The case of Anna Johnson is a familiar one by now: the African American woman acting as gestational surrogate mother for Crispina and Mark Calvert decided during the pregnancy that she didn’t want to surrender the child soon to be born. When she sued the Calverts to end her surrogacy contract, the courts decided against her, finding that the Calverts were the parents of the baby boy, since the embryo had been created from their gametes.⁴ We may be less familiar with the case of Kawana Ashley. In 1994, in Clearwater, Florida, that nineteen-year-old girl shot herself in the stomach. Taken to the hospital, on March 27 she was delivered by emergency cesarean section of a baby girl. “After a week, [the baby’s] underdeveloped kidneys began to fail and her body filled with fluids. She died April 11.” According to newspaper reports, Ashley “claimed she didn’t have enough money for an abortion.” She was charged with third-degree murder and manslaughter: newspapers reported allegations that she killed her “6-month-old-fetus” “by shooting herself in the womb [my italic].”²

The Johnson/Calvert case is a classic example of assisted reproduction, while the Ashley case is not explicitly connected to the medical practices once called “the new reproductive technologies,” and more recently referred to as assisted reproduction, a label that interestingly obscures technology in the guise of simple human assistance.³ Yet I begin with these two cases because I see in both of them ways of thinking and behaving exacerbated by the practices of assisted reproduction: positing a fetal subject; thinking of the gestating woman as interchangeable object rather than unique subject; viewing the fetus and the mother as social, medical, and legal antagonists; and collapsing the broad
range of activities and practices that are motherhood and fatherhood to the narrow fact of gamete contribution. Taken together, these tendencies reveal an increasingly ambiguous boundary between fetus and mother and an increasingly, troublingly narrow definition of parenthood. In what follows, I will first examine the ways we are managing boundary ambiguity, returning in my conclusion to the issue of definitional precision.

As assisted reproduction has increasingly been naturalized, through law, commerce, and medicine, the distinction between fetus and mother has become an increasingly fuzzy one. With the breakdown of the firm line between inside and outside, between a potential future life and a current life possessed of social, legal, and medical status, the fetus inside is increasingly treated as if it were already outside, the rightful subject of medical, social, and legal intervention. Moreover, the mother-to-be is becoming less a civil, legal, or medical subject than the subject of policing by all three institutions.

While assisted reproduction is destabilizing the fetal/maternal relation, another boundary is also becoming more ambiguous—that between human and animal. Both boundaries were dramatically challenged in July 1996 by Ian Wilmut’s cloning of Dolly, the Finn Dorset ewe, an event that called into question “nothing less than whether human procreation is going to remain human, whether children are going to be made rather than begotten,” according to biochemist and philosopher Leon Kass. Species and generation are boundary concepts, produced by the social and material technologies, institutionalized discourses, epistemologies, and critical practices that come together in assisted reproduction, including, should the technology be extended to human beings, in cloning. In what follows I will consider how a variety of social technologies—literature, legislation, law—function to produce and manage the generational (fetal/maternal) and species (the human/animal) boundaries.

Generation

The two terms at the generational boundary—fetus and mother—are not symmetrical. We now have a great range of increasingly precise terms for the products of conception, ranging from zygote to pre-embryo, to embryo, to fetus, but we have no customary term that captures the in-between subject that is the gestating woman. Two processes of subject formation occur in parallel during gestation: as the fetus is developing, so too the gestating woman develops, from a woman who may be pregnant, to a woman who is pregnant, to a woman who is carrying an embryo, to (after quickening) a woman who is carrying a fetus, and finally (with birth) to a mother. The term mother is relational in nature, carrying implications about a maternal subject as well as invoking the discourses of psychoanalysis, sociology, history, art, religion, and

literature. Full as it is, however, it is also empty: when the gestating woman is known as the “mother,” the term lacks any precision about the in-between state she experiences while the fetus gestates, granting her a subjectivity in advance of her condition (as any nervous first-time mother-to-be will attest). We lack a quick, specific term for her complex, liminal subject position.

