

LIVING AND DYING IN THE CONTEMPORARY WORLD

A Compendium

Veena Das and Clara Han, editors



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CONCEIVING LIFE AND DEATH

*Stem Cell Technologies and Assisted Conception
in India and the Middle East*

Aditya Bharadwaj and Marcia C. Inhorn

Emerging biotechnologies are radically readjusting the meaning of life and death. In the biotechnological terrain, the seemingly opposing ends of the life course emerge curiously “conjoined” as the very process of conceiving and supporting life becomes imaginable as always pregnant with death. Life mediated by biotechnologies has a fraught and continually evolving ontological status. Following Canguilhem (1989), biotechnological “life” can be imagined as a constant but only partially successful attempt at resisting death. The biotechnological trickery lies in cheating death while unwittingly turning living into resisting the inevitable. To live in the biotechnological mode is to continually negotiate with death—to define and interpret it. As Margaret Lock (2002) so eloquently shows, death is not self-evident; the space between life and death is constructed, complex, and open to dispute. In a similar vein, notions of “good death” (Green 2008), mythic constructs of “sudden death” (Timmermans 1999), and assertions of the “right to die” (Richards 2012) occupy an ambivalent cultural space around the globe, as biotechnological mediations perform the double-jointed task of both resisting death and empowering life.

While anthropology has done much to deepen our understanding of “beginnings and ends of life” (Kaufman and Morgan 2005), the life-and-death questions stalking biotechnologically assisted forms of life have received less critical and cross-cultural attention. This is especially true if we shift our ethnographic gaze from biotechnological interpolations into macro-anatomical forms (Waldby 2002) to conceptions about life and death at cellular, microscopic levels (Landecker 2003). As anthropology grapples with

life and death on the threshold of human tissue and molecular intricacies, it is perhaps timely to revisit not just life but death itself as forever emergent. In other words, if life in late modernity is outrunning the pedagogies in which we have been trained (Fischer 2003), death ought to compel a similar reimagining (Franklin and Lock 2003).

In this chapter, we turn our attention to two of the most powerful biotechnologies of life: stem cell technologies and assisted conception. We argue that in order to make, gestate, and support life, these technologies are in fact replete with “little deaths.” We are not suggesting that some deaths are “little” because they are not devastating or are in some sense insignificant. On the contrary, our intention is to show how both temporality and scale are implicated in the “early ends” of technologically mediated life, and how these “early endings”—having so far received little analytical attention—affect the lives of others. In so doing, we also wish to show how the experience of early life and death is burdened by the bioethical and now increasingly bureaucratically expedient question, When does life begin? Not surprisingly, then, logics structuring the governance of biotechnologies of life around the globe seldom acknowledge or account for the experience of little deaths embedded in “sensibilities populating the everyday” (Das 2012). It is essential to bear in mind that little deaths are not so much about personhood imputed, assumed, or ascribed as they are about persons and institutions directly or indirectly implicated in biotechnologically mediated life-and-death conundrums.

Little deaths in the biotechnological mode can be, ironically, “life altering.” As we hope this chapter will show, they can impact and shape conceptions about loss and premature endings as well as regeneration and perpetuation. Drawing upon our ethnographic immersions into the inextricably linked local moral worlds of stem cell generation and assisted conception in India and the Muslim Middle East, our argument traces five main intersections of life and “little deaths”: (1) the creation and early loss of the “elusive” embryos created in in vitro fertilization (IVF) labs; (2) the altruistic, life-giving donation of embryos that are then “destroyed” for the purposes of stem cell generation; (3) the attempts to prolong the lives of the dying through human-embryo-generated therapeutic stem cells; (4) the calculated “deaths” of excess fetuses created through assisted conception; and (5) the unintended deaths of lives brought into existence through IVF and related biotechnologies. Although the moral and ontological meanings associated with these life/death intersections are multiple and prone to mutation, they nevertheless remain culturally specific, as illustrated through ethnographic vignettes from India and the Arab world.

