

# Extra embryos:

## The ethics of cryopreservation in Ecuador and elsewhere

### ABSTRACT

Through ethnographic comparison with Ecuador, I localize North American and European ethical debates about embryos. In Ecuador, some in vitro fertilization (IVF) practitioners and patients do whatever they can to preserve the life of embryos through donation or cryopreservation. For this group, embryos are embroiled in debates about life, as they commonly are in North America. However, other Ecuadorians do not view embryos through debates about life. Instead, these IVF practitioners and patients let embryos die rather than freeze them, to regulate the legitimate bounds of kin relations. These contrasting models of life ethics and kin ethics illuminate ideologies of religion, kinship, and personhood in Ecuador. In addition, this comparison demonstrates that the location of embryos in a framework of kinship prevents their circulation and exchange, whereas the North American and European debates about the human life of embryos allow for their continued circulation in the globalized reproductive marketplace.

[*biotechnology, life, ethics, kinship, personhood, comparison, Latin America, North America*]

On May 25, 2005, the front page of the *New York Times* carried a picture of U.S. President George W. Bush at a press conference, holding a baby born “as a result of one couple’s donation of frozen embryos to another” (Stolberg 2005:1). The donation was arranged by a Christian “adoption” agency.<sup>1</sup> At the conference, surrounded by many other children born from frozen embryo adoption, Bush stated that “the children here today remind us that there is no such thing as a spare embryo” (Stolberg 2005:1). Bush held the press conference as a preemptive strike against a congressional push to expand federal financing of embryonic stem cell research, research that Bush, along with many other conservative Christians, claims destroys the human lives of embryos. Despite Bush’s efforts, the bill passed, although without enough votes to prevent a presidential veto. The reporting on this event, which posed “life” as contested, assembles the elements of one half of this article. In this scenario the ethical debate about the proper use of embryos boils down to the status of embryos. Are they human life or not?

In this article, I am concerned both with these debates over the life of embryos as well as a very different approach to embryos that I observed in my research on Ecuadorian in vitro fertilization (IVF). This other approach situates embryos within a framework of kinship, not life. These are ethical frames, ethical because they involve issues of “why and how to think” about “what is good in life” (Rabinow 2003:3). By juxtaposing these two ethical approaches, which I call “life ethics” and “kin ethics,” an unexpected story emerges about what the discourse of life ethics makes possible. Posing embryos as kin, which many IVF patients and practitioners in Ecuador do, constricts the possibility of embryo circulation, while debating their life makes their circulation possible. At the same press conference Bush declared that “every embryo is unique and genetically complete . . . these lives are *not raw material* to be exploited, but gifts” (Stolberg 2005:1, emphasis added). I argue that, on the contrary, it is precisely contemporary discourses of life that contribute to the transformation of entities like embryos into valuable,

and anonymous, raw materials, some of the essential building blocks in the global biotechnology industry.

In the last 20 years the development of new reproductive technologies and practices, such as IVF, has prompted an avalanche of philosophical and ethical debates in North America and Europe, debates that often center on the issue of life itself. Anthropologists have also turned their attentions to the effects of these technologies and the social arrangements they entail (Becker 2000; Franklin 1997; Kahn 2000; Modell 1989; Ragoné 1996; Thompson 2005).<sup>2</sup>

For the most part, however, these studies have focused on Europe and the United States, reinscribing the notion of the “West and the rest.” For example, in the introduction to their seminal anthology, *Conceiving the New World Order*, Faye D. Ginsburg and Rayna Rapp wrote that although “women in Europe, the United States and Australia can get IVF treatments” to alleviate their infertility, Third World women “may turn instead to religion, popular remedies, and fostering or adoption” (1995:7). More recently, anthropologists and other social scientists of science and technology have come to recognize that this characterization of a stark technological divide between North and South, East and West is not accurate, even for those on the economic margins (see Anderson and Hecht 2002; Arnold 2000; Choudhuri 1985; Cueto 1988; Das and Dasgupta 2000; Hayden 2003; Lock 2002).<sup>3</sup> This newer scholarship reflects the growing awareness of how central science and technology are (esp. biomedical technologies) to the lives of people throughout the globe (Bharadwaj 2002; Georges 1996; Handwerker 1995; Inhorn 2003; Pashigian 2002; Paxson 2004).<sup>4</sup>

We still know very little, however, about the ethical stakes involved in assisted conception outside of Europe and North America. Although some institutions, such as the Catholic Church, claim they have resolved the question of the beginnings of life within the human embryo, a long line of comparative anthropological writings has shown that pre-occupations with the beginnings and ends of life are more variable cross-culturally than the mostly Eurocentric field of bioethics supposes (Franklin and Lock 2003; Kaufman and Morgan 2005; Morgan 1989). Do reproductive technologies like IVF universally put life in question, or might they prompt other sorts of quandaries not solely driven by concerns with the preservation of life? To map the distinctions between some of the ethical discourses surrounding embryos, for this article I focus on the technique of embryo cryopreservation. What I am proposing is that the specificity of Ecuadorian approaches to freezing embryos demonstrates that embryos are not universally embroiled in the politics of life. The cryopreservation of embryos is not “automatic” in Ecuador, as it appears to be in the United States and Europe, and prompts the question: Why is it that for those in certain Euro-American locales the creation of frozen embryos is natural and their death is contentious whereas the inverse is true for some Ecuadorians, for whom it is their

creation, not their death, that makes frozen embryos so problematic?

### IVF, life, and dignity

This article is based on an ongoing engagement with Ecuadorian IVF since 2000. In 2002–03 I carried out a year of ethnographic research in seven of Ecuador’s nine private IVF clinics, all located in either Quito or Guayaquil.<sup>5</sup> Although the mechanics of IVF are roughly the same country by country, there are key differences in the practice of IVF between nations.<sup>6</sup> For instance, the optimal number of eggs retrieved from a woman undergoing an IVF cycle varies with policies of country and clinic, depending on costs, drug protocols, the local health care system, and the existence, or not, of regulatory institutions. IVF, which might be seen by some as an “immutable mobile,” an entity that can be moved without a change of meaning (Latour 1988), is very mutable, indeed. Comparing the problems, debates, and anxieties that surface (or do not) over new technological practices and assemblages in different sites “provincializes” (Chakrabarty 2000) scientific and ethical norms, although of course some of these norms are more dominant globally. It was through observation in Ecuadorian IVF in which I examined how preexisting cultural forms impact clinical practice that the specificity of North American embryo debates emerged.

In regards to IVF in Ecuador, one cultural form involved the Catholic Church and local Ecuadorian Catholicism. Church condemnation of IVF derives primarily from the fact that the research, development, and practice of IVF involved, and can still involve, the destruction of human embryos, which, like abortion, is construed as the destruction of human life (Ratzinger 1987). In Ecuador, most people say they are against abortion, in line with their identity as Catholics. But when one looks at the way patients and doctors characterize their actions around the technology of cryopreservation, a more complicated story about the status of embryos becomes apparent. In Ecuador, some practitioners and patients would rather discard extra embryos than freeze them. These anxieties about freezing have less to do with the status of embryos as human life as most commonly framed within Euro-American life debates. For these patients, what mattered most was that embryos stayed within the family’s purview and were not abandoned while the family moved on in time without them or abandoned to someone unknown, who might be of a different race or class. Thus, for some Ecuadorians, throwing out embryos did not necessarily constitute abortion. Embryos were conceptualized as “family members” who required protection from temporal discontinuity and uncontrolled circulation beyond family boundaries, not as “life” that must be preserved. As I shall demonstrate, kin ethics are not limited to Ecuador but can be found in the ethnographic record of IVF throughout the world, especially in sites in which non-Christian religious

traditions prevail. What is perhaps most striking about the existence of kin ethics in Ecuador is that the Catholic Church has not successfully enrolled all Catholic Ecuadorians into the contemporary life debate. For those who were hesitant to freeze embryos, the need to establish kinship boundaries loomed larger than life. Life, as so many social scientists influenced by the work of Michel Foucault have demonstrated, is a “contingent concept” (Kaufman 2005).

In his ruminations on modern forms of power, Foucault declared that since the classical age power has become positive, in that it is capable of managing life. Since then, states act primarily in the name of life, even while waging war (Foucault 1990, 2003). This valuation of human life is fully enmeshed with discourses of human dignity, which Immanuel Kant assigned to rational beings that exist above value (Rabinow 1999). Nonrational humans, those who would fit into the current categories of the brain dead, mentally ill, or the unborn, would have been thought by Kant to lack dignity and theoretically could have been exchanged. This limiting of dignity to the rational was radically altered with the atrocities of WWII. The body, or *bare life*, a term popularized by Giorgio Agamben (1998), became the receptacle of human dignity, because to deny the dignity of the “husks of men,” left mindless and shattered by the camps, would have been “to accept the verdict of the SS and to repeat their gesture” (Agamben 2000:56).

