images serves to describe Ecuador's religiosity as a whole or even regionally, given (1) the lack of regulative power the church has over the state in comparison with other Latin American nations, (2) the differences that Catholic expression and belief take across class and region, and, finally, (3) the urban, Ecuadorian antipathy to any hint of extremist expression, religious or otherwise. These three issues are also crucial to understanding the practice of IVF in Ecuador, where those involved in IVF are Catholics who imagine God on their side.

#### *Church and State in Ecuador*

Different religious styles and the varied involvement of the church with the state in particular Latin American countries have affected the way in which IVF is practiced locally.<sup>16</sup> The fact of Catholic condemnation has certainly been of interest in the predominantly Catholic nations of Latin America, particularly in those nations with thriving IVF industries. In several of these nations, where the Catholic Church has maintained a strong regulative presence, IVF has become publicly debated in terms of life. In Costa Rica, Argentina, and Chile, IVF is problematically seen to throw life into question. The clearest example is Costa Rica, where Catholic lawmakers have succeeded in dismantling the IVF industry by outlawing the practice. Costa Rica is now the only country in the world with such a ban. In Chile and Argentina, home to large IVF industries, IVF clinicians feel compelled to regulate themselves in order to conform to and appease the intertwined forces of church and state (Htun 2003).<sup>17</sup> In Chile, IVF doctors term two- to three-day old embryos "pre-embryos" to exempt them from legislative debates, and in Buenos Aires, some Catholic laboratory biologists freeze all extra embryos regardless of quality, out of respect for their "life potential."<sup>18</sup> These IVF practitioners are conducting themselves in such a way in

order to prevent IVF from becoming overly problematic in relation to the church/state, as it did in Costa Rica.

In Ecuador, on the other hand, IVF practitioners do almost nothing to ward off the regulative powers of church and state. Even though the Ecuadorian media reports on the advances of the local IVF industry with increased frequency, IVF has not entered the arena of public debate. How can we explain the differences that exist between Ecuador and Argentina, Chile, and Costa Rica in this regard? The contrast between baroque and enlightened Catholicism provides a useful model to understand these differences. In the latter three nations, both church and state have historically been more successful in implementing their agenda within state institutions. In fact, enlightened Catholicism in Latin America could be understood as the form of Catholicism that does a better job harnessing itself to and coconstituting the modern state.

While enlightened Catholicism has made some inroads in Ecuador, baroque Catholicism is still the predominant form of religious expression there. Baroque Catholicism as it is practiced in Ecuador has very little connection to the official face of Catholicism, and very few Ecuadorian Catholics have cultivated the internal subjugations required for enlightened Catholicism. This contributes, I believe, to the fact that IVF in Ecuador is, for the most part, noncontroversial. As I will describe later, IVF practitioners imagine themselves in implicit debate with the Church about IVF, but this debate is muted. Instead, the Ecuadorian media reports on IVF in almost unequivocally boosterish terms, "ignoring" the issue of life. IVF has not become a crisis or an affair. On the contrary, in these accounts it is taken as an unproblematic sign of modernity and progress (Bustamante 1989; Gomez 1991). Thus, in Ecuador, IVF clinicians make no pretense of conforming to the institutional framework of Vatican doctrine, as clinicians do in other Latin American countries. As described above, Ecuador is one of the nations with the most stringent official separations of church and state in Latin America, but "official" is often of little consequence in a nation where the state is largely ineffectual in regulating much of contemporary life, where marriage must be civil to be legal, but even public secular schools, hospitals, and civic buildings, as well as taxicabs, homes of all classes, and private office buildings, are filled with Catholic images and opportunities for Catholic expression.<sup>19</sup>

While there is quite a bit of press coverage of the local IVF industry and its advances, IVF is not 'seen' by the state at all. The recently passed Ecuadorian Child and Adolescent Civil Code formally states that "experiments, and medical and genetic manipulations are prohibited from the fertilization of the egg until birth" (Codigo De La Ninez y Adolescencia,