ASSISTED, DESISTED

From assisted conception to embryonic stem cell generation, the embryonic form has emerged as one of the key ingredients in the biomedicalization of the human life course (Clarke et al. 2010). Stem cell research and clinical application in India, for example, has located the human embryonic form on the intersection of ethical, legislative, and clinical

deliberations. In India today, the figure of “assisted” (created) and “desisted” (destroyed) embryonic forms has become a prominent signifier of biotechnologically assisted life. The biotechnology of embryonic stem cells empowers forces of both life and death, creation and destruction, to work in tandem to assist and support life. While this seemingly paradoxical tension has globally become the subject matter of intense bioethical deliberations and adjudications, Hindu philosophy and cosmology have for millennia accommodated this irony as the underlying force animating the procreative and regenerative capacity of the universe. Like Shiva, the Hindu deity of creation and destruction, belief in life and death symbiosis along with overt expressions of religiosity continue to populate everyday ethics and theodicies, which are produced in India in response to biotechnological interventions into the (dis)orderly flow of life (Bharadwaj 2005; 2009). Whereas the Indian story of assisted conception is as old as the history of IVF itself (Bharadwaj 2002), more recently the abundant availability of embryos as “surplus” corollaries of IVF procedures has fueled unprecedented interest in stem cell research and therapeutics. These scientific developments by necessity dictate the creation and destruction of embryos to generate research-worthy stem lines and therapeutic applications.

The life/death, creation/destruction symbiosis is being pulled into the sphere of emerging bureaucratic and governance protocols in India. These moves are producing significant displacement and ejection of innovative theodicies and nuanced interpretations shaping clinical, scientific, and patient perspectives on biotechnologies. In large part, proposed legislative framings of these developments are drawing on a genre of regulatory enunciations that seek cross-cultural standardization of the human embryonic form as an ethically fraught entity (Bharadwaj 2005, 2009). Although the genealogy of these developments can be traced back to the emergence of “right-to-life” movements in the Euro-American landscape, the stem cell-specific history of these developments in India, indeed as in Euro-America, is relatively recent.

On August 9, 2001, U.S. President George W. Bush allowed federal funding for embryonic stem cell research on those cells already in existence. Globally, only sixty-four lines could meet this criterion. Of these, ten were in India. Shortly after the presidential decree marked some embryos as “destroyed” and thus usable for stem cell research, while others still possessed the “right to life,” the U.S. National Institutes of Health announced that Reliance Life Sciences and the National Centre for Biological Sciences in India would be among ten of the institutions worldwide receiving federal funding for stem cell research. While surplus “American embryos” were now declared “living but orphaned,” and thus “thawable for adoption” by the Nightlight Christian Adoption-sponsored Snowflakes Program (Ganchoff 2004, 765–66), Indian laboratories could be federally funded to “destroy” embryos in order to generate viable stem cell lines.

In India, there is no consensus on the moral status of the human embryo. Different philosophical and religious persuasions continue to define and debate life in an eclectic and open-ended way (Bharadwaj 2005). Nevertheless, the U.S. presidential decree of 2001 proved to be a significant watershed moment. In a deft preemptive move, largely

influenced by the Euro-American ethical and governance protocols, the Indian state began to enact guidelines that would frame “life” in opposition to “death”—very much counter to the aforementioned symbiotic composite of life and death populating the mundane, everyday engagements of Indians with questions of living and dying (Indian Council of Medical Research 2006). The task of ensuring the provenance and strictest ethical scrutiny of embryonic entities became not so much a local cultural response to the question of life and death—that is, how one enables the other—as it did a strategic investment in “future global markets, potential scientific collaborators, and probable international lay consumers of embryonic entities and their ethical/moral thresholds” (Bharadwaj 2009, 247).

REDUCTION, ENHANCEMENT

The biotechnology of stem cells drawn from embryonic sources is embroiled in protracted ethical and moral panics around the globe. This disquiet has come to rest on profound concerns over the ways in which advances in research may precipitate an insatiable demand for the creation and destruction of human embryos. The fear of a limitless demand for “embryonic death” in the service of “life-supporting” therapeutic interventions has polarized public and political opinion for and against such interventions in the United States and beyond. Recent therapeutic developments in India, however, challenge this view, both at the level of established scientific practice and in prevailing public moral uncertainty. The ethnographic focus on a clinic in New Delhi offers a compelling illustration of the therapeutic application of human embryonic stem cells, despite domestic and international regulatory unease at the rapid translation from bench to bedside (Jayaraman 2005).

Since the year 2000, a major New Delhi clinic has offered human embryonic stem cell therapies for a range of disorders such as diabetes, multiple sclerosis, Parkinson’s disease, cardiac conditions, spinal-cord injuries, and Lyme disease. The stem cells at the clinic are all derived from a single, left-over embryo from an IVF cycle. With informed consent from the couple, the embryo was put through a series of tests, including the medical and genetic history of the donors, to determine the viability of any resulting stem cell lines. The clinical director controversially claims that, theoretically, one human embryo can generate enough cell lines to treat the entire human population. Thus for nearly ten years a single embryo has purportedly supplied stem cells for a diverse range of conditions for more than one thousand patients.