Now, again, dignity is undergoing transformation, as the equation of the body with dignity beyond value has become increasingly problematic. “What had been relatively stabilized in the period following WWII in Western countries, as the body, society, and ethics and their relations are today, again, being remade and . . . functioned desegregated” (Rabinow 1999:12). Science and medicine have made new forms of human life possible while at the same time expanding the potential to harness these new forms for economic gain, alarming the many champions of human dignity. First, with organ donation and, then, assisted reproductive technology and genomics, new body parts have become alienable and valued. Thus, in certain parts of the globe battles rage about whether the brain-dead, fetuses, and embryos, although perhaps lacking in subjectivity, should be treated with the “dignity” that all human life is argued to deserve.

This distinction between value and dignity is very much alive in the Catholic Church’s, and conservative Christian, pronouncements about contemporary human life. Although the Catholic Church continues to oppose IVF and its related technologies, it is very important to note that the Catholic Church remains one of the few voices of dissent against IVF itself. Despite their call for embryo adoption to save life, neither Bush nor the vast majorities of Christian groups are calling for the end to the enormous, private, and unregulated IVF industry in the United States, despite the fact that the process inherently destroys embryos. The life debates they engage in do not challenge the existence of IVF, and it

is the IVF industry that produces these extra embryos for circulation (Cooperman 2005).

My comparison of different ethical frameworks surrounding embryos demonstrates how debates about the human life and dignity make the circulation, transfer, and exchange of embryos possible and valuable, as well as dignified. If embryos are human life, they can be gifted or circulated through embryo adoption as Bush advocated. If embryos are not human life, they can be donated or circulated for applications within the biotech industry, usually involving stem cell research. Within these universalizing debates about life, embryos are stripped of all social ties and are made valuable either way, even though they are often spoken of in dignified terms, using the language of the gift (Mauss 1990; Simmel 1990). It is this shared “language of contention” (Roseberry 1993): Are they human life or not? Are they valuable or dignified? that structures and limits the terms of this debate. Discourses about the dignity of life have effectively made embryos biovaluable, a circumstance far from what the explicit distinction between value and dignity would predict.<sup>7</sup>

### Global and local embryos

Toward the end of my field research, a widely reported story in the international media prompted me to take a closer look at what *embryo* means in Ecuador. A survey conducted by the American Society for Assisted Reproductive Technology found that there are over 400,000 frozen embryos being held in cryopreservation storage tanks in the United States (Wade 2003). In the news stories this number was made to contrast with the holdings of most countries in Europe, whose IVF industries are regulated by state ministries. For example, Britain’s clinics were estimated to have 52,000, and Spain’s clinics 40,000. The difference in the quantity of frozen embryos in different nations was characterized in these press reports as the by-product of a more strictly regulated IVF industry in Western Europe than in the United States, although there was no mention of overall population differences between the United States and countries in Western Europe that could partially account for differences in the quantity of frozen embryos.<sup>8</sup> The stories implied that the consequences of the lack of regulation are an (over)abundance of cryopreserved embryos. However, from where I was positioned in Ecuadorian IVF clinics, this narrative of regulative lack looked tenuous at best. In Ecuador, where the IVF industry is even less regulated than in the United States, many practitioners avoided cryopreservation, resulting in a very low number of cryopreserved embryos in Ecuador. The regulative powers of church and state did not exert control or influence over the types of biopolitical life-and-death scenarios that we might imagine occur regularly in IVF clinics, but lack of regulative control cannot account for the low rate of embryo cryopreservation in Ecuador. Instead, when it comes

to embryo freezing in Ecuador, differing ideologies of religion, kinship, and personhood have the power to shape and restrict practice even without formal regulation.<sup>9</sup>

But what is an embryo? For this article I have taken my cue from the IVF practitioners in Ecuador who call postfertilization, two-to-eight-celled masses “embryos.” However, it is important to note some of the general historical and political ramifications of using this term. Currently in North America and Western Europe, embryos invoke “life” in the popular and scientific imagination (Franklin and Roberts 2001). In the United States, embryos are almost always connected to the abortion debates of the last 30 years, but this has not always been the case. Throughout the formation of embryology as a profession, the border zone between embryo and fetus remained indistinct and in the early 20th century embryos were made to speak to debates concerning evolutionary approaches to race and the human–nonhuman divide, not to the question of life’s beginnings as they are today (Morgan 2003).

Within IVF clinics, the slippages between the earlier border between a fertilized egg and an embryo is more at issue than the transition from embryo to fetus. I became intrigued with this slippage at a Pan–Latin America conference for reproductive medicine. A Chilean infertility specialist explained to me that in Chile clinicians call fertilized eggs “pre-embryos” to be allowed to practice IVF in the context of the Catholic Church’s strong influence on state policy. Chilean practitioners, it seems, have taken full advantage of the unfixed status of the embryo in language. The term *embryo* has generally meant the period between conception and 8 weeks of gestation; however, the term *pre-embryo* is used by the American College of Obstetrics and Gynecology (ACOG) in defining the early fertilized mass of cells. ACOG calls the 1-celled entity formed at fertilization a “zygote.” From day 2 to day 15, the mass is called a “pre-embryo,” divided into the stages of blastomere, morula, and blastocyst. After implantation, at day 15 or 16, when differentiation has passed the point of twinning, the cell mass is then called an “embryo” (ACOG 2004).<sup>10</sup> ACOG’s definitions of these multicelled masses do not prevent most of those involved in the IVF industry in the United States and Europe, as well as Ecuador, from using the term *embryo* for any cell mass after fertilization. In IVF clinics in Ecuador, practitioners would occasionally call these cell masses “blastomeres,” but most commonly they would call these masses “embryos.” Thus, cryopreservation, which takes place when the mass has reached 4 to 8 cells, is generally understood and presented as “the freezing of embryos.”

Besides abortion politics, there are other motives in calling these entities “embryos.” The IVF industry is predicated on the need for people to seek children through these expensive procedures that have relatively low rates of success. The embryo, unlike blastomere or morula, at least in North America and Europe, has become synonymous with early

human life, partly because of the emergence of IVF itself, allowing IVF practitioners and patients to envision these externally manipulated cells as “babies.” Doubling back to abortion politics, the representation of these cells as babies makes it possible for right-to-life groups in the United States to call IVF clinics “orphanages,” in which Bush recommends that couples be matched with orphaned embryos.

There are a few things to keep in mind to contextualize the status of embryos in Ecuador. In Sara Franklin and Celia Roberts’s article “The Social Life of the Embryo,” they describe the embryo in contemporary Britain as a “work object . . . that exists in the midst of complex legal, technical and temporal requirements” (Franklin and Roberts 2001:7). Their description of the British embryo offers a productive contrast to Ecuador, in which embryos are just beginning to be put to “work.” In Ecuador, as I will demonstrate, the temporality of embryos is certainly at issue in distinguishing between life and kin ethics, but the legal and technical context of embryos remains very much in formation. At this point in Ecuador embryos are not truly legal entities. Two sentences near the beginning of the newly passed Ecuadorian Adolescent and Child Civil Code state: “Boys and girls and adolescents have the right to life from their conception. . . . Experiments, and medical and genetic manipulations are prohibited from the fertilization of the egg until birth” (Congreso Nacional del Ecuador 2003:3).

Some of the common tertiary techniques of an IVF cycle, most particularly the process of embryo cryopreservation, could be interpreted as medical manipulation after fertilization. Up until this point, at least, no Ecuadorian lawmaker or state institution has ever intervened or tried to regulate IVF clinics, so that currently Ecuadorian IVF practitioners determine the strictures of their practice without any state surveillance or oversight.

Although embryos are technical entities for IVF practitioners, in general, embryo literacy among even middle-class Ecuadorian patients was not high.<sup>11</sup> Sometimes when referring to “embryos,” patients would call these same entities “eggs,” instead of “embryos.” I was with many Ecuadorian couples when they saw their embryos for the first time. This most often occurred while a woman was lying prone on an operating table, legs in stirrups, waiting to receive the embryos. Her husband would be at her side, both of them craning their necks to see the video monitor through a small window that opened into the laboratory.<sup>12</sup> Because of patient unfamiliarity with the visual language of the embryo, the nurses would teach them how to see an embryo, often prompting them with the instructions: “Look. It’s like a rose in black and white.” Practitioners would tell patients that the embryos they had seen were their potential babies, or sometimes they personified them further by calling them *guaguas*, a popular Quichua endearment for children.<sup>13</sup> But, as I learned, even though embryos were imagined as children, this naming did not necessarily invest these entities

with the capacity to provoke ethical concern about their death.

### Extra embryos

In addition to the word *embryo*, an understanding of cryopreservation must also entail a discussion of the term *extra embryos*, or what Bush called “spare embryos.” If there are embryos left over after transfer, they are “extra.” As we shall see, in Ecuador the existence of extra embryos can cause concern or relief. Technically, IVF practitioners can retrieve anywhere from 1 to 40 eggs in a single cycle. In Ecuadorian clinics, practitioners usually aspirated between 3 and 10 eggs, the lower side of possible. This number varied for a variety of reasons. The amount of money the patient had to spend could determine the amount of hormones they were given, thus affecting the number of follicles that produced eggs. Usually 60 to 90 percent of the aspirated eggs fertilized and became embryos. The issue of how many embryos to transfer back to the patient and what to do with those that are not transferred are both subject to norms determined by local policies of country and clinic. In Ecuador, practitioners usually transferred 2–4 embryos into their patients, although there could be up to 16 embryos created in a single IVF cycle. The transfer of a limited number of embryos into a woman’s body produces extra embryos, those left out of body, wholly new objects brought into existence through the technology of IVF, or what Sarah Franklin calls “new biologicals” (Franklin 2001:30). In about 60 percent of the IVF cycles I witnessed in Ecuador, there was at least one embryo left over after transfer; thus, 60 percent of the time there were extra embryos. These embryos could either be immediately transferred to another patient’s uterus (if it was hormonally prepared in advance), frozen for storage, disposed of, or used for study, although the latter is not common in Ecuador, in which little investigative research is conducted.