2003). This new law could theoretically prohibit practices such as embryo cryopreservation, but from interviews I conducted with both lawmakers and IVF practitioners, it appears that this code will not affect the IVF industry in any meaningful way. (Very little private medicine is regulated closely in Ecuador.) In fact, in 2003 when I did an interview with one of the principal lawyers who drafted this new legal code, it became clear that he knew little of the extent of the national IVF industry. I asked him how cryopreserved embryos would be interpreted under this new code, and he replied, "There is no embryo freezing in Ecuador." It would seem that he was not aware that embryo cryopreservation has been carried out in Ecuador since 1998. This absence of church or state regulation is central to a comparative understanding of IVF in Ecuador since social science perspectives on the transnational deployment of IVF in the United States, Britain, China, Egypt, Israel, and Greece have frequently focused on the official regulatory mechanisms of religious institutions and state powers (Cussins 1998; Franklin 1997; Handwerker 1995b; Inhorn 2003; Kahn 2000; Paxson 2004). The fact that in Ecuador, IVF policy is essentially left up to the discretion of practitioners and patients permits an examination of how noninstitutional norms shape practice. Ecuadorian IVF patients and practitioners in a sense are truly "moral pioneers" (Rapp 1999), within the novel social terrain that these technologies create.

### *Ecuadorian Religious Expression*

A common refrain heard in Ecuadorian scholarly and religious literature and in daily life concerns the shallowness of Ecuadorian Catholic piety. "Look how the churches are empty." "Look how hypocritical they are to use birth control." These "facts" are repeated not only by those who, like priests, are not satisfied by the level of institutional and popular support and power the Church maintains in Ecuador, but also by the atheist practitioners with whom I worked. Scholars from Weston Le Barre (Le Barre and Mason 1948) to Michael Taussig (1980) have used these same "facts" to indicate the Church's failure to effect internalized piety among Andean peoples. But as Lisa Madera (2002) points out in her dissertation on popular devotion in Ecuador, none of these denigrations or celebrations of the lack of "true" religiosity in Ecuador describes the palpable devotion of urban Ecuadorians, for whom it is common to make pilgrimages to Catholic shrines, but rare to attend Sunday mass.<sup>20</sup> In Ecuador, mass attendance is not a significant marker of Catholicism (although it might be a useful marker of an enlightened versus baroque style Catholic). Indeed, when I asked doctors and patients, or anyone for that matter, if they were religious,

the most common response was, "I'm Catholic. I'm not a fanatic, though. I don't go to Mass." But avoiding mass does not preclude a Catholic identity. Although there are very few studies of urban religiosity in Ecuador, one conducted in the early 1980s found that Ecuadorians, at least in the Northern Sierra, identified as *Cristianos* (Catholics) first, before race or class. Religious belief was employed as the sign of a true person (Stutzman 1981).

Rather than dismissing Ecuadorian religiosity as lacking depth, one may more productively understand it as predominantly baroque and based on personal exchange relations. While Voekel describes enlightened Catholicism as requiring the cultivation of the self-disciplined individual, Ecuadorian and probably much of Latin American baroque religiosity might be most accurately described as personal, therefore not requiring the same creation and oblation of an individual self. Many of the patients as well as the practitioners with whom I worked were enmeshed in personal exchanges with saints. One patient I knew had made a promise to the *Diviño Nino* (a recently popular version of the Christ child reputed to have his origins in Colombia) to make 50 shirts for sick, hospitalized babies in return for a pregnancy. She carried out this *promesa* at Christmastime, three weeks after she gave birth to her IVF baby.<sup>21</sup> Several other patient couples described to me how if God granted them a baby, then they would repay him with a church wedding. They had had a civil ceremony, but like many people with few economic resources, they had never had the money for a church wedding.