This suggestion puts a very different perspective not only on the prevailing “panics and ethics” surrounding the use of human embryos for stem cell generation (Bharadwaj 2012), but also on the very notion of “supplementarity”: an ability of individuals or populations to constitute their longevity through access to the organic forms of other persons (Cohen 2010, 253–54; 2003). If, indeed, a single embryo can divide into perpetuity to supply cells for therapeutic use, then a one-off “death” of “little” magnitude could rapidly

transform into a one-off “sacrifice” imbued with the potential to rewrite the rules of supplementarity. Additionally, while this unwittingly turns the conception story of a therapeutic intervention into a totemic sacrifice for the collective good, it nevertheless carries the potential to assuage globally dispersed fears of many millions of “little embryonic deaths.”

These developments are posed as probabilities in the projective mode, because this radical new technique of generating an unlimited supply of cells from a single human embryo remains hotly contested and outside of the consensible limits of peer-reviewed science (Bharadwaj 2013). The developmental trajectory and enhancement of cells to treat the many intractable and disabling conditions they seek to cure at this clinical facility also offers a fascinating insight into the life/death coproduction in enhancing therapeutic outcomes. From chronic spinal cord injury patients to Lyme sufferers, the dramatic reversal and in some cases enhancement to “near normal” functioning (Bharadwaj 2013) amply illustrates how “transfer of young, pluripotent human cells to old, infirm human bodies disrupts linear life-cycle narratives” (Kaufman and Morgan 2005, 320). Thus, with biotechnologically mediated “little deaths,” the very act of ending one symbol of life (embryo) can rebirth another (stem cell), transforming termination into therapeutic “rebirths” of those with life-threatening conditions.

TERMINATION, CONTINUATION

However, terminations and continuations achieved through biotechnological mediation are not entirely pain free. These endings and potential new beginnings can be life altering, and not just in a therapeutic sense. The notion of death, even at the cellular level, is saturated with meaning, affect, bonds of relatedness, and attachment. These bonds are far removed from the political rhetoric that attributes potentiality to shards of biogenetic substance. The affect and attachments at work here are deeply embedded in intimate biographies, personal struggles, and shared pain. Rekha (a pseudonym), who is a potential embryo donor in a New Delhi fertility clinic, is one among many whose deeply personal, life-affirming stories are produced in the face of little deaths. Ever since the premature birth of her son some eight years before, Rekha has suffered from secondary infertility. Soon after her son’s birth, Rekha became pregnant, but she and her husband opted to undergo what she called a “medical termination of pregnancy” (MTP). Looking after their premature baby had become overwhelming, and thus an abortion seemed like a sensible solution. However, much to Rekha’s dismay, all their subsequent attempts at pregnancy failed. Rekha was riddled with guilt and even contemplated her secondary infertility as divine retribution for “killing [her] unborn child.”

At the time of her interview with the first author (Bharadwaj), Rekha was undergoing IVF in the hope of providing her son with a sibling. She had also been asked by the clinical director to “donate” her excess embryos for stem cell research. Reflecting on this question, she continually reiterated in her interview how embryo donation—if done for a “cause” such

as medical research—might benefit others in due course. She was quick to point out that people who have had the time to “think through” and thus feel “genuinely committed” to making such a contribution should contemplate giving up their embryos for research. As she spoke, she couldn’t help but add that making up one’s mind “for or against” such research was still difficult, since ultimately it is a “thin dividing line.” Indeed, Rekha appeared deeply conflicted, her hands defensively folded against her chest, her voice wavering and uncertain, and her facial expression deeply somber. After a long, thoughtful silence she said, “In the interest of science, it’s OK. After all, some sacrifices were made by some people for research and the advances I benefit from right now. Some sacrifices were made.” She added,

Going through this process, you think differently. If I had naturally conceived a couple of children, I would not think about it, but I feel I am reaping the benefits of someone’s sacrifices. You realize the value of something. . . . I now view an embryo as a child. If I had thought like this before I would not have gone for MTP. So, going through this difficulty [i.e., secondary infertility], you feel differently. Until I went through this process, I viewed it differently. But when it actually hits you, you realize how much of a difference it makes to your life. Otherwise, it’s drawing-room talk. Only when it hurts [do] you realize how much it hurts.