Freezing takes about three to four hours. The biologist first gradually brings the embryos to a low temperature with liquid nitrogen. When the embryos are cold enough, the biologist puts the embryos in pipettes that are then stored in liquid nitrogen tanks.<sup>14</sup> The three Ecuadorian clinics that had cryopreservation facilities charged patients \$800 to freeze embryos and about the same to defrost them. They also charged about \$200 a year to maintain their embryos, but in the cases in which patients had stopped paying this fee, the practitioners did not defrost embryos to dispose of them. The freezing and thawing processes can damage embryos, especially poor-quality ones. Potentially, the embryos will not survive the thawing process, although this was not of primary concern for most Ecuadorian practitioners and patients.<sup>15</sup> In Ecuador, neither practitioners nor patients considered poor-quality embryos to be worthy of mention, or cryopreservation. These *feo* (ugly) embryos were not considered “extra,” which diverges from the Catholic Church’s

pronouncements on the matter, in which all embryos are human life regardless of attractiveness.<sup>16</sup>

Recently, church spokespeople have taken a stance against the cryopreservation of embryos, in addition to IVF. “The horror of spare embryos” has been deemed an affront to human dignity, “an abusive situation against those lives, which can be compared to therapeutic cruelty” (Zenit 2003a). However, neither Pope Benedict nor Pope John Paul II before him made magisterial statements about cryopreservation, and within the church there are debates about these “unethically” produced humans. In Spain, the local episcopal conference has recommended the unfreezing of embryos to let them “die in peace” (Zenit 2003a) whereas other church theologians advocate adoption (Zenit 2003b, 2005).

### Region, religion, relatedness

In Ecuador’s infertility clinics, it was evident that church mandates to preserve human embryonic life informed ethical action on the part of many patients and practitioners. However, the understanding of the embryo was not unitary throughout the nation’s clinics, and IVF participants’ reactions to cryopreservation were formed within complex historic, regional differences between the sierra and the coast. At the time of my research, there were seven IVF clinics in Quito (in the Andean Sierra) and two clinics in Guayaquil, a commercial port and the nation’s largest city. The richly imagined and elaborated historic divisions between these two cities manifested in the practices and ethics of practitioners and patients with regard to embryos. Quito is the older city of the two, founded on an important Incan administrative and trading center in the sierra highlands, and marked, since the colonial period, by its relative inaccessibility to the coast and other trade thoroughfares. Today, Quito remains Ecuador’s administrative center and capital of the country. The humid, lowland port city of Guayaquil, located on the Guayas River, near the southern coast, was founded to serve Ecuador in the Pacific trade and is the more commercial and prosperous of the two cities. The ideological differences between the two cities coalesced in the 19th century with economic and political clashes between the coastal, progressive, commercial class, proponents of open markets and extended suffrage, and the conservative, royalist, traditionally Catholic landholders in the sierra (Clark 2002; Kasza 1980; Larson 2004).<sup>17</sup>

I spent the majority of my early fieldwork in the Quiteño clinics and became accustomed to the fact that the practitioners I observed were generally hesitant to freeze embryos even when they had the technical means to do so. Patients I interviewed in Quiteño clinics (who came from all over the country) were about evenly split in their attitudes toward embryo cryopreservation. When I began observations and interviews in Guayaquil, I was surprised, then, at how uniformly enthusiastic all patients and practitioners were

toward embryo cryopreservation, even though the technology had only recently become available in Guayaquil.

One of the factors underlying the different approaches to embryos in Ecuador involved the regional 19th-century battleground between forms of religiosity. Unlike the early modern conflict between Catholics and Protestants in Western Europe, in much of Latin America, including Ecuador, 18th- and 19th-century religious divides took place within the flock of church faithful instead of from outside and against it. Historian Pamela Voekel portrays the emerging Latin American merchant class as men who saw themselves as “self”-fashioned into a new form of Catholic subject, heavily borrowed from the Protestant reformation (2002). These men, whom she calls “enlightened Catholics,” proclaimed themselves sober, civic-minded, self-disciplined, and rationally bureaucratic. They objected to what they saw as lax attention to church doctrine, along with extravagant displays of personalistic devotion to saints, which mirrored entrenched patron–client hierarchies.<sup>18</sup> In Ecuador, this division between forms of Catholic subjectivity split regionally between coast and sierra.

In Quito, most practitioners and about half of the patients were less likely to adhere to church doctrine and more likely to pray to saints and the Virgin Mary to personally intercede for them in terms of IVF success.<sup>19</sup> In Quito, several practitioners had images of the Virgin Mary in their laboratories, which were integral parts of their IVF practice. They were also more likely to imagine God as less concerned with the abstract life of embryos than with the propagation of children. Guayaquileño practitioners and patients, however, tended toward a somewhat more doctrinaire Catholicism, demonstrated by their concern with the life of embryos. These practitioners and patients would criticize Catholics who prayed to saints or the Virgin Mary for intercession on their behalf. Their disdain for communicating to God through a patron saint parallels the disdain 19th- and early-20th-century coastal merchants had for the hierarchical patron–client relations of the sierra that they saw as inhibiting free trade and the free circulation of laborers throughout Ecuador (Clark 2002).

The different religious subjectivities I found in Quiteño and Guayaquileño IVF clinics also paralleled discourses of relatedness as demonstrated by attitudes toward adoption and egg donation. Highland sierran mestizos, both rural and urban, have been characterized as closed, mistrustful, possessing strict boundaries around family, and having weak ties to other families in their neighborhoods (Verdesoto et al. 1995). The fact of keeping most personal relations within the “family” has been a long-standing staple of anthropological writings on the Andes and is often analyzed as one facet in the maintenance of a rigidly stratified society (Smith 1984). Some anthropologists of the Andes attribute this suspiciousness of others to the greater penetration of the exploitative hacienda system in the highlands so that in highland, mes-

tizo, peasant communities, and elsewhere, the consanguinal family was “the only social group that a person can really rely on” (McKee 2003:133). Other anthropologists have theorized that sierran mistrust of outsiders is a result of the difficulty of travel in the sierra compared to the ease of using rivers as highways on the coast (Scrimshaw 1979).

Coastal residents are usually imagined as more open to outsiders and more fluid in their family formation, thus more welcoming of adoption (Verdesoto et al. 1995), whereas in the urban sierra adoption has never enjoyed much acceptance (Weismantel 1995). The demographic data bear out these differences in family structure. In the urban popular sector, the incidence of children living with adults besides their natal parents is higher in the coastal cities of Guayaquil and Esmeraldas than the sierran cities of Quito and Riobamba (Garcia and Mauro 1992). I asked all of the patients I encountered if they would ever consider adopting a child. In Quito, the overwhelming response to this question was negative. Many Quiteño patients responded empathically that an adopted child is “not of my own blood. Not of my own body.” Those patients who did not immediately recoil at the idea would explain, “It’s a nice idea to help others, but I want my own,” going on to list the possible problems an adopted baby could have: “born of drug addicts,” “born of criminals,” “born of Indians,” or “born black,” all signs of heavily policed race and class boundaries. In a related vein, when it came to egg donation, many Quiteño IVF patients in need of donor eggs wanted to use known family donors. Most Guayaquileño IVF patients, however, had considered pursuing adoption, and most of the practitioners in Guayaquil were quite positive about the idea of adoption and sometimes counseled patients to try to adopt.

Attitudes toward adoption, and egg donation, in the IVF clinics of Quito and Guayaquil, often mirrored local kinship reckoning. In Quito, patients understood relatedness as formed through substances and inherited traits such as blood and genes. Patients who used genetic understandings of relatedness usually imagined families as constituted by a limited set of known relations of the same substance and race. In Guayaquil, patients and practitioners tended to see embryos as more autonomous, able to become part of new families. The IVF patients and clinicians I met in Guayaquil shared with their practitioners an emphasis on the environment and education as molding the person. Genes for these patients were explicitly de-emphasized, which perhaps is linked to the fact that it was many of these same patients that were willing to entertain the idea of adoption and the use of anonymous donor eggs. This willingness also created the context for the donation of embryos to other patients before cryopreservation became available in Guayaquil. Before embryos could be frozen, extra embryos were problematic in Guayaquil because for most patients and practitioners embryos were conceptualized within a framework of “life.” The problem was what to do with the extra embryos left over

after embryo transfer. The solution, when possible, was the immediate donation of these embryos to other couples.