In Talal Asad's depiction of modern religious practice, he describes how in the 17th and 18th centuries Western European religion became a "new historical object anchored in personal experience expressible as belief statements dependent on private institutions and practiced in one's spare time" (1993: 207). Asad's characterization of religion is strikingly suited to middle-class, baroque Catholic, Ecuadorian heirs of Enlightenment thought, living in a nation where the official divide between church and state is more radical than in the United States. As Enlightenment subjects, Ecuadorians treat religiosity as personal and dependent on belief statements; however, they do not relegate it to their spare time. A few days before Christmas in 2002, after observing in the laboratory, I joined Dr. Padilla's staff at the clinic Novena.<sup>22</sup> Several practitioners and some patients gathered in a wide hallway as a nurse led that day's reading, which seemed extraordinarily appropriate for an IVF clinic since it told of the miracle of the Virgin Mary's asexual pregnancy. Afterward, as clinic aides served us snacks, Dr. Padilla turned to another clinic doctor and remarked how "beautiful and precious" the embryos had been at the transfer he had

performed the night before, concluding his story with the statement, "God willing, she will be pregnant." In Ecuador, God is thoroughly enmeshed within the work of the IVF clinic and not made to stand privately outside it.

### *Antifanaticism*

Although versions of personalistic, baroque Catholicism have been described in other parts of Latin America, one element of Ecuadorian Catholicism that I have not seen described elsewhere is the common Ecuadorian urban middle-class presentation of self in terms of antifanaticism. This moderate self is actively formulated within nonreligious matters as well. Once when I asked a friend if he was worried about the newly elected president being overthrown, he replied, "Don't worry. We are *not* a tropical people. We are not fanatics."<sup>23</sup> The phrase "We are not fanatics," or I am not a fanatic," is frequent in discussions of abortion, homosexuality, and politics, for example: "I don't believe in abortion but I'm not a fanatic. I understand some people have them, poor things." "I think it's wrong to be homosexual but I'm not a fanatic. My children know some of *los gays* and they might be accepted here someday. Just not now." In keeping with this presentation of "tolerance," the staff psychologist at one IVF clinic told me how a postoperative Ecuadorian transsexual who had been living in the Netherlands had come to them because she wanted to have a child through a surrogate mother. The psychologist said no, not because it was inherently wrong, but because "Ecuador is not ready to have this type of things." He asked the potential client, "Why don't you do this in Holland, a society much more open to these things?"

Besides the common refrain of "I'm not a fanatic, I don't go to mass," another way to differentiate oneself from fanaticism was the rhetorical use of Opus Dei in conversation. This semisecret, powerful Catholic organization has, or is rumored to have, made significant inroads in Ecuador. Labeling someone as Opus Dei functions as shorthand for fanatic, the kind of person you don't want to be. Opus Dei, with its emphasis on reinfusing daily life with spirituality, is similar to common Ecuadorian Catholicism as part of everyday activity, but not in its strict individual adherence to a fundamentalist reading of Church doctrine. Critique of Opus Dei, in other words, is a critique of the specter of effective and enlightened Church power. In addition, the antipathy that many Ecuadorians express toward an identity as a fanatic may reflect the generalized interaction between precontact modes of belief and Spanish Colonialism. As detailed by many anthropologists and historians, native Andeans were notably noncombative when it came to promoting cosmological visions of the world. While the Spanish

had a unitary vision of what should be believed, native and then Mestizo Andeans of the colonial period did not feel the need to assert that the cosmological order of their universe stood true for everyone (Salomon 1981).

Syncretic Catholicism across Latin America has been fodder for academic research and debate throughout much of the twentieth century, and the particular ability of Catholicism to absorb images and expression encountered through evangelism has been contrasted to the forms of Christianity that came afterward. But in these literatures little has been said about how religious syncretism and the disinterest in unified and singular models of the cosmos may have curtailed fanatical totalizing religious claims, making some Latin American religious expression mesh rather well with the modern curtailment of religious passion (Asad 1993: 205). In modern Ecuador religion is not cordoned off from daily life, but the strong antipathy to religious zeal controls religion's potential unruliness. From this point of view, no one should believe too fervently, no one should be fanatical. Ironically, then, in Ecuador the charge that going to church is fanatical signifies that it is the private, sober, bureaucratic, enlightened Catholic subject whose "religious zeal" for rules must be curtailed, while those who participate in baroque religious display understand themselves as tolerant and moderate.

