THE TECHNOCRATIC MODEL OF BIRTH

Robbie E. Davis-Floyd

This chapter appeared in Feminist Theory in the Study of Folklore, eds. Susan Tower Hollis, Linda Pershing, and M. Jane Young, U. of Illinois Press, pp. 297-326, 1993.

> "But is the hospital necessary at all?" demanded a young woman of her obstetrician friend. "Why not bring the baby at home?"
>
> "What would you do if your automobile broke down on a country road?" the doctor countered with another question.
>
> "Try and fix it," said the modern chaffeuse.
>
> "And if you couldn't?"
>
> "Have it hauled to the nearest garage."
>
> "Exactly. Where the trained mechanics and their necessary tools are," agreed the doctor. "It's the same with the hospital. I can do my best work - and the best we must have in medicine all the time - not in some cramped little apartment or private home, but where I have the proper facilities and trained helpers. If anything goes wrong, I have all known aids to meet your emergency."
>
> --Century Illustrated Magazine, February 1926

> Anybody in obstetrics who shows a human interest in patients is not respected. What is respected is interest in machines.
>
> -- Rick Walters MD, February 1986

Why is a birthing woman like a broken-down car, and whence comes this mechanistic emphasis in obstetrics? For the past eight years, I have been researching the sociocultural implications of the obstetrical "management" of birth in American society 1. This research has led me to conclude that both of these questions have the same answer: since the early 1900s, birth in the United States has been increasingly conducted under a set of beliefs, a paradigm, which I have labelled "the technocratic model of birth." 2 I use the word `paradigm' here in the sense of both a conceptual model of and a template for reality. Such a template can only mold reality to fit its conceptual contours when these contours are specifically and consistently delineated and enacted through ritual. In this article I will attempt to explicate the basic tenets of this paradigm, to hint at its historical roots, to demonstrate how it is both delineated and enacted through the rituals of hospital birth, and to consider its sociocultural and folkloristic implications.

Data for this article were obtained through interviews with 100 mothers and many obstetricians, midwives, and nurses in Chattanooga, Tennessee, Austin, Texas and elsewhere in the United States. Their names, wherever used, have been changed to protect their privacy. The majority of the people in my study were middle-class, mainstream American citizens. I was seeking to understand the processes at work in childbirth as it is experienced, not by any particular minority, but by the majority of American women, regardless of ethnicity. Although my study included few women from lower socio-economic groups, I can say with certainty that the technocratic model analyzed here is applied even more intensively to the poor than to the women I interviewed, for middle-class women who pay for private obstetricians can afford to have some choice in their birthways, while poor women who must go through hospital clinics simply have to take what society chooses to give them (Lazarus, 1988; Scully, 1980; Shaw 1974).

The birth process as it is lived out in contemporary American society constitutes an initiatory rite of passage for nascent mothers (Davis-Floyd, 1992) 3 Rites of passage are accomplished through ritual. A ritual may be defined as a patterned, repetitive, and symbolic enactment of a cultural belief or

value. Such enactments may be both ritual and instrumental or rational-technical (Leach, 1979; Moore and Myerhoff, 1977:15). In my analysis of hospital birth I shall show that the obstetrical routines applied to the "management" of normal birth are also transformative rituals that carry and communicate meaning above and beyond their instrumental ends.

Ritual works by sending messages through symbols to those who perform and those who receive or observe it. The message contained in a symbol will often be experienced holistically through the body and the emotions, not decoded analytically by the intellect, so that no conceptual distance exists between message and recipient, and the recipient cannot consciously choose to accept or reject the symbol's message. Thus the ultimate effect of the repetitive series of symbolic messages sent through ritual can be extremely powerful, acting to map the model of reality presented by the ritual onto the individual belief and value system of the recipient, thereby aligning the individual cognitive system with that of the larger society (Munn, 1973:606). Below, I will demonstrate how routine obstetrical procedures, the rituals of hospital birth, can work to map a technocratic view of reality onto the birthing woman's orientation to her labor experience, thereby aligning her individual belief and value system with that of American society.

But first, I must point out that my interviewees did not constitute an identifiable "folk group," except insofar as they are all participants in "American culture." The technologically-oriented belief system within which most of them gave birth can be considered a folk model only under an expansive definition of folklore--one which stresses, not its artistic/aesthetic dimensions (Kirshenblatt-Gimblett, 1988), but its expression of the underlying paradigms of a given group. In this country, the term "folklore" usually has been used to identify the expressive forms of smaller sub-groups within the dominant society. But in Germany and Finland, primary countries of origin for the field of folklore scholarship, the original motivation behind the search for "folklore" was the conceptual unification of the country as a whole. Active performance and propagation of this folklore was consciously encouraged by the governments of those two countries as a means of first creating and then enacting a mythic reality model in which the emergent nations could find their conceptual grounding and sense of national identity.