In Rekha’s pursuit of conception, her worldview was riddled by guilt and frustration. The pregnancy termination stood out as a thorny subtext in her reproductive biography. She regretted the decision taken all those years before as she struggled to look after her “preemie baby.” However, this decision and its subsequent biographical reverberations served to forge an empathetic connection with her “terminated” embryo, to the point that she now saw in the embryonic form a potential sibling for her son. Her worldview was shaped not by some rhetorical investment in bioethical, religious, or bureaucratic attempts at ascribing sentient potentiality to an embryo, but rather by a deeply personal struggle with secondary infertility and the guilt of believing that her decision to opt for termination of an earlier pregnancy was now responsible for her current predicament. Rekha used the word *chilling* to describe the thought of giving up an embryo for research. But she also felt that sacrifices had to be made for science. Throughout her interview, she oscillated between the old Rekha, who had opted for the pregnancy termination, and the new Rekha, who was shaped by pain, hurt, and regret.

Rekha’s conflict is not an isolated case. There is ample evidence to suggest that the use of fetal tissue, as opposed to IVF-conceived embryos, for the purposes of stem cell extraction can disturb boundaries between human/embryo and life/death (Bharadwaj 2012). For example, in her paper on her research project in the United Kingdom, Pfeiffer (2008) argues that what made stem cell research involving fetal tissue particularly troubling for women in her study was the “association with renewal, regeneration, and immortality,” which reinstated and developed the “fetus’ physical existence and social biography, the very thing abortion is meant to eliminate” (2008, 2544; 2009).

Indeed, Rekha’s story shows how *both* human embryos and human fetuses become a source of conflict when mediated by painful personal experiences of their loss. Rekha’s “termination” of a fetus is difficult for her to assimilate when she is eventually asked to “give up” embryos in the service of assisting life. These little deaths are inextricably intertwined in her life story, and are difficult for her to untangle. The mutual imbrication of life and death is, as we argue, a prominent feature of assisted conception in general, even though the “life” side of these “hope technologies” (Franklin 1997) is what is valorized within assisted-conception discourses. What remains hidden in these life-enabling discourses are the many “little deaths” involved in the pursuit of life.¹

CONCEPTION, FRUSTRATION

Indeed, assisted conception is replete with death. Although worldwide the IVF industry likes to boast of its success—with five million “miracle babies” now born around the globe (Franklin 2012)—the truth is that millions and millions of IVF conceptions end in “little deaths”: deaths of gametes (sperm and eggs), deaths of embryos, deaths of fetuses, and deaths of IVF babies themselves. Even in the best IVF clinics in the world, IVF success rates are never more than about 33 percent per cycle (Gnoth et al. 2011). But this statistic entails a major erasure: 40 percent of IVF cycles may lead to conception in the best clinics, but many of these conceptions do not yield “take-home” babies, whose existence remains quite elusive for the majority of infertile couples. For many infertile couples, assisted conception is replete with loss, which must be absorbed, made sense of, rationalized, and grieved by infertile couples—husbands as well as wives. Although Rekha’s story bespeaks the heartache of female infertility, men, too, may be infertile, requiring them to face up to their own “defective sperm,” as well as to the considerable losses encountered by them as men and potential fathers who have pinned their hopes for offspring on the life-giving promise of assisted conception (Inhorn 2012).

Until the early 1990s, the only known solution to male infertility was sperm donation, which, although practiced in the West (Becker 2002), is widely prohibited in most Muslim-majority countries (Inhorn and Tremayne 2012). In the Muslim communities of the Arab world and South Asia, most men refuse to consider sperm donation, equating it with mistaken paternity, genealogical confusion, and illicit sexuality (Inhorn 2004, 2006, 2012). Similarly, legal adoption as it is practiced in the West—where a child takes the adoptive parents’ surname, can legally inherit from them, and is treated “as if” he or she is a biological child—is prohibited in Islam for reasons of patrilineal purity and is rarely viewed as a tenable option among infertile Hindu couples as well (Bharadwaj 2003; Inhorn 2003). In the absence of sperm donation and child adoption, infertile men are left with few avenues to fatherhood.