#### MODERN CATHOLIC DILEMMAS

Throughout my fieldwork, practitioners, especially laboratory biologists, shared with me a litany of reasons for the rate of pregnancy success and failure at their particular clinic. Laboratory equipment (e.g., the quality of cultivation media, pipettes, incubators), types of patients (e.g., spates of older or younger patients), and natural disasters (after a nearby volcanic eruption, the ash covering Quito infiltrated the labs and was blamed for a month of bad results at several clinics) all commonly came into play in reckoning with good or bad outcomes. For most practitioners, God was part of this mix as well. While I would imagine many of these causal explanations to be common at IVF labs around the world, it was the unabashed but unreflexive insertion of a spiritual causality that struck me as noteworthy for moderns.

One morning Linda lamented the fact that most recent patients had not gotten pregnant. She reminded me of an embryo transfer that I had observed three weeks before. When Dr. Padilla pulled the catheter out from the patient's uterus, it had been covered with blood. My stomach lurched as

I saw Dr. Padilla and Linda exchange a look. I knew well that clinicians carefully maneuver the catheter precisely to avoid uterine bleeding. Linda reflected that in that particular case the blood might have ruined the woman's chances since:

Blood is invasive and damaging for embryos. For that case it's the only explanation we have because we are doing nothing different. Nothing! God is not giving me a hand. Lately he has forgotten me. When we transfer the embryos and I see that the embryos I transferred to this patient were good quality, and could give a pregnancy, and nevertheless it is not given, it's because unexpectedly God didn't want it.

In a similar vein, Dra. Leon told me, "There is no exact formula that says this embryo, yes, is going to give a pregnancy. I think that it depends on God."

Some of these practitioners' invocations of God stem from an implicit debate with the Catholic Church. Clinical practitioners are keenly aware of the fact that the Church finds IVF objectionable, and that this is something with which they as Catholics have to grapple. Their rebuttals revolved around two intertwining themes: (1) We are not playing God. We are only God's helpers; and (2) God gave us the ability to do this, so it must be OK. Both of these rebuttals focus on Church objections to the artificiality of IVF, and not to the charge that IVF exterminates life, an objection that both practitioners and patients and even many priests in Ecuador often overlooked. This may partly be due to the fact that for many Ecuadorians embryos do not necessarily signify life. Many practitioners had practiced responses to Church condemnation of IVF's artificiality. One clinician told me, "The Church thinks only God can create life and I agree. I'm not creating a life. I'm just giving a hormone. I'm not playing God." Another clinician argued:

God helps us in this .... All of science is thanks to him. If they 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."

Rocio, another biologist, had a similar approach to Church condemnation:

The church believes that we are trying to be God. But from my point of view I don't see it like this. I believe that I help the couple to complete a desire, to realize a dream. I have a friend who is a nun and she says to me that she is not in agreement. "It's like wanting to do what God does." Then I say to her that I am only a human that learns to do. We are helping, but no more. Because for example when I transfer the

embryos we have to wait twelve days to see if they implant or not. If then in this lapse of time these embryos implant and give a pregnancy it's because God gives us a hand, and said this couple deserves to have a baby. If the patient doesn't get pregnant it's one test more.

Dr. Madera's statement about God's presence in the laboratory was part of a larger comment made when he described to me his response to reporters when they ask about this issue:

Many times in interviews in radio and television they have asked me if in the laboratory you are not playing with life, playing God. And I have answered, "God is in the laboratory. We are nothing more than assistants. We are only putting our small grain of sand in to get results."

With these declarations, IVF practitioners countered the Church's claim that IVF distorts the proper relationship between God and humanity: "Only God, not man, can give life and take it away." In response, these clinicians positioned themselves in agreement with the Church: according to them, the ultimate authority over life rests in God's hands, not their own.<sup>24</sup> Through ritual enactments and declarations of faith they offer a counter-theological discourse about God's interventions. The practitioners themselves are only assistants. Their scientific workspace becomes God's Space—God's Laboratory.