In the United States today our sense of national identity is grounded in our technology. The technocratic model of birth is not the "folk model" of a small subgroup, but part of the larger technocratic model of reality which forms a conceptual cornerstone of American society. The rituals of hospital birth enact and transmit this model in ways that affect every American woman, no matter what her ethnicity or small-group affiliation.

Those scholars who identify as folklore the expressive forms of small-scale, low-technology societies often balk at applying the same logic to the expressive forms of large, complex, high-technology societies like that of the contemporary United States. Concomitantly, the medical profession convinced the public seven decades ago that moving birth into the hospital represented the de-ritualization of what had heretofore been a primitive process, managed by backwards midwives and laden with "folkloristic" superstition and taboo. I submit, however, that American society is no less dependent upon ritual (a traditional expressive form which folklorists have long claimed as part of their purview) than any other society. On the contrary, our exaggerated dependence on technology and our accompanying fear of natural processes has led to the "re-ritualization" of birth under the technocratic model in a manner more elaborate than anything heretofore known in the cultural world. When a society's dominant reality model is tacit, largely outside of conscious awareness, as is the technocratic model, its rituals need to be even more intensely elaborated than those enacting explicit belief systems (such as Catholicism), for it is only through ritual and symbol that such tacit models are transmitted. The cross-cultural ethnographic literature on childbirth yields nothing to compare with the number and

intensity of symbolic interventions in the birth process developed by the physicians of Western society to enact and transmit its technocratic model.

The Technocratic Model and American Obstetrics

Because the belief system of a culture is enacted through ritual (McManus, 1979; Wallace, 1966), an analysis of ritual may lead directly to an understanding of that belief system. Analyses of the rituals of modern biomedicine (Fox 1957, Henslin and Biggs 1971, Miner 1975; Parsons, 1951) reveal that it forms a microcosm of American society that encapsulates its core value system, a condensed world in which our society's deepest beliefs stand out in high relief against their cultural background. American biomedical cures are based on science, effected by technology, and carried out in bureacratic institutions founded on principles of patriarchy and the supremacy of the institution over the individual. These core values of science, technology, patriarchy and institutions are derived from the technocratic model of reality on which our society is increasingly based.

As Carolyn Merchant demonstrates in The Death of Nature (1983), this model, originally developed in the 1600s by Descartes, Bacon, Hobbes, and others, assumed that the universe is mechanistic, following predictable laws which those enlightened enough to free themselves from the limitations of medieval superstition could discover through science and manipulate through technology in order to decrease their dependence on nature:

> These philosophers transformed the body of the world and its female soul....into a mechanism of inert matter in motion. The resultant corpse was a mechanical system of dead corpuscles, set into motion by the Creator, so that each obeyed the law of inertia and moved only by external contact with another moving body....Because nature was now viewed as a system of dead, inert particles moved by external, rather than inherent forces, the mechanical framework itself could legitimate the manipulation of nature. [1983:193]

In this model the metaphor for the human body is a machine:

> The application of a technological model to the human body can be traced back to Rene Descartes's concept of mind-body dualism....The Cartesian model of the body-as-machine operates to make the physician a technician, or mechanic. The body breaks down and needs repair; it can be repaired in the hospital as a car is in the shop; once fixed, a person can be returned to the community. The earliest models in medicine were largely mechanical; later models worked more with chemistry, and newer, more sophisticated medical writing describes computer-like programming, but the basic point remains the same. Problems in the body are technical problems requiring technical solutions, whether it is a mechanical repair, a chemical rebalancing, or a "debugging" of the system. [Rothman, 1982:34]

After my stepfather's recent heart attack, a cardiologist gave me an update on this metaphor of the body-as-machine:

> Don't worry about him! Just think of it this way - he's like an old Cadillac that has broken down and needs repair. He's in the shop now, and we'll have him just as good as new in no time. We're the best Cadillac repairmen in town!