Perhaps the asymmetry in these terms results from the increasing use of visualization technologies within reproductive technology. The different stages of embryonic/fetal life are more and more mediated by ultrasound and other fetal visualization technologies, as was first demonstrated by Rosalind Petchesky’s groundbreaking study of the power of fetal images. The proliferation of ultrasound “snapshots” of the intrauterine fetus in baby albums attests to the increasing role of medical and technological mediation in our mental conception of the fetus. And while this has received less emphasis or analysis, it is also arguable that the rising gynecological and obstetrical reliance on visualization technology has catalyzed a similar shift in our conception of the mother, perhaps including an increasing sense of her permeability. Routine as well as diagnostic ultrasound shapes the subjectivity of the gestating mother along with the visualization of the changing fetus, making the pregnancy seem “more real” and thus motherhood more imminent. While both fetus and mother-to-be are equally mediated by the powerful visualization technologies used in contemporary reproductive medicine, in our turbulent new cultural imaginary we increasingly give more concrete social space and more subjectivity to the fetus than to the gestating woman.

One way of grasping the decreasing subject position available to the gestating woman of today is to consider how pregnancy has been represented and understood in earlier historical periods. Studying the medical case records of Dr. Johannes Storch of eighteenth-century Germany, Barbara Duden has found that in that earlier era a pregnant woman’s experience had a central determining effect on how pregnancy was conceptualized. In Storch’s era a woman’s testimony that quickening had occurred established the existence of the pregnancy. However, that testimony more definitively constructed the woman as a mother-to-be than it shaped the contents of her belly as unquestionably a fetus, rather than a tumor, a growth, “wind,” or any of a range of other possibilities. “Greater certainty came after the fourth month, when the fruit quickened in the womb...but the true thing hidden behind a big belly came to light only with the birth. Prior to that there were no certain prognoses.” Moreover, it was the woman’s testimony and not the doctor’s measurements or palpations that determined the pregnancy’s anticipated duration and outcome. “Children were born from women; the womb had not yet become part of a reproductive apparatus.” Clearly, pregnancy was a far more ambiguous process prior to the nineteenth century than it is today, and Duden’s work
suggests that the sociomedical model for the fetal/maternal relation privileged the experience and testimony of the pregnant woman as a crucial guide through its complex territory.

The contrast between the pre-nineteenth-century understanding of pregnancy and our contemporary Western view reveals that once the pivotal experience of quickening is marginalized, so too is the role of the pregnant woman. Whereas once the interior space of the woman was unavailable to the scientific gaze and pregnancy was marked by the woman's testimony that she had felt the fetus move, now the woman's own experience of internal fetal movements is relegated to the unvoiced and unwarranted realm of private experience, while the interior space of the woman is available for all to see as part of the technologized state that Anne Balsamo has called "the public pregnancy." Duden again is helpful here:

The demise in the social status of quickening is an event that brings an important paradox to the surface: in the course of the nineteenth century, female inners and interiority become medically, administratively, and judicially public while, at the same time, the female exterior is privatized ideologically and culturally... One the one hand, the newly discovered "naturalness" of domesticity and motherhood... place women in the "private realm" in law, education, and ethics. But at the same time, science discovers and professional control and mediate her womb as a public space.

One way of understanding the meaning of this shift from an emphasis on maternal testimony to a reliance on medical imaging and measurement is as a battle over representation. As David Theo Goldberg has demonstrated, post-Enlightenment moral culture increasingly shaped the notion of rights to the minimalist view that emphasizes equal opportunity and equal treatment over equality of result. In this view, based on the utilitarian calculus, "the rights of each becomes a matter of the power of and over the means of representation." Goldberg's observation illuminates the increasing fetal/maternal disjunction and the consequent construction of fetus and gestating mother as social, legal, and medical antagonists. Constant improvements in fetal monitoring ensure the production of ever more accurate and detailed fetal representations and the increasing authority of such representations given medicine's investment—both monetary and psychic—in their continuous production. However, ever since Freud asked "What does woman want?" the medical community has had notorious difficulty in ascertaining and accurately representing the subject position, desires, needs, and capacities of woman—and that includes the gestating woman.