By declaring their laboratories as God's domain, IVF practitioners are also positioning themselves on the baroque side of a long-standing dispute within the Catholic Church. In response to the Protestant Reformation and its doctrine of God's earthly transcendence, the Council of Trent (1545–63 which took place in what is now Italy) asserted the divine immanence of God on earth. Throughout the next several hundred years, this emphasis on God's earthly presence served as a means for Catholics to differentiate themselves from Protestants. Simultaneously, this earthly focus became somewhat problematic in the eyes of Church administration. The declaration of God's intervention in human affairs seemed to foster "the natural tendency" on the part of Catholic peasants "to blur the distinction between genuinely religious activity and superstition," causing Catholicism to appear "backwards" and "uneducated" (O'Connell 1986: 116). This quandary, involving the maintenance of a clear distinction between Protestant separation of God from earth and the Catholic belief in God's miraculous intervention on earth, while preventing the populist faithful from determining the public face of Catholicism, has been termed the "Tridentine dilemma" (O'Connell 1986). Since the early twentieth-century, Catholicism has been at work crafting an image, fully engaged with the enlightened,

scientific ethos of the day, that also maintains the possibility of divine immanence.

This balancing act manifested itself in my interviews with Catholic priests in Quito, who commonly denied that God's miraculous intervention could occur within territory reviled by the Church, "where doctors play God and recklessly dispose of life." When I asked priests why the Church is against IVF, they would frame the issue as one of artificiality, where IVF doctors, not God, manipulate life. Evident in most of my discussions with these priests was the tightrope walked by institutionalized Catholicism, which diminishes, but cannot completely extirpate, miraculous baroque displays of personal favors bestowed by God. Evident in my interviews with priests was an enlightened (and Enlightenment) Catholic emphasis on God's primary role as the creator of natural laws, not an entity with a material presence on earth. When I told one priest that IVF practitioners saw God's hand at work in IVF clinics, he denied the possibility of God's presence in IVF labs, instead identifying psychological forces, such as relaxation, as the real player in "miraculous" clinic results. Priests also explained that God does very occasionally intervene on earth, recounting stories of women's miraculous pregnancies after acts of Catholic devotion. One priest told me, "God doesn't break his own natural laws." Nevertheless, he had known one infertile woman who had become pregnant from praying on the miraculous bench at the convent of Santa Catalina. One of the few priests who did refer to embryo death as one of the problems with IVF told me dismissively that praying to God in an IVF clinic is like Colombian assassins praying before a kill, or a doctor praying before performing an abortion. These comments frame the stakes of this moral contest between IVF practitioners and the Catholic Church. Are IVF practitioners acting as false gods and killers, or are they God's helpers, as the practitioners claim? In their response to Ecuadorian IVF, priests must rein in baroque signs of personalistic Catholic devotion and adamantly critique these claims of God's favor within the context of an activity the Church condemns.

This contrast between IVF practitioners claiming God's intervention and priestly denial of this possibility enacts the centuries-old Tridentine dilemma, a debate that usually takes place between priests and peasants, not priests and scientists. Dr. Madera's jokes about the sex lives of priests and nuns I described at the beginning of this article are similar to the anticlerical humor circulated among Southern European peasants and used by them to challenge the authority of priests and Church hierarchy without rejecting Catholicism as a whole (Badone 1990). Like Southern European peasants, who object to what they see as rigid, Church-created boundaries between the sacred and the profane, Ecuadorian IVF practitioners are not preoccupied

with dividing the world into these oppositional spheres. What differs in this case, however, is that the Church officially vilifies these practitioners' livelihood, and that these practitioners are not operating from a position of social or educational inferiority to the priesthood.