As it was developed in the 17th century, the practical utility of this metaphor of the body-as-machine lay in its conceptual divorce of body from soul, and in the subsequent removal of the body from the purview of religion so it could be opened up to scientific investigation. During this time period, the dom-

inant Catholic belief system of Western Europe held that women were inferior to men--closer to nature, with less-developed minds and little or no spirituality (Ehrenreich and English, 1973; Kramer and Sprenger 1972 (1486)). Consequently, the men who established the idea of the body-as-machine also firmly established the male body as the prototype of this machine. Insofar as it deviated from the male standard, the female body was regarded as abnormal, inherently defective, and dangerously under the influence of nature, which due to its unpredictability and its occasional monstrosities, was itself regarded as inherently defective and in need of constant manipulation by man (Merchant, 1983:2). The demise of the midwife and the rise of the male-attended, mechanically manipulated birth followed close on the heels of the wide cultural acceptance of the metaphor of the body-as-machine in the West, and the accompanying acceptance of the metaphor of the female body as a defective machine--a metaphor that eventually formed the philosophical foundation of modern obstetrics. Obstetrics was thus enjoined by its own conceptual origins to develop tools and technologies for the manipulation and improvement of the inherently defective and therefore anomalous and dangerous process of birth:

> In order to acquire a more perfect idea of the art, [the male midwife] ought to perform with his own hands upon proper machines, contrived to convey a just notion of all the difficulties to be met with in every kind of labour; by which means he will learn how to use the forceps and crotchets with more dexterity, be accustomed to the turning of children, and consequently, be more capable of acquitting himself in troublesome cases. [Smellie, 1756:44]

> It is a common experience among obstetrical practitioners that there is an increasing gestational pathology and a more frequent call for art, in supplementing inefficient forces of nature in her effort to accomplish normal delivery. [Ritter, 1919:531]

The rising science of obstetrics ultimately accomplished this goal by adopting the model of the assembly-line production of goods--the template by which most of the technological wonders of modern society were being produced--as its base metaphor for hospital birth. In accordance with this metaphor, a woman's reproductive tract is treated like a birthing machine by skilled technicians working under semi-flexible timetables to meet production and quality control demands:

> We shave 'em, we prep 'em, we hook 'em up to the IV and administer sedation. We deliver the baby, it goes to the nursery and the mother goes to her room. There's no room for niceties around here. We just move 'em right on through. It's hard not to see it like an assembly line. [4th year male resident]

The hospital itself is a highly sophisticated technological factory (the more technology the hospital has to offer, the better it is considered to be). As an institution it constitutes a more significant social unit than the individual or the family, so the birth process should conform more to institutional than personal needs. As one physician put it:

> There was a set, established routine for doing things, usually for the convenience of the doctors and nurses, and the laboring woman was someone you worked around, rather than with.

This tenet of the technocratic model--that the institution is a more significant social unit than the individual--will not be found in obstetrical texts, yet is taught by example after example of the interactional patterns of hospital births (Jordan, 1980; Scully, 1980; Shaw 1974). For example, Jordan describes how pitocin (a synthetic hormone used to speed labor) is often administered in the hospital when the delivery-room team shows up gowned and gloved and ready for action, yet the woman's labor slows down. The team members stand around awkwardly until someone finally says "Let's get this show on the road!" (1980:44).

The most desirable end product of the birth process is the new social member, the baby; the new mother is a secondary by-product:

> It was what we all were trained to always go after - the perfect baby. That's what we were trained to produce. The quality of the mother's experience - we rarely thought about that. Everything we did was to get that perfect baby. [38-year old male obstetrician]

This focus on the production of the "perfect baby" is a fairly recent development, a direct result of the combination of the technocratic emphasis on the baby-as-product with the new technologies available to assess fetal quality. Amniocentesis, ultrasonography, "antepartum fetal heart `stress' and `non-stress' tests...and intrapartum surveillance of fetal heart action, uterine contractions, and physiochemical properties of fetal blood" (Pritchard and MacDonald, 1980:329) are but a few of these new technologies:

> The number of tools the obstetrician can employ to address the needs of the fetus increases each year. We are of the view that this is the most exciting of times to be an obstetrician. Who would have dreamed, even a few years ago, that we could serve the fetus as physician? [Pritchard and MacDonald, 1980:vii]

The conceptual separation of mother and child basic to the technocratic model of birth parallels the Cartesian doctrine of mind-body separation. This separation is given tangible expression after birth as well when the baby is placed in a plastic bassinet in the nursery for four hours of "observation" before being returned to the mother; in this way, society demonstrates conceptual ownership of its product.4 The mother's womb is replaced not by her arms, but by the plastic womb of culture. As Shaw points out, this separation of mother and child is intensified after birth by the assignment of a separate doctor, the pediatrician, to the child (1974:94). This idea of the baby as separate, as the product of a mechanical process, is a very important metaphor for women because it implies that men ultimately can become the producers of that product (as they already are the producers of most of Western society's technological wonders), and indeed it is in this direction that reproductive technologies are headed (Corea 1985), as we will briefly investigate in the conclusion.