Although cryopreservation further ameliorated the problem of life for many Guayaquileño patients and practitioners, the addition of cryopreservation to the technology of IVF in 1998 created new ethical anxieties for Ecuadorians participating in kin ethics. In Quito, among practitioners, as well as nearly half of the patients, the existence of extra embryos provoked no concern about their fate until cryopreservation became a possibility. Cryopreservation instigated the fear that somehow these frozen embryos might be illegitimately moved out of the bounds of their natal family. These anxieties had less to do with the status of embryos as “live persons” than with kin obligations that construct embryos as members of one particular family at one particular temporal moment. For those IVF practitioners and patients, the notion of “embryo donation” was untenable. It was preferable to discard embryos rather than freeze them. The ethical concerns cut across class by region. Those Quiteño patients who voiced concerns about embryo cryopreservation had a variety of income and education levels. The thought of mixture with others, from other races or classes, was what disturbed them. The practitioners across the two regions were from more uniform economic and educational backgrounds, but there was a clear regional divide in their stance toward embryo cryopreservation.

### Life ethics—Generic embryos, alive, and “frozen for the future”

The practitioners at Dr. Vroit’s large clinic in Guayaquil were proud of their new cryopreservation program that had started about six months before my observations. They all independently mentioned how enthusiastic their patients were about the possibility of freezing extra embryos. Practitioners saw cost reduction as one benefit of cryopreservation. They told me how patients, especially those with few economic resources, could save money with cryopreservation because they would not have to pay for another ovarian stimulation if a second cycle was necessary. Dr. Castillo, the biologist at Dr. Vroit’s clinic, was concerned, however, that they had had less opportunity to freeze embryos than they had anticipated. Practitioners at this clinic had stimulated patients relatively lightly in the past. Recently, they had begun a somewhat increased drug regime but still had fewer embryos to freeze than they hoped for.

Sandra, the coordinator of the IVF program at Dr. Vroit’s clinic, explained why, in the past, they had always tried to stimulate patients lightly so there would be fewer extra embryos. Before their cryopreservation program began, she was always “uncomfortable with the elimination of a good embryo because of my religion.” She expressed relief that science had advanced so they could now cryopreserve embryos.

I asked her why her religion was against the elimination of embryos and she explained:

Because the embryos are life. We know that. The minute we manipulate [embryos] they think we are playing with life. That we think we are Gods that can form creatures. But I don’t see it like this. It’s not like I believe that I am God. I do it because I think I can help someone. I don’t do it to destroy life. It’s true; as they say to create a life we needed to destroy the embryos that remained. But I don’t only look at the bad part. And if I don’t do it, it’s not allowing a child to be created.

Nancí, one of the laboratory biologists at Dr. Vroit’s clinic, told me that all of their patients had been enthusiastic about the possibility of embryo cryopreservation. I mentioned that in the Quiteño clinics I had met patients who were reluctant to freeze embryos. She thought for a moment and told me that it must be because those patients were worried about what happens to the embryos when they defrost because they have read more about the process.<sup>20</sup> I found it noteworthy that Nancí could only imagine that patients could have problems with cryopreservation on technical—not ethical—grounds. In her mind, cryopreservation solved the ethical problem of life.

For these IVF participants, cryopreservation specifically answered church concerns about the preservation of life. In my discussion with Dr. Vega, the staff psychiatrist at Dr. Vroit’s clinic, he told me:

I understand that [disposing of embryos] is a waste of life. The church experts say it is considered human life, the new cell, and the union of sperm with the egg. To avoid this controversy you can say to the church “look, we are freezing these embryos” and after ten years you can revive them and they continue being the same being. Nothing is lost. Nothing.

Dr. Vega emphasized how embryos remain the same being, even over ten years. The temporal suspension involved in freezing was not problematic to the psychologist because frozen embryos are alive but not yet part of a family that might have moved through time without them. Instead, the beingness of the embryo is what is of concern for the psychologist, in one way matching the concerns of the Catholic Church that life is preserved. Although these practitioners saw cryopreservation as a way out of the life quandary, they are not mollifying official Catholic doctrine, which also stands against cryopreservation. Apparently, the church’s concern about the lack of dignity a human embryo might experience being left on ice was not as pressing for the particular Ecuadorian version of life ethics.

For Eliana and Samuel, a middle-class couple from Guayaquil who had two-week-old triplets through IVF, cryopreservation was seen as offering a scientific way out of the dilemma of life as posed by the church. They explained to

me that the church thinks embryos are life, and they agreed. Eliana explained, "Because, yes, already it is made. The life. And if it is in the place where it should be, that is inside the uterus, then it begins. It forms to go giving more life." Samuel explained, "The science continues advancing . . . they, the scientists can give a future, with freezing, that was thrown out." This couple had undergone IVF right before the clinic began their cryopreservation program. Their IVF cycle resulted in six extra embryos, which Eliana wished they had been able to freeze because of her fear that something could have happened to the triplets in utero or shortly after birth:

If the pregnancy fails or if they are born but fail then this is the option of the other embryos that are frozen in the machine. I would have done it at least for a year I read that they can freeze [the embryos] with contracts for a year. Here they are our children. They are *frozen for the future*. [emphasis mine]

In their reflections on cryopreservation, Eliana and Samuel imagined cryopreservation as providing a sort of insurance against the possible failure of pregnancy or birth. The issue of time passed was not a concern.

Until cryopreservation became available in Guayaquil, both clinics had offered embryo donation to anonymous couples as one way to prevent embryo disposal and preserve life. This was a much more haphazard way to save life, however, because the embryos had to be transferred rapidly. A patient who was at the right moment of her endometrial cycle had to be immediately on hand.<sup>21</sup> Before cryopreservation became available in Quiteño clinics, embryos had, as far as I knew, not been donated to other couples.

One wealthy Guayaquileño couple, Maria and Victor, used both donation and cryopreservation as a means to preserve the life of embryos. The couple, who had undergone IVF four times, had donated their extra embryos on their third attempt. Maria told me: "We heard that this woman couldn't ovulate. The staff explained this woman needed help like we needed help." Their extra embryos went to this woman, much to Maria and Victor's relief. They were thrilled that the embryos did not "die." On their fourth round of IVF, Maria and Victor's clinic had begun a cryopreservation program, and they were able to freeze their extra embryos, which they saw as a scientific answer to the problem of embryo death. For Maria and Victor, as their donation illustrated, embryos should be circulated among other families to preserve their lives.

Dr. Castillo also told me how he and other clinic staff had struggled with the question of the church and its condemnation of IVF. To minimize the impact of church critique, Dr. Castillo took to thinking of the fertilized cell masses as pre-embryos and pointed out that many miscarriages happen naturally, but now cryopreservation alleviated the quandary of embryo disposal. Dr. Castillo viewed cryopreservation in a positive light, as an answer to many problems posed by IVF.

At one point he said, "I prefer to freeze embryos; no están en el tacho al menos están en el tanque" [better that they are in the tank than the dustbin; lit. they are not in the dustbin, at least they are in the tank]. This statement, proverblike in its economy of expression, exemplifies the life ethics approach to embryo cryopreservation. The most salient characterization of the embryos is as "alive." The embryo's life is at stake, not its status as family member. In addition, embryos are interchangeable and generic. They do not necessarily have ties to a particular family. They can be circulated through embryo donation, and their lives can be suspended "for the future," as long as they are preserved.

Before I move on to describing patients and practitioners participating in kin ethics, I want to point out two specific features of these Ecuadorian embryos that become apparent when comparing them to English embryos as characterized by Catherine Waldby. Waldby describes how biovalue is harnessed through the ability to temporally manipulate tissue fragments extricated from the body (Waldby 2002). The fact that embryos can be frozen for indefinite amounts of time allows for their controlled circulation. This capacity to store embryos indefinitely is one of the attributes that makes cryopreservation so appealing for Ecuadorian practitioners and patients who see embryos as alive. Although extra embryos had little or no value when they had to be disposed of or immediately transferred to another woman, they became more desirable when they could be kept in perpetuity. But as we shall see, the manipulation of time is exactly what made cryopreservation so disturbing for other Ecuadorian patients and practitioners. Within kin ethics, extra embryos had no value before the advent of cryopreservation, although afterward they took on a negative value because they threatened the boundaries of family groupings.

However, Waldby's insights could have been more nuanced if she had compared English embryos with embryos elsewhere. She argues that for those who oppose stem cell research, "the life of the embryo is biographical, the beginning point of a human narrative that should be allowed to run its social course" (Waldby 2002:313). If we carefully examine statements made by those who think of embryos as life, such as Ecuadorian IVF patients and practitioners, or Bush, the actual biography of embryos does not appear to be their concern. The desire to save the human lives of embryos does not stem from the desire to activate a particular biography but, instead, is more the call to preserve human life in an impersonal, almost bureaucratic, sense. Proponents of life ethics value life, but life in the abstract, interchangeable and bare, unencumbered with ties to the living.

In the next section, I describe Ecuadorian patients and practitioners whose embryos stand outside life debates. For them, embryos are indeed connected to biographies, not of individuals but of families. These embryos are the opposite of anonymous. They are not necessarily alive, but they are richly imbricated within a kin group with its own history



and race and class status to preserve, and for this reason their individual biographies need to be curtailed.