As we have seen, besides jokes, another way Ecuadorian IVF practitioners dispute the Church's stance on IVF is through a matter-of-fact belief in God's participation in IVF. This version of the Tridentine dilemma is modern in that the tensions enact a boundary dispute between spiritual and material explanations (e.g., Is it God or is it psychology?), a quintessentially modern preoccupation. But to North American scientists and medical professionals, this debate between priests and practitioners of scientific medicine might appear as a "failure to embrace secularism and enter modernity," given that the terms do not presuppose a solely material and disenchanting scientific universe (Asad 2003: 10). In this case, however, this modern struggle is about religious legitimacy in what many have imagined to be a wholly material sphere. Even scholars like Bruno Latour (1993), who has done much to disrupt our received notions of disenchanting science, characterizes scientists as cleaved to the image of science as rational, disciplined, and, above all, purified of the spiritual. But for these simultaneously Enlightenment and baroque Ecuadorian IVF practitioners, there is nothing remarkable about the evocation of the divine in a high-tech biomedical setting, suggesting a different construction of the relationship between science and religion than is often supposed in theories of modernity. When practitioners of Ecuadorian IVF make appeals to God and the Virgin for the fertilization of eggs retrieved during IVF, they are operating within a modern project where God's intervention does not contradict their identity as Catholics or as practitioners of modern scientific medicine.

Claims of God's favor make these practitioners somewhat unusual moderns in yet another way. One of the key facets of modernity as described by Weber (1991) is the creation of rationalized, impersonal bureaucracy. The God of both mainstream Protestants and enlightened Catholics is bureaucratic. He does not break his own laws, at least almost never. Baroque proclamations of God's presence in the laboratory, God's direct effect on clinical pregnancy rates, and claims of personal exceptionalism are not bureaucratic or rationalized. These miracles are signs of personal exchanges with God, which provide certainty, especially in a site where there is little public debate about the ethical dilemmas posed by IVF. These Ecuadorian practitioners seek and flaunt God's favor in order to contradict Church condemnation of IVF.

## CONCLUSION

There are two important distinctions to make between IVF in Ecuador and IVF as presented in some of the other articles in this issue. Ecuadorian IVF is not about making Catholic babies, as IVF is about making Muslim babies in Egypt and Lebanon, for instance (see Inhorn, this issue). An Ecuadorian IVF baby is not a sign of a religious-nationalist project. Although Catholicism is the predominant religious identity in Ecuador, it is more aptly characterized as a personal identity, not an institutional affiliation. In addition, when a Hindu or Muslim IVF doctor evokes the divine in the laboratory, he might be criticizing Western medicine as much as making a cosmological claim (see Bharadwaj, this issue), while an Ecuadorian doctor making the same statement is doing no such thing. Instead, IVF clinicians in Ecuador invoke God partially as a means to challenge Church condemnation of their practice. To say that God is in the laboratory is not an oppositional or subaltern challenge to the material tenets of biomedicine but, instead, a challenge to Catholic doxa. These appeals to God are not made to serve in contestations about which domain belongs inside a laboratory. Both science and spirit coexist in this realm. There is a need for clinicians to assert God's presence in the laboratory in relation to Church disapproval, but there is no need to cordon off the material from the spiritual, the profane from the sacred. Modern boundary tensions are at work in Ecuador, not necessarily over the primacy of science or religion, but over the proper boundaries of enchantment.

In Ecuador, a nation-state fully engaged in a modern project, religion has not been relegated to the private sphere. Although Ecuadorian IVF practitioners are by no accounts pious, everyday life, even everyday scientific life, is suffused with religiosity. Modern Ecuadorians are disinterested in the full embrace of secularity even in settings that are avowedly secular elsewhere. These practitioners of scientific biomedicine constantly invoke God in their models for clinical affairs and do not position themselves in opposition to the "West." Instead they are self-consciously styling themselves on the "North." As these Ecuadorian elite proponents of technomedicine demonstrate, modernity is not always about the "formation of the secular" or the banishment of enchantment from the realm of natural law.

The examination of bioscience around the world can destabilize conventional assumptions of secularity, prompting us to ask: In what other sites or nations does religiosity play a role in the laboratories of modern science and biomedicine? To be clear, this is not an attempt to expose the "irrational, religious underbelly" of science and biomedicine; instead, it is a call to explore how the common Western and Northern proclamation of God's

banishment from the laboratory is not the only way that bioscientific workers can understand and arrange the material and spiritual world around them. Modern Ecuadorians have their own specific moral landscape where religious evocation does not have to be separated from scientific medical practice. This example can aid scholars working elsewhere to reexamine long-standing assumptions about the automatic separation of religious and material rationalities in scientific settings. The need to explain why God resides in Ecuadorian IVF laboratories should prompt the parallel need to defamiliarize the declared disenchantment of North American or European labs. However, unlike the social scientists working in Europe and North America, who have to look a little deeper in order to ascertain how religious expression constitutes scientific rationality (Franklin 1995; Haraway 1997; Helmreich 1998), I had a much easier task. In Ecuadorian IVF, God has been appointed the director of laboratory life.