Representation always has an excess, however. Even while figuring the increasingly authoritative fetal subject, representation may also create a space reaffirming maternal subjectivity. An audaciously bitter comic novel published in the United States in the autumn of 1994, at roughly the same time as the Kawana Ashley case, figures the very conflict over the means of representation formulated by Goldberg, as it demonstrates technological management of the fetal/maternal boundary, and conflict over the means of, visualization. The plot of the novel is worth tracing in some detail, in order to demonstrate how visualization technology shapes its vision of assisted reproduction. Madeleine Barthelemy, a young woman nauseated by all forms of physical desire, marries Oswald Kremer, an elderly accountant whose obsessive-compulsive scientific monitoring of physicality promises her relief from the female sensuality. Indeed the abjection, she fears. Kremer's appeal for Madeleine lies in his ability to account for, even to compass, her body with the precise taxonomies of medicine: "He was truly possessed with a mathematical itch, and in just a couple of weeks after his wedding he had already found his wife's equation: he was able to give the weight of her spleen, her kidneys, her liver, her bowels, and to gauge her average heartbeat over a twenty-four-hour period, and he also knew everything down to the circumference of her every last beauty spot and the diameter of her every last hair." (5). As befits her need for control, Madeleine would have preferred "being inseminated by a great savant—say, a Nobel Prize winner, an elite mind" (5). However, that is impossible, and Madeleine finds herself pregnant by her husband. She is forced to play the genetic lottery, rather than selecting her "progeniture like an item in a department store" (7). While she thus escapes the traffic in gametes and fetuses that plays so large a part in reproductive technology, she has not escaped commodification entirely, for she decides to subject the fetuses to a rigorous course of prenatal education. With the assistance of Dr. Fontane, her obstetrician, she feeds a barrage of information into her womb through a range of miniature speakers inserted in every available maternal orifice. The deluge of information finally catalyzes a response: one morning, when Madeleine is feeling "disheartened and miserable about birthing a garden-varietv larva," she hears "two voices twigging and begging: 'More, more!'" (17). A sonogram confirms that she is carrying twins, and she immediately names them Louis and Celene, a detail that attests to the power of ultrasound and other visualization technologies to construct the fetal subject.

Although both fetuses are subjected to the same intense dose of prenatal education, it affects them differently. The female twin is vanquished; the male prevails. At the birth of little Celene, a would-be scientist already in the womb, the appalled audience of physicians, publicists, and the public watches her draw
her first breath only to forget every last bit of her prenatal education: “Instead of the bewitching creature who was going to curtsy and then squeal, ‘Where is the research program on the human genome?’ they discovered a dreadful, mucus-covered mite with a wrinkled face. Terrified by the noise and the light, it could only stammer: ‘Arrheu, Arrheu!’” (46). The remaining fetus, Louis, has also been rendered prenaturally intelligent by his crash course in utero. Yet having seen what birth did to his twin sister, Celene, Louis is too intelligent to acquiesce in being thrown out of the maternal haven into the dangerous world. Instead, he refuses to be born. Staying in his cozy uterine control room, he aspires to control the world, relying on the same visualization technology that earlier was used to monitor him in utero: “His garret of mucus now resembled the instrument panel in a jet cockpit: several monitors, a video screen, earphones, dozens of flashing signal lights, a computer terminal, an ultrasonic radiodophone, and a fax machine situated him at the center of a gigantic communications network, an immense nervous system that linked him to the four corners of the world” (100–101).