### Kin ethics—Curtailing embryo circulation

My discussions with IVF practitioners and some patients in Quito about embryos made it abundantly clear that there is nothing natural about configuring embryos as life. For Ecuadorians enrolled in kin ethics, life was not the primary concern in imagining the proper fate for embryos. Among these IVF participants, discarding extra embryos was not cause for alarm, and it was only the technological possibility of cryopreservation that made embryos problematic because of the possibility of mixture with others and the temporal discontinuity that could arise between frozen embryos and the rest of their family members. This was especially apparent among laboratory practitioners in Quito. Using a highly moral language, these practitioners would tell me how patients “abandoned” their frozen embryos, never returning to claim or transfer them. Likewise, Quiteño patients frequently voiced concerns that cryopreserving their embryos would allow practitioners to surreptitiously move them out of the bounds of their natal family.

Even in the IVF clinics in Ecuador that had the technology to freeze embryos, cryopreservation for some was the exception not the norm. When I returned from visiting an IVF clinic in Argentina, I told the practitioners at Dr. Molinas’s clinic in Quito that the biologists at a clinic in Buenos Aires froze all embryos, regardless of quality, because of concerns about life.<sup>22</sup> The physicians and biologists at Dr. Molinas’s clinic laughed when they heard of these efforts to save feo embryos, saying “what a waste of time and money.” In addition, Diego, one of the biologists, was concerned about potential abandonment of any frozen embryos by their families, whether *bonito* (pretty) or feo. One morning, as Diego peeled (cleaned) some newly aspirated eggs in the darkened laboratory, he remarked that when he trained in Brazil sometimes the clinicians would aspirate 35–40 eggs at a time, this, in contrast to Ecuadorian clinics that usually harvest from 4 to 10. When I asked about this difference, he explained that Brazilian doctors give patients more fertility stimulation drugs. His clinic did not administer a high dosage because “then you would have all these embryos to freeze . . . and couples just abandon them.” The sentiment of this offhand comment did not match Diego’s remarks in more official moments, when he told me that he froze all embryos of good quality, and that he froze embryos in 90 percent of the cases. Cryopreservation for Diego, as with most other practitioners, was a sign of technical advancement, and he disparaged clinics without a cryopreservation program. Diego called clinics without cryopreservation technology “*contra la vida*” because extra embryos would have to be thrown out. But I had often witnessed Diego dispose of embryos. In fact, by my count Diego only froze embryos 30 percent of the time,

and only when there was at least more than one embryo left over after transfer. On all other occasions he discarded the remainder.

In Dr. Hidalgo’s clinic in Quito, Antonia, the biologist, told me that they have cryopreserved embryos only 23 times in the three years since they obtained the equipment to do so. Like Diego, she explained they do *suave* (soft) stimulations, so there were fewer embryos to freeze. For Antonia, the desirability of fewer embryos did not stem from a worry that there is “divine punishment for what we are doing.” What worried her was “the future of frozen embryos, because the parents here are frivolous and don’t think about them responsibly.” I asked her, “Why worry about them at all?” and she told me, “Because the embryos are cells with future potential. They are going to be children. . . . And for this single reason, [the parents] who make the decision to freeze them and leave them have to be responsible about what happens to them.”

Freezing embryos was not something Antonia took lightly. Her anxiety about the procedure arose not from embryo death but, instead, from the embryos’ potential abandonment by patients who she already considered parents with responsibilities to specific children. In Antonia’s view, frozen embryos signaled future children that might be abandoned, not current or future life that must be preserved.

After an embryo transfer one afternoon, I noticed Antonia at the microscope placing something in a petri dish that she had taken out of the back bottom of the incubator. I asked about it, and she told me that this dish was filled with unfertilized eggs and unused, extra embryos left over after transfers. She kept one of these dishes for about a year, depositing the extra embryos from every patient’s cycle into a dish in which they reside together until it was time to sterilize the lab. It was in this dish, after they lost the potential to become children, that patients’ gametes were allowed to mingle. Antonia used them as display embryos for visitors, instead of removing the patients’ embryos, slated for transfer, from the optimal conditions of the incubator.<sup>23</sup> In addition, Antonia described how she is not capable of throwing these embryos out.

Are they life? Yes. Like bacteria and I would be sad throwing out certain bacteria that I worked on? The embryos are special because they are of my patients. I am a biologist, not a doctor. I don’t connect to them because they are human.

These dead embryos are “special,” “they are her patients,” and she “has worked on them.” They were life, but life like bacterial life, not human. What made them worthy of her time was the specificity of her connection to them as work objects, and their connection to particular patients, providing a view of what is deemed worthy of care and emotion, expanded beyond the human.<sup>24</sup>

For these biologists, the specialness of embryos does not revolve around their status as alive or dead. Letting the

embryos die in a dish was much less problematic for Antonia than freezing them. As she told me, "Having them and having them be dead is better than freezing. I prefer to have a dead child than a disappeared child not knowing what happened to it." These biologists would rather have had fewer eggs to fertilize, or would rather throw out a few extra embryos than leave an embryo in a state of suspended temporal potential, possibly abandoned by their parents.

When I interviewed Dr. Castro, the clinic manager at Dr. Hidalgo's clinic, she claimed that their lab (meaning Antonia) never threw out fertilized embryos. I immediately thought of the dish of extra embryos sitting in the incubator. It was true that they were not discarded at first, but they were not implanted, either. These practitioners' attitudes made it clear to me that regardless of their own concerns about the kinship of embryos, they were well aware how life ethics has so permeated discussions of embryos that they had represented themselves and their laboratories as maintaining the life of embryos. Given the Catholic Church's position on embryo death, and globalizing debates about life, this is hardly surprising. Even with this proclamation of care, however, these biologists' avoidance of cryopreservation and characterization of embryos stood in stark relief to those biologists who saw embryos as alive. Remember Dr. Castillo's comment that "I prefer to freeze. Better in the tank than the dustbin." One could imagine Diego and Antonia reversing the sentiment, "Better in the dustbin than the tank."

### Ethical patients

Although lab biologists worried that patients might abandon their embryos, patients with concerns about freezing embryos were anxious about the potential for clinic staff to move the embryos outside the bounds of circumscribed kin relations, and about resulting family dysynchrony if they came to have both live and frozen children. These patients were for the most part unconcerned with the fate of their extra embryos that might be thrown out until I pushed them to think about this issue. When asked directly, many of these patients told me that embryos are life, but that did not mean that their lives must be preserved at all costs. Some patients, in fact, like Ximena, one of the few Afro-Ecuadorian IVF patients I encountered, declared that embryos are not yet life. "Embryos, they are not yet . . . well maybe they are life when they are four months or five. Maybe they could be. But embryos? No?" Although life was not a major concern among patients such as Ximena, the specter of cryopreservation could provoke strong reaction without much prodding. One patient, Tatiana, explained:

The manipulation that exists can really affect families. I heard this is why some priests are against it, for this manipulation. There is no care taken here because of the lack of ethics. Maybe in other places there is more

professional ethics. Here, no. Here still it can be a sale. They might use [my embryos] like this. They would be misused, put in another person.

In this case, even though the church has condemned IVF and cryopreservation outright, Tatiana, an upper-middle-class Quiteño woman, could only imagine that the church finds IVF objectionable because of the possibility that unethical doctors might give her embryos to unknown persons.

Inez, a middle-class doctor, one of the few patients from Guayaquil who had reservations about freezing, also conceived of kin relations as more important than life:

The embryos that are thrown out, it's like an abortion for them [the church]. That is you could think of it as abortion because it's already an embryo, that is it is already a life. But they should destroy it before another person uses it. Freezing that doesn't seem good to me. I believe it's better to destroy them. In my case if I had embryos and we had them to donate to someone. . . . No, it's better to destroy them. The truth is that I don't know how long they can have them frozen. If they have the same capacity, it seems to me that fresh [is better].

For Inez, destroying embryos was better than cryonic suspension. Although patients and practitioners who advocated life ethics saw no problem—ethical or technical—in the long-term suspension of embryos, Inez worried that frozen embryos are not the same over time, their specificity to a particular movement in a family would be lost. To her, they were not interchangeable life; they were specific, related embryos that should not be given to "another person."

Fernando, a working-class Quiteño patient at Dr. Molina's, who was in the early stages of an IVF cycle with his wife, agreed with the church that embryos are life, but he had concerns about kin that overrode life in deciding the fate of extra embryos.

They are life, yes they are human life, and so it would be ugly to put them in the trash. They told us that sometimes there are couples that cannot have children, and they want what is donated. But, in contrast, my wife and I think that if they are your cells and my cells then maybe they are going to remove some similarity from you or me. Or, not of us, but of our children. And what if after a time we see them in the street? Another one of my children with another couple. It is going to be very hard. But until now we don't know what to do if they have them [extra embryos]. We are still indecisive.

Fernando was struggling to interpret embryos. Clearly, the thought of embryos as life had some claim on his imagination, but what concerned him more was the possibility of embryos moving outside of his family.