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#### NOTES

1. Birth control pills are a crucial component of the IVF cycle. They are used to control the timing of menstruation.
2. The bench belonged to Sister Catalina de Jesus Maria Herrera. According to a Sister who showed me the bench, about 20 years ago the sister of a resident nun visited. She sat on the bench crying because she couldn't get pregnant. The nun, her sister, suggested she pray to Sister Catalina, which she did. Soon afterward her doctor told her she was pregnant. This same woman went on to have six children. Almost 100 women have come and prayed to Catalina on the bench and gotten pregnant.

3. Later that evening I made the same observation, about a Catholic site used by IVF specialists, to another doctor. Without missing a beat he joked, "Maybe we can get some egg donors here."

4. Although I was playing my part in a conventional script that takes place between Ecuadorians and North Americans, in this particular case I was *not* making a specific statement about Catholicism in Ecuador. I was raised Catholic in the United States and know well that "the rules," especially around reproductive issues like birth control, premarital sex, and sterilization, do not have such a pervasive hold in the United States either.

5. It is estimated that 85 to 90 percent of Ecuadorians consider themselves Catholic. Ninety percent of the patients I worked with were Catholic, and among the 20 practitioners with whom I worked, all except two (who are atheists) identified themselves as Catholic. The evangelization of Latin America has become one of the most pressing issues in religious studies of Latin America today (Cahn 2003; Dow and Sandstrom 2001; Muratorio 1981), given that evangelical Protestantism has made large inroads all over Latin America. Nevertheless, in my work only 10 percent of the patients, and none of the practitioners, identified themselves as Protestant or Evangelical.

6. For example, the geneticist at Dr. Madera's clinic also teaches at two local universities and consults on international public health projects. A laboratory biologist at another clinic works in the mornings as an IVF biologist "making life" and in the afternoons at the local police hospital as a pathologist "dissecting death."

7. Thanks to Lucinda Ramberg for this term.

8. Scholars who work in Southern Europe, where the Catholic Church remained more entrenched, document a similar set of contestations about the proper religious subject. In Iberia the post-Vatican II church championed an "individual relationship" to God that requires "interior subjectification" to access "profound realities," as they dismiss the "collective," "mechanical," and "shallow" forms of folk religious expression (Behar 1990, see also Badone 1990, Brettell 1990, and Wolf 1984).

9. As many scholars have shown, the scientific endeavor was partially shaped through the colonial encounter, where Europe became home to science and material truths, while the colonized world became home to falsehood and superstition (Hess 1995; Jacob 1994).

10. A local medical historian and physician echoed these sentiments when he told me dismissively how doctors in Ecuador use God to justify their own errors and deficiencies. "Doctors say, 'Si dios quiere' [If God wants it] for everything, when really they should be practicing better asepsis."

11. One afternoon I observed Antonia, a laboratory biologist, describing IVF to a new patient. Like the IVF doctor she works for, she calls herself an atheist. Antonia explained that two of the factors that determine the outcome of an IVF cycle are the woman's endometrium and the quality of the embryos. "Both are very important." She added, "But the rest is not up to us. We also need the blessing of God." Later I asked Antonia why, as an atheist, she offered this type of explanation. She lowered her voice and said, "I don't advertise that to patients." She then reminded me of the image of the Madonna and Child in the clinic operating room that hangs above patients' heads during aspirations. These images help the patients psychologically, she explained. Another doctor, who personally did not think God played a part in pregnancy outcomes, told me that he suggests that patients should trust in God while waiting for their pregnancy test. This baroque mode of interacting with patients offers a type of comfort not available to mainstream Protestants or those enlightened Catholics who are not willing to change their mode of interaction for patients. As we shall see, for most Ecuadorian IVF practitioners, invocations of

God in the laboratory, in the operating room, and with patients act as clear rebuttal to the Vatican's censure of IVF.