Bruckner’s novel dramatizes the shift from the notion of the embryo as object of scientific control to the new notion of embryo-as-controlling-subject. “The introduction of new monitoring technologies has the consequence of bringing both the obstetrician and the pregnant woman into a system of normative surveillance,” Balsamo has observed.18 Bruckner’s narrative takes the return of the gaze to its logical conclusion: not only does visualization serve as a means of control over the fetus, but now it acts as a means of control by the fetus, not only over the obstetrician and the gestating woman but over the world beyond her womb. Indeed, it is the fetus who has the best view of all, both of the world outside and of the inside of his mother’s body:

A small gadget, a miracle of microscopic engineering that some physicians lent to Louis, was to confirm him in his role of shepherd of the maternal flock. This doohickey consisted of a pair of infrared binoculars that combined the functions of a telescope, a magnifying glass, and a telephone: not only could you see things near or far, but also, thanks to an incorporated mike, you could speak to whatever the eyes picked up. With the help of these glasses not a particle of his mother’s body would escape the tot; he could view the very core of any object, down to the nucleus of every cell. (131)

Standard medical practice increasingly subjects the pregnant woman’s body, and her activities, to exhaustive, invasive scrutiny. We can recall the 1960s film Fantastic Voyage, in which a team of scientists led improbably enough by Raquel Welch journeyed into the bloodstream of a fellow scientist in order to cure him of some dangerous disease. Bruckner’s involutional twist on this familiar paradigm reverses the direction of power. “Louis would have much preferred being miniaturized himself, piloting a bathyscape through Mom’s veins, chugging through her tracheal arteries, toshoganning through her digestive tract... However, since science was unable to shrink a human being to the size of a microbe or bacterium... Louis had to content himself with having only his gaze penetrate the maternal apparatus” (131). A shift in the site of privileged subjectivity has taken place. Now it is the fetus himself—rather than the physicians, miniaturized or not—who uses scopic power to penetrate the mother, colonizing her with all of the complex technological apparatus hitherto used on “the products of conception.” Woman’s subjectivity has been elided; instead, Bruckner gives us the embryonic or fetal subject whose rights exceed those of the already born, particularly of women.

Bruckner’s embryo/fetus also reverses the direction of scopic power, from the fetus as object of scientific observation to the society as the object of critical fetal scrutiny. The modernist control aspirations articulated by geneticist Hermann Muller—“To gain adequate control over the world of things of our own size... we must first seek knowledge and control of the very small world”—are thus literalized with comic force in Bruckner’s postmodern parable, as Louis’s scopic invasion of his mother’s private spaces enables him to achieve nearly total dominance of the world beyond the womb.19 The scopic scrutiny leveled on the world by Bruckner’s fetus resembles the increasing fetocentric position of the legal system, whose interventions reflect an almost panic obsesiveness with what must be managed in order to make things sufficiently safe for the not yet born.20

Yet such intrauterine safety has its costs. Finding to his horror that his body is gradually “fossilizing, returning to his embryonic state,” Louis announces an impending apocalypse, planning to take the world down with him. “The defeat of the old world [is] slated for... the exact date on which Louis, five years earlier, had refused to be born, to lend himself to the human comedy. A shudder went round the world: What if the Super-Microbe were telling the truth?” (192). Now indeed fetus and mother are antagonists. Once more, visualization technology is integral to Bruckner’s vision, but now the reliance on VT has an unexpected result. While it has generally been the case that “the same technological advances that foster the objectification of the female body through the visualization of internal functioning also encourages [sic] the ‘personification’ of the fetus,” Bruckner’s novel inverts this dynamic.21

Shaking off her lethargy, Madeleine works with her obstetrician to defeat the embryo’s destructive intentions. They once again wire up “the still semibedridden geneticis... with cables and loaded down with cameras scanning every square inch of her belly” and subject Louis to the same technological barrage of information, sight, and sound that created him (205).
The Human Embryo Research Panel focused exclusively on the potential of human embryos for research purposes, including the development of new treatments for diseases. The panel was established by the National Institutes of Health (NIH) in 1994 to address concerns about the ethical implications of research involving human embryos.