This concern that he might run into the child produced from his embryos was indicative of concerns of many people

in Ecuador. For instance, Dr. Leon, the director of another clinic, thought that people should not donate embryos in Quito because of Quito's small size and the chances of meeting a child "on the street" were high. In both Fernando and Dr. Leon's scenarios, the "street" plays a role as a site of potential hazard, involving the possibility of mixtures with strangers. Catching sight of one's embryo on the street would be an incomprehensible experience, a stranger and one's child at the same time.

After conducting interviews with IVF patients over several months, I found that I could identify a patient's ethical priorities sometimes even before I asked them about embryo cryopreservation. If they brought up their fears about embryo donation on their own, it usually meant that they would feel negatively about cryopreservation when I would ask about it. For these patients, cryopreservation could easily lead to the surreptitious donation of their embryos to someone else, preying on prevalent fears about the lack of ethics in Ecuador, and emphasizing their robust sense of family boundaries. Javier, an upper-middle-class Quiteño man who had already undergone three cycles with his wife Lourdes (also from Quito), told me that he thought freezing was a good idea in case you needed to do it again. But he added that,

**J:** I am scared as well that the doctors could use the embryos in another way, for another fertilization for someone else. There is no legislation here that obliges them to effectively control them. That they respect them. They are only guided by [their own] ethics.

**E. R.:** Would you think of donating them to someone else?

**J:** No, because they are your children, that is more than little embryos. You don't know who they are that would have them.

In Javier's view, the lack of regulation of reproductive medicine in Ecuador was threatening embryos as his own children. He was not worried that lack of regulation would threaten embryos as abstract life. Isabel, an upper-class Quiteña, explained, "You don't know in whose hands they will fall. You have to assure that this creature [child] is going to be well, and with donation you can't be given that certainty."

These comments speak to the issue of trust between physicians and patient in Ecuadorian IVF, or lack of it. Patients enjoyed a paternalistic relationship with their doctors, sometimes revering them as near to God. Especially in Quito, the relationships that patients had with their doctors emphasized personal connections over bureaucratic rules. Patients trusted these doctors to maneuver "above the law" for them, like God or a parent. This style of informal trust allowed patients to imagine that in other circumstances the same doc-

tor might intervene on the behalf of someone else, commandeering their own embryos for the sake of another patient.

### And God provided

For those patients involved in kin ethics, cryopreservation posed the question of family, not life. In many of these cases, it was God that provided the answer. As I explained above, these were patients who were more "traditionally" Catholic. For them, the fact that the church disapproved of IVF meant little when they had a more personal relationship with saints and the Virgin Mary, or with God, who could affect outcomes on their behalf. Several patients recounted very similar narratives in which they had not wanted to freeze embryos and, fortunately, God "blessed them" with only the amount of embryos that could be transferred. For these patients, it was cryopreservation that they imagined God wished to avoid. During her IVF cycle, Laura, a middle-class Quiteña woman, and her husband had talked about what they would do about cryopreservation: "I wouldn't have wanted to freeze, and then God gave me only those that I needed. I didn't want more. It gave me peace that they did not have the possibility to continue the process to freeze. Three were good and the rest were bad. They didn't have to freeze them. Thanks to God."

Berta, an upper-middle-class woman from Ambato in the sierra to the south of Quito, also attributed the fact that there were no extra embryos at her transfer to God's intervention: "With freezing I would have been left with my living children [she already had two older children] and my frozen ones there, and in five years the doctor would have discarded them. And I don't want to do this again. And I believe that God facilitated here, because only four formed out of the six [eggs]. Two didn't form and they put the four inside me." Berta's anxiety about freezing embryos had to do with the temporal suspension of particular embryos as children, in relation to a specific family moving through time, not a concern that their lives were at stake.

God also helped patients overcome some of the complications of actually having frozen embryos. In the summer of 2000, during a few months of preliminary fieldwork, I talked with a young, middle-class Quiteño woman, Vanessa, after observing her aspiration and embryo transfer. At the transfer there were seven good-quality embryos. Vanessa agreed to the recommendation of the clinic doctors that they implant four and freeze three. A few days later she told me she was worried about what would happen "with those three *embriocitos*," the extras. Vanessa had apprehensions that if she was now pregnant the doctors would ask her to donate the frozen three, and the embryos could "have this other señora even though I know they are only mine." She continued, "It will also serve in the happiness of another person that doesn't have this possibility," deciding out loud that she would donate them if asked.

A week afterward, Vanessa had a positive pregnancy test. When I returned to Quito two years later I heard that Vanessa had lost that pregnancy and then had the three frozen embryos implanted. This transfer was not successful. A few months later, she underwent a new IVF cycle and got pregnant with quadruplets, who were nine months old when I saw her again. At my visit her small house was crammed with bassinets and other baby paraphernalia. Even so, Vanessa launched into an angst-filled tale about those three frozen embrioncitos from two years earlier. Obviously, the thought of these three embryos still haunted Vanessa, even though four small, sickly looking babies now surrounded her on the bed, demanding attention. She described how when she was pregnant the first time she said to herself:

My God! What am I going to do with my other children [the frozen embryos]? I always said to my mother, "Mama, what will happen?" I told her to donate [them] would be like abandoning my child. I told her I don't like this idea. Then when I lost my child [the first miscarriage] my mother told me: "It's for the best. It's from God I tell you. You were very worried about the babies, the frozen ones." So then they [implanted the frozen embryos] but I was doing [so] badly emotionally. I believe that I rejected them when they were in. They implanted but I didn't stay pregnant.

Vanessa explained how relieved she was that there were no frozen embryos left to worry about. "There won't be other children that are going to be mine and that someone else could have." Reversing her position of two years earlier, she told me: "I understand that there are people that can't have babies, because I suffered a lot in this, but other people would have the embryos and I don't like that much." Implanting the embryos alleviated Vanessa's dismay that she had potentially abandoned her children to strangers, even though she regarded her poor emotional state as causing their death. Additionally, in Vanessa's narrative, God was portrayed as more concerned with the potential of abandoned children than preserving the life of embryos. As for the majority of Quiteño practitioners and many of the patients, Vanessa placed embryos in a category requiring an ethics of kin responsibility, not an ethics of life.<sup>25</sup>

The fear of abandonment involved in kin ethics creates an embryo that has a very specific temporality. Recall Dr. Vega's argument that frozen embryos remain the same being, even after long-term cryopreservation. In contrast, within kin ethics, embryos are not understood as interchangeable life that can be suspended through time. An embryo circulated among strangers or frozen for ten years threatens the embryo's status as a family member. In life ethics, cryopreservation and normative embryo donation represented the potential future saved or ensured. Within kin ethics, the only potential was that of the potential for child abandonment, exemplified by Vanessa's explanation that God preferred the

death of embryos to the abandonment of cryopreservation. IVF biologists participated in worries about abandonment as well when they expressed how they did not like the responsibility of tending other people's children, even those residing in pipettes and stored in cryopreservation tanks. Cryopreservation represented a failure to fulfill obligations to one's kind. Within kin ethics, embryos are not transferable to other parties; they are unique in the way that embryos in life ethics are indistinguishable, which allows life to be circulated to be preserved.

### Personhood—Lives and connections

Within these two contrasting sets of ethical constellations, life ethics and kin ethics, different formulations of how new persons should be properly brought into existence can be discerned. For Ecuadorian patients and practitioners who shared in life ethics, any talk of family linkages took a back seat to the imperative of keeping embryos alive by any means. For those who shared in kin ethics, embryos are understood as constituted through family relations, and less as individual human persons-to-be. These two understandings of embryos parallel Marilyn Strathern's discussion of the differences between contemporary bourgeois English kinship and kinship among the Hagen in Papua New Guinea.

Within life ethics, the embryo is an autonomous entity in which the essence of that entity, life, is the object of moral concern and evaluation, not its individual characteristics. These embryos are more like the individual person as described by Strathern for English kinship, in which a baby is a new person that can exist outside its relations (Strathern 1992). In their microscopic state it is especially easy to see embryos as devoid of all ties, social or biological. Embryos, for participants in life ethics, are alive but interchangeable, bare but dignified. Life ethics regards embryonic actors in the short term, saving the life of one embryo, instead of maintaining lineage and alliance in the long term. An embryo can be circulated outside a family; it can be frozen through time. None of these actions changes its essence as alive. These embryos are seen as having future potential in any home. At the Bush press conference with which I started this article, the older children in attendance wore T-shirts that declared "Former Embryos" (see Figure 1). These "former embryos" were presented as easily disconnected from their genetic families and adopted by other couples. Within life ethics, life can trump "genetic truth," or other forms of connection, in determining personhood.