Given these prohibitions, the introduction of intracytoplasmic sperm injection (ICSI, pronounced “ik-see”)—which was introduced in Belgium in 1991 and which overcomes male infertility by using a man’s own sperm—was a watershed event, perhaps particularly

within the Muslim world (Inhorn 2003, 2012). A variant of IVF, ICSI solves the problem of male infertility in a way that IVF cannot. With standard IVF, spermatozoa are removed from a man's body through masturbation, and oocytes (eggs) are surgically removed from a woman's ovaries following hormonal stimulation. Once these male and female gametes are retrieved, they are introduced to each other in a petri dish in an IVF laboratory, in the hopes of fertilization. However, "weak" sperm (i.e., low numbers, poor movement, misshapen) are poor fertilizers. Through their "micromanipulation" under a high-powered microscope, otherwise infertile sperm can be injected directly into human oocytes, effectively aiding fertilization. As long as one viable spermatozoon can be extracted from an infertile man's body, it can be "ICSI-injected" into an oocyte, leading to the potential creation of a human embryo. With ICSI, then, otherwise "sterile" men can father biogenetic offspring. This includes azoospermic men, who produce no sperm in their ejaculate and must therefore have their testicles painfully aspirated or biopsied in the search for sperm. In short, ICSI gives even the most infertile men a chance of producing a "test-tube baby."

First introduced to the Muslim world in Egypt in 1994 (Inhorn 2003), ICSI has led to a virtual "coming out" of male infertility across the Middle East as men acknowledge their infertility and seek the ICSI solution (Inhorn 2012). The coming of this new "hope technology" (Franklin 1997) has repaired diminished masculinity in men who were once silently suffering from their infertility. Furthermore, ICSI is being used in the Middle East and elsewhere as the preferred assisted reproductive technology, effectively replacing its predecessor, IVF. Whereas IVF leaves fertilization up to chance, ICSI does not. Thus, ICSI provides a more guaranteed way of creating "the elusive embryo" (Becker 2000). With ICSI, then, human fertilization is increasingly aided and abetted by embryologists working in IVF laboratories around the world.

As the "only hope" for most infertile men, especially those with serious infertility problems, ICSI has led to an immediate boom in demand for this technology across the Middle East—a demand that has never waned over nearly two decades. ICSI is by far the most common assisted reproductive technology now undertaken in the Middle East, and IVF clinics today are filled with ICSI-seeking men and their wives. For many of these men, the search for ICSI success is relentless. As one infertile Lebanese man stated, "I will try again and again and again. I will never lose hope." Or, as another concluded, "I will try until I die."

However hopeful ICSI has been for Middle Eastern men—who suffer significantly higher rates of male infertility than their Euro-American counterparts (Inhorn 2012)²—ICSI has brought with it untold "little deaths." Such little deaths are apparent in the story of Ibrahim (a pseudonym), a Palestinian man whose ardent desire for fatherhood has propelled him on a valiant and transnational quest for ICSI.

Married for thirteen years, Ibrahim knew that he had a serious male infertility problem within the first year of marriage. "I did many tests," he explained. "And still, the results turned out to be very bad." Speaking to the second author (Inhorn), he then

volunteered, "I have a copy of all my medical reports. I could show them to you on Sunday. Always, the semen count was four to five hundred thousand—very, very weak. And after one-half hour, everything died. There was fragmentation, also."

"Our journey starts here," Ibrahim continued, immediately launching into a story of thirteen failed ICSI attempts between 1995 and 2007. Most of these failed cycles were undertaken at "famous" clinics in Jordan, eventually making Ibrahim convinced to "stop searching in Arab countries." A Palestinian friend in France made an appointment for Ibrahim and his wife, Nura, at an IVF clinic in Rouen. There, a chromosome test of Ibrahim's sperm showed "fragmentation," an indication of a chromosomal defect. Reviewing Ibrahim's case, the French doctors told him bluntly, "We can't do anything for you. And since you did ICSI more than nine to ten times, we cannot do it again, because the French rules say that we cannot do ICSI after four times." They then suggested adoption, which shocked Ibrahim. "That's fine for you," Ibrahim told the French doctors. "But for us, as Muslims, we have a different tradition."

Demoralized but not destroyed, Ibrahim began his "research," drawing upon his global network of relatives and acquaintances in the Palestinian diaspora. Fortunately, one of Ibrahim's Palestinian friends in Los Angeles told him that he would be willing to help with the ICSI quest. Despite the difficulty of obtaining visas for travel to the post-9/11 United States, Ibrahim and Nura's patience paid off. They were eventually allowed to seek medical care in America. There, they visited IVF centers in both Las Vegas and Los Angeles, agreeing that their best chances for ICSI success were at the University of California, Los Angeles, where, in the words of Ibrahim, a "master doctor" was in charge of the IVF clinic.