The panel's report, "Human Embryo Research Panel: Final Report on the Ethical Aspects of Human Embryo Research," was released in 1996. It concluded that research on human embryos was ethical and could be conducted under strict guidelines to protect the interests of individuals and society.

The panel's recommendations included the establishment of a national registry to track the use of human embryos in research, the requirement for informed consent from donors, and the prohibition of research on embryos derived from donor eggs and sperm.

The panel's work was controversial and sparked debates about the ethics of research involving human embryos. Some argued that the research was morally acceptable, while others argued that it was ethically questionable due to the potential harm to embryos.

Regardless of the ethical debates, the panel's recommendations have had a significant impact on the field of embryonic research. The NIH has continued to fund research involving human embryos under strict guidelines.
twins, which are acceptable because a product of chance); the notion of the brain as an intact organ not subject to human manipulation (except through noninvasive environmental stimulation known as teaching, and parodied in Buckner's novel); the notion of a distinct boundary between humans and other species and between humans and machines.

Two related procedures raise such clear problems that the NIH explicitly draws on extrascientific reasons for proscribing them: interspecies uterine transfer and the formation of chimeras. More than half a century earlier, philosopher Anthony Ludovici argued that interspecies uterine transfer would degrade the human species: “It is probable, therefore, that in the early days of extracorporeal gestation, the fertilized human ovum will be transferred to the uterus of a cow or an ass, and left to mature as a parasite on the animal’s tissues.... And with this innovation, we shall probably suffer increased bestowment and intensified bovinity or asininity, according to the nature of the quadruped chosen.” In 1994, the creation of human-animal and human-human chimeras was disturbing to the Muller Report panel for very similar reasons:

It is theoretically possible to make chimeras between human embryos and closely related primates, such as chimpanzees but... the fetus would have cells derived from both species in all tissues. It might be possible for the chimeric fetus to have large parts of the brain and gonads derived mostly from primate cells and other parts of the body derived mostly from human cells, a situation that would, from both a medical and ethical standpoint, be totally unacceptable.

Although the panel specifies that “the fetus would have cells derived from both species in all tissues,” the continuing discussion points to just what is threatening about this human-animal chimera: the possibility of either a brain or of gonads that are primate. While it is clear that there are strong scientific and social reasons why the creation of such a chimera would be problematic, the focus on the gonads and the brain suggests that the image generates specifically devolutionary anxieties. Although the Muller panel proposed prohibiting such research because of the possibility of immunological rejection, the importance of “maternal-fetal placental interactions,” and the crucial “beginnings of mother-child bonding and of human relationship,” only the devolutionary anxieties of the early years of this century can explain the powerful phrase with which the report concludes its assessment: “The Panel finds it repugnant to experiment with such relating between a human fetus and a nonhuman gestational mother.” The Human Embryo Research Panel puts the role of the mother in center stage, stressing her crucial role both during gestation and in early infancy. The Muller Report thus effects a striking reversal

of the tendency reflected in the Kawana Ashley case with which I began, and which I argued is nurtured by assisted reproduction: to privilege the fetus and ignore the mother.

How do we explain the interesting reversal in the value accorded the maternal position in these two examples of boundary negotiations associated with assisted reproduction? When the fetal/maternal boundary is under contestation, as in Buckner’s novel, the fetal position is privileged over the maternal. Yet as the Muller Report reveals, in the case of the human/animal boundary, the maternal position is resurrected in the guise of “maternal-fetal placental interactions” and “mother-child bonding,” in order to protect a boundary that is perhaps even more highly charged: the human/animal. The strategic reversal marks which site of privilege is being challenged and which is seen as the abject category: in contrast to the categories “fetus” and “human being” (both seen as under attack), the categories “mother” and “animal” are inherently (if unconsciously) set as parallel, dangerous terms.