Within life ethics, the primary duty is to preserve life; thus, cryopreservation is a positive development. Within kin ethics, cryopreservation is problematic because of the fact that this technology brings with it the possibility that the bounds of a particular family could be breached through abandonment and illegitimate circulation of persons who are family.<sup>26</sup> An embryo is not an autonomous individual



**Figure 1.** These two “former embryos” were photographed at a White House press conference, at which President George W. Bush spoke out against expanding federal financing for stem cell research. The boys had been cryopreserved as embryos and “adopted” through the Christian organization Snowflakes. Although Snowflakes and George W. Bush emphasize the uniqueness of every human embryo, the boys, presumably twins, were made to look identical, with matching T-shirts, pants, and haircuts. Courtesy of AP Images.

in the bourgeois sense but one formed by its role and positionality in a family, as Strathern describes for New Guinea, where “persons embody their relationship with others” (Strathern 1992:65). For the Ecuadorian patients who shared in kin ethics, cryopreserved embryos were “unfinished business.”<sup>27</sup> Persons within kin ethics are formed in situ within kin groups, not individually. The trouble with cryopreservation is not life or death but the suspension and possible future circulation of one’s family member. Personhood in this case is not derived from individual beingness or a value placed on life but is socially performative and processual. Effectively, kin ethics acts to prevent the circulation of embryos by granting embryos personhood through kinship, whereas life ethics fosters circulation through imbuing embryos with personhood through life.

My delineation of different Ecuadorian practices involving cryopreservation might be taken as a kind of social evolutionary argument in which traditional Quito has not evolved modern understandings of bourgeois personhood whereas liberal Guayaquil has. But this delineation would

mask many contradictions. The differences exhibited between Quiteño and Guayaquileño cryopreservation and the difference between both of these approaches and what we assume to be the case for North America or Europe demonstrate something else other than unilinear social evolution. In Guayaquil, personhood might more closely match that of European bourgeois personhood, but long-standing approval of adoption has provoked an antipathy to genetic reasoning in Guayaquil. Guayaquileño concerns about the life of embryos come from influential Catholic teaching about the sanctity of human life. In this way it is more pious and enlightened. For those participating in life ethics, embryos evoke “life,” but they are often devoid of the genetic ties that many North Americans see as connecting embryos to the world of the living. In fact, modern substances like genes were often dismissed as markers of connection, a dismissal that made adoption and embryo donation possible, even embraced.

In “traditional” Quito, however, action around embryos was not necessarily predicated on the modern discourse of

“life itself.” Although Guayaquileño patients and practitioners acted to preserve the life of embryos, the hesitation to freeze embryos on the part of many practitioners and patients in Quito did not privilege church arguments about the sacred life of embryos, and, in fact, some Quiteño patients believe that it must be cryopreservation, not IVF, that the church finds objectionable. Within kin ethics, genetic discourses played a significant role in understandings of persons constituted by relations. The fact that genetic reasoning makes sense in the context of a “traditional” kinship of alliance in kin ethics reminds us that it can be difficult to untangle where modern biological “truths” begin and long-standing European “folk biologies” end (Franklin 1997; Schneider 1980).

### The circulation of life

This article has compared divergent approaches to embryos in Ecuador to better-known North American and European debates about the life of embryos. The expansion of the IVF industry has fostered similar yet specifically local debates about the status of these entities throughout the world. In some Muslim countries where “the right to life” from conception is not at issue, it appears that maintaining familial boundaries is also of great concern. Marcia Inhorn has described the reaction of an Egyptian Muslim couple confronted with extra embryos after undergoing IVF in a Los Angeles clinic. The IVF staff gave the couple three options: freezing, destroying, or donation. The wife explained, “We said, ‘destroy.’ It is our religion.” This couple feared that donation would “inevitably lead to an immoral and genealogically bewildering [and possibly incestuous] mixture of relations” (Inhorn 2003:86). Alternately, in India, Aditya Bharadwaj describes how embryos for the most part exist outside of life debates. However, Indian embryos do not appear to be implicated within discourses of kinship and alliance, either. Couples with extra embryos routinely donate their embryos for stem cell research. Perhaps, in India, embryos are not imagined as entities that have ties to particular families and, thus, require an entirely different model of how embryos mean in India. Regardless, the consequences of these two approaches are different. The Muslim couple wanted their extra embryos taken out of circulation and destroyed while, in India, the willingness of couples to donate their extra embryos is currently fueling India’s burgeoning stem cell industry (Bharadwaj 2005).

In Western Europe, North America, and in other areas within European liberal traditions (like Latin America), the post-WWII posing of the debate about “bare” life also has particular consequences. By enveloping embryos in debates about life, they have become transferable. If they are life, they should be donated to other couples, and if they are not, they can be used in research. Both answers to the question of life have reshaped action and the generation of biovalue. This

debate obscures other ways of situating embryos, even in North America. In fact, after a slew of articles in the *New York Times* about embryo adoption, as advocated by Bush and right-to-life proponents as a solution to the “thorny” problem of extra embryos, the *New York Times* ran an article entitled “It’s Not So Easy to Adopt an Embryo” (Belluck 2005). It seems, according to the interviews that the reporter conducted, that despite the incitement-to-life ethics of Bush and embryo adoption agencies, few couples in the United States with frozen embryos actually donate their embryos to other couples, even if they were initially enthusiastic about the prospect. A version of kin ethics appears to be at work. In the *New York Times* article, couples explained that they are uncomfortable with having their genetic children raised by someone else, or with the possibility that a child born from donated embryos might wonder why they were not the embryos chosen to be raised by their “real” parents.<sup>28</sup>

I cannot draw a firm conclusion from a lone newspaper article, but one difference between U.S. and Ecuadorian versions of kin ethics might be that the U.S. version had little concern about the consequences of cryopreservation itself; North Americans trusted their practitioners to leave their embryos frozen in perpetuity and not circulate them surreptitiously.<sup>29</sup> For Ecuadorian patients, cryopreservation entails problems with the potential for illicit circulation of frozen relations and the ability to unsettle familial time. Whatever their differences, patients in Ecuador and the United States with concerns about the circulation of embryos seem to have little voice given that the competing ethical debate about life is so loud. The life–not life debate over embryos is recognizable almost everywhere, and it has been scaled globally while we might say that other ways to situate embryos remain more local. For example, in India, in vitro embryos cannot be created for the sole purpose of stem cell research. This mandate is in place to placate the North American market for stem cell research that is concerned with life debates (Bharadwaj 2005). In India, then, research protocols are organized around foreign concerns about “life itself.”

In the United States, the federal government has never sponsored a single research grant for IVF. In the early days of IVF, life debates effectively shut down the possibility of the government ability to recognize and regulate the industry, which made the explosion of the private IVF industry possible (Marantz Henig 2003). Now, 25 years later, extra embryos, new entities created through the ubiquity of IVF, have become a symbol for a similar debate about life. And again the debate in the United States promises to keep research on stem cells very much alive within the private sector, less regulated than in nations like England and France.

Ecuador, of course, is a very different place than the unregulated zones of the United States or India. It does not currently have the scientific infrastructure to warrant the interests of biocapital. But the local “life” rhetoric in Latin America around embryos certainly mirrors global debates

around free trade.<sup>30</sup> There is a large controversy about the implantation of multiple embryos within the Pan–Latin American IVF industry. The number of embryos transferred is thought to be much too high because of the incidence of multiple pregnancies. Within logic of the “free trade” of embryos that life ethics makes possible, the concern about the transfer of multiple embryos could also be interpreted as akin to embryo disposal. Transferring multiple embryos back into a woman’s body keeps them in the family. It prevents the free circulation of embryos to other families, “for the future,” or for research. Both multiple embryo transfer and embryo disposal constrict the movement of embryos in the larger world.

Embryos become bioavailable within the debate about life–not life when they are situated as persons who should be made available for activation. Although the Catholic Church consistently continues to condemn IVF and the cryopreservation of embryos as against the dignity of their humanity, for other proponents of life, frozen embryos have become valuable through the general free-floating call for “dignity.” Complicating Kant’s distinction between “value” and “dignity” (1949), it is this call to preserve the dignity of the generic life of the embryo that in fact confers its value. Cryopreservation technology makes embryos bioavailable. By freezing time, embryos can become raw units that can be stored, manipulated, and exchanged when needed. In the North American context, the concerns of conservative Christians in this case happen to align with that of private, unregulated industry. Embryos are either persons (without bodies) or they are not, but either way they can be disconnected from specific families, free agents that can be moved within free markets.

## Conclusion

The critical and ethnographic study of bioscience and technology in Ecuador offers the potential to understand how “life” technologies are propagated and consumed within very different religious and political–economic contexts, often in unanticipated ways. In Ecuador, new technological practices have intersected with two ethical models of personhood so that the extra embryos produced by these practices also produce divergent responses to their creation. These divergent responses demonstrate that embryos are not universally embroiled in the politics of life, as has been assumed in the majority of debates in Europe and North America. The anxieties shared by some Ecuadorian practitioners and patients around cryopreservation also illustrate that in Ecuador, a Catholic country, institutional Catholic concerns about life are not the only forces at work in determining ethical practice.

The examination of kin ethics and life ethics in Ecuador allows for insights about local bioscientific practice. For instance, in Ecuador the local clinical ecology of IVF is affected by these ethical models, and the desire of some clinicians to prevent the necessity of cryopreservation influences the

number of eggs stimulated and retrieved within IVF cycles and the amount of hormones prescribed, purchased, and consumed. By looking at these ethical models at work, it is also possible to see that there is no one Ecuadorian approach to embryos. It is also important to remember that my research was carried out at a particular moment. Eventually, more Ecuadorian IVF participants might become accustomed to cryopreservation and take on discourses of life in regard to embryos, eventually obscuring the difference between these two ethical models and the divergent problems they pose.