12. In Latin America and North America most IVF laboratory biologists are women.

13. I am limiting this description to standard IVF. The procedure for intracytoplasmic sperm injection (ICSI) entails other steps that might allow the practitioner more sense of control over the process.

14. Ecuadorian infertility clinics are all privately operated and serve a predominantly middle-class clientele. The care and personal attention lavished on patients was unfamiliar to me, accustomed as I am to managed care in the United States. The Ecuadorian public health "system," on the other hand, is disorganized, overworked, and understaffed, one of the reasons that many poor and working-class Ecuadorians are willing to spend large amounts of their own resources on private healers—biomedical, alternative, or indigenous (Crandon-Malamud 1991; Koss-Chioino et al. 2003). I found remarkable the level of access patients in private clinics had to their doctors, including long appointments and doctors' home and mobile telephone numbers.

15. The Church historically held a much greater percentage of land in the Sierra and ran far fewer churches and schools on the lowland coast. In addition, clergy were generally recruited among the sons of the landholding Sierran elite and thus had a much stronger hold in the Sierra.

16. See Lehmann 2002 for a discussion of differences in Latin American religiosity, especially between Mexico and Brazil.

17. Due to powerful Church influence Chile, until 2003, was the only nation in the world besides Corsica where divorce was illegal (Htun 2003).

18. I heard of this practice from a colleague, Kelly Raspberry, an anthropologist who conducted research at IVF clinics in Buenos Aires. Our conversations about the differences in laboratory practices and styles of religious expression in Argentina and Ecuador helped me articulate the fundamental question of religious conservatism and Church/State separation in Ecuador. Raspberry had never witnessed acts of baroque Catholic devotion in Buenos Aires IVF laboratories or in daily life, quotidian practices that were commonplace in my own fieldwork. But unlike the Argentine laboratory biologists, some Ecuadorian biologists would rather throw out embryos than cryopreserve them, given that embryos are not necessarily equated with human life in Ecuador. In essence, Raspberry asked me, "If they are so Catholic how can they throw out embryos?" (I would add, "Or practice IVF at all?") For my part I wanted to know why the Argentine practitioners, whose lives were much less steeped in everyday popular Catholic religiosity, seemed to take the Catholic Church's positions on IVF so much more seriously than Ecuadorian practitioners.

19. Nevertheless there is an elaborate, baroque even, system of bureaucracy and state apparatus in place that shapes daily life in Ecuador.

20. I participated in one of these arduous, overnight, 25-kilometer pilgrimages in November of 2002. This pilgrimage to the Virgin of El Quinche annually draws 100,000 people from all over Ecuador, a substantial number of people in a country of less than 12 million. When I told people I had made the pilgrimage, I learned that a majority of them had done it themselves at least once. I was especially struck by the number of teenagers walking. Many teenage boys carried enormous boom boxes, which weighed down their shoulders and seemed to serve as updated versions of the whips and chains of self-flagellants. Many walk to fulfill a promise to the Virgin in exchange for services rendered or to dissipate sins accrued in the last year. Calling this demonstration of faith shallow, hypocritical, or false is a grave mischaracterization.

21. This particular woman was one of the poorest IVF patients I encountered. Poorer patients were more likely to be involved with saints, although many middle-class patients were involved in exchange relations with saints as well. As Voekel (2002) points out, even though the battles were fierce between elite *enlightened* and elite *baroque* Catholics in the eighteenth century, most people, especially the popular classes, were and have remained *baroque* in their religious expression in Mexico.

22. A novena is a nine-day private or public devotion to obtain special grace. The Christmas novena is a novena of preparation and in Ecuador involves meeting in groups for prayer and the reading of the Christmas story in private homes, school, or workplaces.

23. I posed this question because the previous several presidents had been overthrown, although bloodlessly.

24. I was struck by how the necessity for Ecuadorian practitioners to claim God's intervention at their clinics made for a certain rhetorical humility that is uncharacteristic of the IVF doctors I have encountered in the United States.

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