From Reproduction to Replication

I have been arguing that we fly the flag of convenience when we negotiate the generational or species boundaries under the auspices of assisted reproduction. When the interests of technological progress require it, we grant the fetus proleptic personhood, civil status, and medical and legal rights. But when the interests of species supremacy require it, we reverse the valence, affirming the rights of the “mother” and her crucial role in pregnancy and child rearing. Not only are the meanings of mother and fetus subject to negotiation and construction, so too are the meanings of “human” and “animal,” as we see when we return to consider the cloning of Dolly.

Dolly was cloned not only in order to produce genetically engineered sheep whose milk would contain drugs targeted for humans but also to produce transgenic sheep (and other animals) whose organs, less likely to provoke immune system rejection, could be transplanted into human beings. As Ian Wilmut explained, “There are about 160,000 people a year who die before organs like hearts, livers, and kidneys become available to them.” Cloning “will be an effective way of finding treatment for these conditions.” The implications of such transgenic animal-human organ transplantation, or xenotransplantation, had already been given serious consideration when Dolly was created. On 16 January 1997, only half a year after her birth on 5 July 1996, Britain’s Advisory Group on the Ethics of Xenotransplantation, chaired by Professor Ian Kennedy, head and dean of the Law School, King’s College, London, made plain the implications of such a program of farming genetically
engineered organs: “We need to consider whether there is a basic identity in humans with which it is wrong to interfere and whether these procedures alter humans such that their identity, as humans, is altered.” The advisory group had been given its charge by the British secretary of state to examine the ethics of transplanting organs from nonhuman animals to people. “If xenotransplantation proceeds and develops,” the advisory group concluded, “with the genetic modification of animals with human genes and the transplant of animal tissue into humans, the distinction between humans and animals could be perceived, at some point, to break down.”

The cloning of Dolly threatens a border even more fundamental than the human/animal boundary, however. While current techniques in assisted reproduction challenge the boundaries of gender and species, the technique of cloning challenges another boundary, perhaps even more fundamental to our thinking than either generation or species, although implicated in both of them: the boundary between reproduction and replication. We have gone from the binary model of reproduction common to humans and other animals to a model based on the proliferation of sameness, be it bacterial budding or rhizomic proliferation. The technology of cloning, if applied to human beings, could arguably challenge not only our definition of “human” but also the broader dominions on which it rests: our membership and dominant position in the animal kingdom.

Yet here again, the management of boundaries produces curiously pragmatic and contradictory alliances, as we can see in the way the press managed the sequelae to Dolly’s birth. The Roslin laboratory recently released the news that Dolly, the cloned ewe, had become a mother. As Science News reported it, this fact that Dolly has “had a little lamb” confirms “that she is able to breed normally and produce healthy offspring.” Even as the new technology of replication is celebrating its accomplishment, the social technologies of public relations and the print media swing into action, reinstating the “natural” function of reproduction and affirming boundaries that Dolly’s cloning so recently challenged, those of generation and species. With the reproductive norm reinforced, the sequence of generations and the dominance of the human species are reassuringly reestablished. An unspoken species hierarchy, enforced by the allusion to the nursery rhyme “Mary Had a Little Lamb,” subordinates Dolly to her reproductive and social model, Mary. The human ownership of animals as property, and the notion of generational continuity, are surmounted to this new commodified method of animal replication: once again, boundary relations have been redrawn to enable this new, potentially profitable technology of cloning to function without disrupting the system of hierarchized generational and species boundaries from which it originated.