At the same time, the Ecuadorian embryo serves to situate and provincialize general North American approaches to these technologies as emanating from a specific time and place. The embryo is not a fixed thing but an object through which local and globalized concerns about kinship and personhood and life are destabilized, articulated, and negotiated. Comparisons between kinds of ethical embryos make it easier to see how embryos situated within the debate about life–not life allow for certain social arrangements and not others. Contrasting the ethical discourses of kinship and life clarifies the circulatory flows that life makes possible. For some Ecuadorians, however, the embryo simply does not carry an iconic resonance as “life” as it does in other sites, and, at least for now, it is their suspension, not their death, that makes them hard to keep.

## Notes

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1. This organization, Snowflakes, connects couples with extra embryos to those who “need” them.

2. Much of this scholarship overlaps with new kinship studies propelled by social and technological developments, like assisted conception and gay–lesbian social movements that have challenged understandings of normative kinship (Borneman 2001; Butler 2002; Clarke and Parsons 1997; Edwards 1999; Faubion 2001; Franklin and McKinnon 2002; Franklin and Ragoné 1998; Ragoné and Twine 2000; Strathern 1992; Weismantel 1995).

3. I found that there were a substantial number of patients with very few economic resources in the IVF clinics in Ecuador. These patients often went into extreme debt because of their involvement with this set of technologies.

4. The attention paid to STS in developing nations is still minimal, however. At STS conferences, the number of scholars engaged in questions of science and technology outside of Europe, North America, Australia, and Israel can usually be counted on less than one hand.

5. My research mainly took place in IVF clinics, observing and talking with practitioners and patients in waiting rooms, laboratories, operating rooms, and patients’ recovery rooms. In addition, I conducted over 130 formal interviews for the project, the majority

with female infertility patients and, sometimes, their male partners. I also conducted interviews with IVF practitioners, physicians, technicians, laboratory biologists, and staff at IVF clinics, as well as egg and sperm donors, surrogate mothers, priests, lawyers, and bioethicists. For an extended discussion of my findings, see Roberts 2006.

6. In IVF, practitioners vaginally remove a woman's eggs from her hormonally stimulated ovarian follicles, then laboratory technicians combine these eggs in a petri dish with sperm. Resulting fertilized eggs, or embryos, are transferred back into a woman's uterus in the hopes of implantation and pregnancy.

7. Waldby defines *biovalue* as "the yield of vitality produced by the biotechnical reformulation of living processes to induce them to increase or change their productivity along specified lines, intensify their self-reproducing and self-maintaining capacities" (2002:310).

8. With a population of roughly 300 million in the United States, there is approximately one frozen embryo for every 750 people. In the United Kingdom, with a population of 60 million, the ratio is 1/1,150, and in Spain with a population of 40 million, the ratio is 1/1,000, making the absolute differences less stark (Wade 2003).

9. A possible explanation for the low number of cryopreserved embryos in Ecuadorian clinics might focus on economic conditions, but economic explanations are at best partial. A cycle of IVF in the United States can cost from \$10,000 to \$15,000, whereas a typical IVF cycle in Ecuador costs from \$3,000 to \$6,000. However, given Ecuador's ongoing economic crisis since the mid-1990s, this price is more prohibitive in Ecuador than it is for the majority of middle-class IVF candidates in the United States. Many fewer Ecuadorian IVF patients do repeat cycles if they do not succeed the first time because of the high costs. Cryopreserving embryos, which costs about \$700 in Ecuador, could be one way to cut the costs of subsequent IVF cycles and could prompt patients to attempt more cycles. Some doctors do promote embryo cryopreservation to patients for its ability to minimize costs in future cycles. This economic benefit did not influence other practitioners to encourage cryopreservation, even though more than half of the IVF clinics have the equipment to freeze embryos, and even though practitioners in clinics that can cryopreserve embryos used this capability as a sign of superiority over the clinics that did not. The enthusiasm for embryo cryopreservation of some practitioners and reluctance to freeze embryos of others hinges then on other factors than economic disparity with North America and Europe.

10. Of course, the Catholic Church is onto the slipperiness of this language. Last year the Vatican's daily news report carried an article entitled "Doublespeak: False Term Pre-Embryo Re-Emerges" (Zenit 2004).

11. See Rapp 1999 for a discussion of scientific literacy among lay people in the United States.

12. All of the IVF patients I encountered in Ecuador had male partners except one. These partners were called "husbands" whether the couples were legally married or not.

13. Quichua is the most commonly spoken indigenous language in Ecuador.

14. During the process of cryopreservation, plumes of liquid nitrogen smoke waft through the laboratory. I sometimes imagined the smoke as emanating from a witch's brew, which seemed appropriate given the tensions involved with putting these entities on ice.

15. This issue has been taken up in another way by some staff and patients. I observed several nurses tell patients they were more likely to get pregnant using frozen embryos. Patients sometimes told me this as well. The nurses said that frozen embryos were obviously stronger because they had survived the freezing and defrosting process, and patients emphasized that they were often more relaxed on their second cycle having been through it before and so they were more likely to get pregnant.

16. Feo, or ugly, embryos are fragmented and/or asymmetrical and, thus, were thought to have less chance of implantation.

17. Guayaquileño and Quiteño contestations for resources and power, both economic and symbolic, became obvious in my study of Ecuadorian IVF, in which claims about technological advancements were constant topics of discussion. Although Guayaquil is the preeminent commercial hub of Ecuador, Quito remains the more prominent intellectual center, home to several more universities than Guayaquil. The larger number of medical schools connected to these universities most likely accounts for the fact that, despite Guayaquil's relative wealth, Quito has the greater number of IVF clinics. One of Guayaquil's IVF clinics produced the first IVF baby in Ecuador in 1992, but Guayaquil is clearly "behind" Quito in the business of IVF. The fact that only one of the two Guayaquileño clinics had a (very new) cryopreservation program and five out of seven in Quito have a program exemplified this difference to Quiteño IVF practitioners.

18. 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 champions 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; Wolf 1984).

19. Currently, 85–90 percent of Ecuadorians consider themselves Catholic. The evangelization of Latin America has become one of the most pressing issues in studies of Latin America religiosity today (Cahn 2003; Dow and Sandstrom 2001; Muratorio 1981), given that evangelical Protestantism has made large inroads all over Latin America. However, in my sample only 10 percent of the patients, and none of the practitioners, were identified as Protestant or Evangelical.

20. There is a prevailing notion in Ecuador that Quiteños are more cultured and better read than Guayaquileños.

21. Gamete and embryo donation are other practices expressly condemned by the Catholic Church.

22. In Ireland, IVF practitioners have come up with another creative means to deal with the issue of extra embryos in the absence of regulation in a Catholic nation. "In an effort to minimize the risk of multiple pregnancies, [doctors] replaced surplus embryos in the woman's cervix, where they perished. This, as one critic has wryly pointed out, was equivalent in effect to putting them in her ear" (Egan 2005:17).

23. She also explained that she thought of the dish as a sort of sentry system to warn of incubator contamination, figuring that if bacteria invaded the incubator she would spot it in the dish with the leftover embryos first.

24. Dr. Leon, another IVF biologist and clinic director, made a similar comment when she explained that biologists and gynecologists are very different in respect to what they care about. "For gynecologists it's patients, for biologists it's entities like embryos." Even though Dr. Leon thought she would have a hard time disposing of frozen embryos, her connection to embryos was not about life. "I respect the embryos because they are a part of me, or that is they are a part of what I do."

25. These worries that patients had about their responsibilities toward frozen embryos are not concerns about the financial hardships of raising more children, as we might imagine, even for patients with few economic resources. Neither embryos nor children are thought of as potential burdens. Instead, anxiety arises because of the mandate to care for children within one's own family.

26. As a longtime observer of IVF in the United Kingdom and the United States, Sarah Franklin writes, as well, that "the sense



that a cryopreserved embryo suspended in a liquid nitrogen tank is a biological relative is a commonplace experience for couples undergoing in vitro fertilization" (Franklin 2001:313).

27. One difference between what I am describing for kin ethics and Strathern's Melanesian example is that in New Guinea, a being that is only constituted in its relations to others can accumulate a much larger set of relations than a child in Quito, whose constituting relations are sharply delimited by the bounds of a family made up of parents, siblings, uncles, aunts, and cousins (Strathern 1992).

28. Thanks to Gay Becker for this term.

29. Waldby argues that the increased commercialization of tissue transfers has resulted in the loss of "anonymous social trust" in the United Kingdom (Waldby 2002). This analysis rings true given that in Ecuador, where "anonymous social trust" has never been a meaningful category, many IVF participants are worried about the circulation of their bodily tissues.

30. This is especially noteworthy as antiglobalization protests against ALCA, the Area de Libre Comercio de las Americas (in English, the Free Trade Agreement of the Americas, FTAA), shut down the scheduled signing of the agreement in Quito in January of 2005.

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