For the first time in a decade of ICSI seeking, Ibrahim and Nura were offered preimplantation genetic diagnosis (PGD) to determine whether the couple's ICSI embryos were carrying genetic defects, causing repeated ICSI failures. After verifying that PGD was religiously acceptable, Ibrahim and Nura agreed to PGD, and learned that eight of their twenty embryos were free from obvious genetic disease. As Ibrahim recalled, "He [the IVF doctor] told me something funny then. He said, 'You have seven girls and one boy.' I said, 'I don't give a damn shit for girls or boys, doctor! All I want is a child!' So he returned back [to Nura's uterus] three girls and one boy."

Ibrahim and Nura were scheduled to return to Dubai a week after the embryo transfer, and Ibrahim carefully changed their tickets from economy to business class so that Nura and the four ICSI embryos could "recline" in transit. After their return to Dubai, Nura underwent a pregnancy test—again negative. "My God, you cannot imagine how disappointed we were," Ibrahim exclaimed. Calling the anthropologist by her first name, he continued: "In the U.S., Marcia, the trip cost me, with the travel, with everything, around thirty-five thousand dollars. Maybe I've spent more than one hundred thousand dollars in total for all of the [ICSI] trials. If somebody else had done this to Nura, I'm sure she couldn't stand it. Sometimes, I come back home, and I find her crying. The environment here in the Arab countries—I mean, her sister is getting pregnant, my brother's wife is

getting pregnant, and sometimes they cannot stop it [their fertility]! Our family is not interfering, and it's a love marriage. But sometimes, you know, I told her, 'All of the problem is because of me, not you. It's from my side. If you want, we can divorce.' But she refused. She told me, 'If there is going to be a baby, it has to come from you.'

Ibrahim said that he had contemplated going to Belgium, where ICSI was invented, but he had decided against it: "One doctor, he advised us to go to Belgium. But after we tried ICSI in America, I feel that what we do here [in the Middle East] is the same." At the time of his interview, Ibrahim had placed his hopes in a private IVF clinic on the edge of Dubai. Although the IVF physician was a Hindu from India, Ibrahim found him "down-to-earth," a physician who had still "found hope" in Ibrahim's poor sperm profile, with its "dead and dying" sperm.

Furthermore, the clinic employed an "embryo courier" service that could bring frozen embryos to Dubai from as far away as Los Angeles. Ibrahim was very excited about the prospect of transporting his three frozen embryos from the United States to the UAE, but was told by the courier that this would cost approximately twenty-five hundred dollars. Ibrahim laughed, "What the hell! After all I've paid, this is nothing!"

Indeed, the three embryos were flown from Los Angeles in a cryopreservation tank that was hand-carried all the way from LAX through customs at Dubai International Airport. The embryos survived the journey, and with the help of the Indian doctor, Ibrahim's and Nura's "three girl embryos"—made in America and thawed in the UAE—were transferred into Nura's uterus on the Emirati IVF clinic's operating table. Unfortunately, however, on this fifteenth attempt at assisted conception, the three female embryos "died" in utero. Without successful implantation in Nura's womb, Ibrahim's dreams of fathering three little "American-made" Palestinian daughters vanished.

REDUCTION, DEMISE

In Ibrahim's story, a "hope technology" encounters a "hopeless case." In his thwarted attempt to bring forth life, Ibrahim is not alone. Many couples never conceive with IVF or ICSI, and among those who do, many of these conceptive quests do not lead to happy endings. Whereas Ibrahim's story bespeaks the death of defective sperm, the culling of genetically marred embryos that are tested and then discarded, and the expiration of embryos already imagined as little girls, other conception stories move beyond the embryonic phase into the realm of dead fetuses. Indeed, the amount of fetal demise in the world of assisted conception is quite staggering.

To illustrate the frequency of death at the beginning of life, an example from Beirut, Lebanon, seems appropriate. In 2003, the second author interviewed 220 Arab men (mostly Lebanese, Palestinians, and Syrians) about their experiences of infertility and assisted conception (Inhorn 2012). Of this group of 220, exactly 177 of them had already undertaken ICSI. Among these 177 men, there was a grand total of 434 ICSI attempts—274 among the 120 infertile men in the study, and 160 among the 100 fertile

men with infertile wives. Yet, only eighteen ICSI children were born to these men, including thirteen ICSI sons and five ICSI daughters (including one set of female twins). Thus, the so-called take-home baby rate was astonishingly low—only 4 percent. This low rate of ICSI success increased considerably if all conceptions were considered, including current pregnancies (7), ectopic pregnancies (9), miscarriages and stillbirths (29), and neonatal deaths (4). In other words, 66 total conceptions took place after 434 ICSI attempts, for a pregnancy rate (as opposed to a "take-home" baby rate) of 29 percent. This makes the overall success of ICSI in this Middle Eastern population seem closer to global standards. Nonetheless, most of these ICSI conceptions ended in heartbreak and suffering, including life-threatening ectopic (tubal) pregnancies among men's wives, many miscarriages, the stillbirth of seven sets of twins, and the deaths of three ICSI sons (including one with Down syndrome) and one ICSI daughter (due to a congenital heart defect). Recounting their fetal and neonatal losses, men often wiped tears from their eyes. Indeed, these "little deaths" did not feel "little" at all for the Arab men (and women) who had experienced them.