Managing Boundaries through Representation

I would like to close with a thought experiment: let’s return to the cases of Anna Johnson, surrogate mother for John and Crispina Calvert, and Kawana Ashley, the pregnant woman who attempted suicide—and consider them in relation to the birth of Dolly. Let’s ask how these two cases would be different if the fetus with which each woman was pregnant had been cloned. Recalling Goldberg’s observation that in post-Enlightenment moral culture “the rights of each becomes a matter of the power of and over the means of representation,” we might initially find ourselves arguing against cloning, because of the way that new technology would produce an even more objectified mother, an even more objectified fetus. We might wonder how Anna Johnson could win even visiting rights, if the child to whom she gave birth were the identical clone of the commissioning mother or father; what Kawana’s fate would be, if the fetus injured when she attempted suicide had an advocate—visually and genetically indistinguishable—outside the womb. The authority of a fetal subject—powerful enough in the imaginary to generate Bruckner’s frightening “divine child” and to transmute Kawana Ashley’s attempted suicide to attempted murder—would take on a whole new meaning if the fetus were genetically identical to someone already alive, someone with the power, status, or genetic excellence (by whatever measures) to merit cloning. And if through cloning combined with genetic engineering that child had been enhanced not only to prevent life-threatening diseases but also to extend life or broaden physical capacities, what sway would such a fetus have over the unenhanced woman carrying it to term?

Different as this scenario seems from the stories of “natural” pregnancy and assisted reproduction discussed earlier, it shares with them the crucial power of representation in shaping our sense of options. At issue is not whether the fetus is genetically “superior” to, identical to, or simply just resembles the commissioning “parent” from whom it is cloned but the broader question of how representation leads us to understand the very terms parent and mother. Until the contribution of Kawana Ashley and Anna Johnson to the children they bear is factored into the definition of parenthood, until their experience is deemed as significant as the potential life experiences of their fetuses, the boundaries destabilized by assisted reproduction (even if it includes “assisted replication”) will be restabilized to affirm the status quo. And there will be more Anna Johnsons and Kawana Ashleys.
Notes


1. As Time magazine reported, "A California court rules that bearing a child is not motherhood." Susan Thift, "It's All in the (Parental) Genes," Time, 5 November 1990, 77.

2. Centre Daily Times, 10 September 1994, 10A.

3. A significant act of elision, or black boxing, takes place in the change in terms, for the act of technological intervention is now represented, more benignly, as simply human "assistance."

4. Recently, law and medicine have worked together to redraw that boundary. Environmental agencies have begun to record cases of fetal alcohol syndrome. Legislation has been introduced in several states to regulate the sale of alcohol to pregnant women. Under the foregoing laws, which were in effect on 1 July 1998, "relatives or friends can commit pregnant women to emergency detoxification centers for up to two days," and judges can confine drinking women to "treatment centers for as long as one month."


7. "Embryo: in humans, the developing organism from the time of fertilization until the end of the eighth week of gestation, when it becomes known as a fetus." National Institutes of Health Final Report of the Human Embryo Research Panel, 27 September 1994, 103 (hereafter cited as "NIH report").


11. Duden argues that "the demise in the social status of quickening is an event that brings an important paradox to the surface: In the course of the nineteen century, female ins and incontinence become medically administratively, and judicially public. At the same time, the female exterior is privatized ideologically and culturally. These opposed but linked tendencies are both characteristic moments in the social construction of 'woman' as a scientific fact, as well as in the creation of the citizen in industrial society." Disembodied Women, 95. See also 26.


16. Here Kremer recalls Edwin Jolles' The Sugar Mother, who records all of his own physical changes in his "book of the body."


20. In its sense of the world as too risky a place to be born into, Bruckner's novel echoes Laura Freihs's brilliant little short story "My Mama Spoils Me," in which a thirty-seven-year-old fetus refuses to be born because it's safer to stay in utero. Freihs's story explicitly and ironically contrasts that fetal-protection agenda with the lack of concern for human and animal rights its proponents reveal.


22. NIH report.

23. Duden, Woman Beneath the Skin.

24. NIH report, 51.

25. Ibid., 94–96.


27. NIH report, 43.

28. Ibid., 96; my italic.


31. Kennedy, Animal Tissue into Humans, sec. 4.41, p. 68.

32. Ibid., sec. 4.42, p. 68.


34. If any binary model of reproduction has an asymmetrical gender bipolarity as its shadow presence, thanks to the long-standing vitalism/mechanism controversy, cloning is shadowed by the fearful notion of machine replication.