Furthermore, one of the most "chilling"—to use Rekha's term—forms of fetal demise in the world of assisted conception occurs when "excess" fetuses are intentionally aborted. So-called fetal reduction might be thought of as the "dirty little secret" of assisted conception. In many Western countries (although not the United States), legislation or professional bioethical guidelines prohibit the placement of more than two IVF or ICSI embryos back in a woman's uterus. This is to prevent the possibility of a so-called high-order multiple pregnancy (HOMP) with triplets, quadruplets, or beyond. HOMPs are "risky" pregnancies—both to the mother and to the fetuses—given the higher likelihood of miscarriages, stillbirths, or the birth of very preterm, low-birth-weight babies. In other words, despite the purported "miracle of multiples," such pregnancies often end in tragedy, with preterm birth, neonatal death, and maternal morbidity and even mortality. Among surviving high-order multiples, a lifetime of disability may await.

Despite these risks of HOMP, clinics in many parts of the world attempt to boost their IVF and ICSI success rates by transferring three, four, five, or even six embryos back into a woman's womb (Inhorn 2003). Although such multiple-embryo transfers increase the likelihood that a pregnancy will be achieved, that pregnancy may be literally "overloaded with fetuses"—fetuses that will compete for space and nourishment and lead to preterm labor.

To prevent such an eventuality from occurring, women with HOMP are often encouraged to undergo "multifetal pregnancy reduction" (MFPR), also known as "selective reduction." MFPR is basically a procedure of selective abortion, which, although clinically accepted as a "therapeutic" option in pregnancies with three, four, or more fetuses, remains highly controversial. Although several techniques of MFPR have been established, the most common is the injection of potassium chloride directly into the fetal heart through the woman's abdomen at ten to twelve weeks of gestation. This injection stops the fetal heart from beating, and, depending on the number of fetuses and injections, may be used to "remove" one or more fetuses in a HOMP pregnancy. Most HOMP

pregnancies are thus “reduced” to twins—a number that is often perceived as clinically manageable. The risk of MFPR is that “reduction” of some fetuses will jeopardize the others. Indeed, it is not uncommon for women to “lose” the entire pregnancy.

Women who have undergone MFPR are often deeply shaken by the experience—equating this “reductive” technology with the “killing” of some of their precious IVF babies. For example, in 2007 the second author interviewed 125 infertile couples in the United Arab Emirates, five of whom had undergone MFPR outside of the country.³ For most, the experience was emotionally fraught—even in the absence of moral qualms about abortion. To take but one example, Aisha (a pseudonym), a thirty-year-old Indian Hindu woman currently living with her husband in Dubai, had undertaken IVF in the UAE, becoming pregnant with triplets. Her IVF physician recommended that she return to India for a reduction of the pregnancy to twins. Although abortion is legal in India, it is not allowed in the UAE, even for “therapeutic” purposes such as HOMP. Thus Aisha was forced to travel back to Bombay for the fetal-reduction procedure.

However, Aisha’s case was complicated: among the triplets were identical twin fetuses sharing the same amniotic sac. The “reduction” of one twin led to the demise of the other, resulting in a singleton pregnancy. In an interview that focused almost solely on this experience, Aisha recounted the “trauma” of the fetal reduction:

It was very, very traumatic. The doctors said there could be complications with twins in the same sac, and we definitely couldn’t keep triplets, which would be too much of a risk. And we didn’t want to gamble. But it *is* traumatic. After all of the [IVF] treatment, this baby does look . . . it’s precious, you know? I *would* have kept all three. That would have been totally fine, and my husband was the same as me. But the radiologist, and the gynecologist, and even my family doctor were all saying the same thing: “This is the best thing that you can do, and it’s better not to get all emotional.” But we were both *very* emotional about it. They did the reduction with one twin, but we lost both of them. They did the reduction on one, but we lost both. So now we’re down to one.

Aisha added quietly, “In the end, however, it was obviously our decision. I have lots of family there in Bombay, but I didn’t tell them. I decided to keep it quiet. They didn’t even know about the pregnancy. I don’t think I’d be in the mood to make any small talk after this, with people asking, ‘What did you do?’ We decided to do it quietly, so we wouldn’t have to describe the trauma, the inertia.”

In Aisha’s story we see clearly how “beginnings” are also “endings” in the world of assisted conception. In Aisha’s case, “too much life” has taken hold in her womb, such that some of these lives had to be “taken” through fetal reduction. Although she stresses her own agency in the matter (“it was obviously our decision”), Aisha’s compliance with doctors’ demands means that she must “take lives”—lives that, to her as an infertile woman, are particularly precious. The experience—which she recounted to the anthropologist almost as a confession—leaves her doubtful and shaken. Aisha herself wanted

to keep all three babies, as did her husband. As Hindu Indians, they were not morally opposed to abortion, and Aisha noted that abortion is widely available in India. However, Aisha’s own abortion of IVF fetuses leaves her traumatized—in a state of emotional “inertia.” “Choosing” to abort precious IVF fetuses is perhaps one of the most difficult decisions that infertile women like Aisha will ever make. Indeed, multifetal pregnancy reduction is perhaps the single clearest example of the morally ambiguous intersection of life and death in assisted conception, where hoped-for beginnings become aborted endings. Of all the “little deaths” of assisted conception, it is these “chosen” endings of “miracle babies” that are experienced as especially and acutely painful.

CONCLUSION: LITTLE DEATHS, BIG LOSSES

In the globalized late modernity of the new century, multiple, emergent meanings are ascribed to life conceived and maintained through biotechnological mediation. We can say that biotechnologies are reconceiving preconceived notions of life and death. Here we have attempted to trace the intersections of life and death at the nexus of new millennial biotechnologies. As the foregoing ethnographic vignettes have shown, in the globalized, biotechnological landscape, “little” deaths can generate “big,” life-altering losses. In producing stem cells and assisting conception, embryos are made, discarded, donated, implanted, and lost; fetuses are gestated, miscarried, and reduced; and “take-home babies” may or may not be brought to life through biotechnological means—and more often not.

Although the “life-giving” qualities of therapeutic stem cells and assisted conceptive technologies are most often valorized, our chapter has focused on the many “little deaths” that normally elude our analytical gaze. As we have attempted to show through the stories of Rekha, Ibrahim, and Aisha, the “little deaths” of purportedly life-giving biotechnology may feel quite “big” to those who endure them. Through these stories, we have tried to show how the life-and-death dialectic is not only technologically determined and defined, but also bound up in everyday bonds of kinship, conjugality, child desire, and the search for therapeutic resolution. It is in these everyday, affect-saturated acts of both accommodating and resisting death that we can fleetingly glimpse the Janus-faced nature of the biotechnologies of human life. Such technologies entail life-enabling sacrifice; stalled births and stillbirths; the death of biogenetic tissues such as sperm; and destroyed embryos and fetuses as “killable” bare life. As anthropology tracks these emergent meanings, it becomes obvious that death, like life itself, remains emergent, context sensitive, and ambiguous.

At a moment of twenty-first century history that holds great promise for future technological salvation, it seems quite salient to pause, to reflect, to urge caution, to critique (Bharadwaj and Glasner 2009; Inhorn 2012). In our own ethnographic worlds in India and the Middle East, we see the many “little deaths” that account for “big losses” in twenty-first-century biotechnological modes of being. In the final analysis, it seems

imperative that we illuminate these local and global complexities, for the biotechnologies of human life—though life making and sustaining—have significant consequences for death itself.

NOTES

1. Perhaps pregnancy loss and fetal demise are seen as exceptionally morbid topics, because, with few exceptions (Cecil 1996; Layne 2002), they are poorly covered in the anthropological literature.
2. In most Western IVF clinics, approximately half of all cases involve male infertility. In clinics in the Middle East, the percentages are much higher, ranging from 60 to 90 percent. Most of this male infertility is probably genetic in nature and related to high rates of consanguineous (cousin) marriage across the region. Indeed, in the Middle East male infertility tends to cluster in families (Inhorn 2012; Inhorn et al. 2009).
3. Fetal reduction, along with all forms of abortion, occupies a controversial legal status in many Muslim Middle Eastern countries, including the UAE. Thus most IVF physicians in the UAE will not perform fetal reduction and instead send their patients outside of the country, to India or the United Kingdom.

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