The Enactment and Transmission of the Technocratic Model through the Rituals of Hospital Birth

Hospital delivery as a whole may be seen as a ritual enactment of this technocratic model of birth. Once labor has begun, a variety of "standard procedures" will be brought into play in order to mold the labor process into conformity with technological standards. These various interventions may be performed by obstetrical personnel at different intervals over a time period that varies with the length of the woman's labor and the degree to which it conforms to hospital standards. The less conformity the labor exhibits, the greater the number of procedures that will be applied in order to bring it into conformity. These interventions, aimed at producing the "perfect baby," are thus not only instrumental acts but also symbols that convey the core values of American society to women and their attendants as they go through the rite of passage called birth. Through these procedures the natural process of birth is deconstructed into identifiable segments, then reconstructed as a mechanical process. Birth is thereby made to appear as though it confirms, instead of challenges, the technocratic model of reality upon which our society is based.

Shortly after entry into the hospital, the laboring woman will be symbolically stripped of her individuality, her autonomy, and her sexuality as she is "prepped"--a multi-step procedure in which she is separated from her husband, her clothes are removed, she is dressed in a hospital gown and tagged with an ID bracelet, her pubic hair is shaved or clipped (conceptually returning her body to a state of childishness), and she is ritually cleansed with an enema. 5 Now marked as insitutional property, she may be reunited with her husband, if he chooses to be present, and put to bed. Her access to food will

be limited or prohibited, and an intravenous needle may be inserted in her hand or arm. Symbolically speaking, the IV constitutes her umbilical cord to the hospital, signifying her now-total dependence on the institution for her life, telling her not that she gives life, but rather that the institution does.

The laboring woman's cervix will be checked for degree of dilation at least once every two hours and sometimes more often. If dilation is not progressing in conformity with standard labor charts, pitocin will be added to the intravenous solution to speed her labor (80 percent of the women in my study were given pitocin, or "pitted"). This "labor augmentation" indicates to the woman that her machine is defective, since it is not producing on schedule, in conformity with production timetables (labor time charts). The administration of analgesia and/or anesthesia (which almost all of the hospital birthers in my study received, in various forms) further demonstrates to her the mechanicity of her labor; epidural anesthesia, which can numb a woman from the chest down, produces an especially clear physiological separation of her mind from the body-machine which produces the baby.

The external electronic fetal monitor intensifies this message. This machine is attached to the woman's body by large belts strapped around her waist to monitor the strength of her contractions and the baby's heartbeat. An obstetrical resident commented, "The vision of the needle travelling across the paper, making a blip with each heartbeat, [is] hypnotic, often giving one the illusion that the machines are keeping the baby's heart beating" (Harrison, 1982:90). The internal monitor, attached through electrodes to the baby's scalp, communicates the additional message that the baby-as-hospital-product is in potential danger from the inherent defectiveness of the mother's birthing machine.

If we stop a moment now to see in our mind's eye the images that a laboring woman will be experiencing--herself in bed, in a hospital gown, staring up at an IV pole, bag, and cord on one side, and a big whirring machine on the other, and down at a huge belt encircling her waist, wires coming out of her vagina, and a steel bed, we can see that her entire visual field conveys one overwhelming perceptual message about our culture's deepest values and beliefs--technology is supreme, and you are utterly dependent on it and on the institutions and individuals who control and dispense it:

> At Doctor's Hospital I attached the woman to the monitor, and after that no one looked at her any more. Held in place by the leads around her abdomen and coming out of her vagina, the woman looked over at the TV-like screen displaying the heartbeat tracings. No one held the woman's hand. Childbirth had become a science. [Harrison, 1982:91]

These routine procedures speak as eloquently to the obstetrical personnel who perform them as to the women who receive them; the more physicians, medical students, and nurses see birth "managed" in this way, and the more they themselves actively "manage" birth this way, the stronger will be their belief that birth must be managed this way:

> Why don't I do home births? Are you kidding? By the time I got out of residency, you couldn't get me near a birth without five fetal monitors right there, and three anesthesiologists standing by. [female obstetrician, one year in practice]

As the moment of birth approaches there is an intensification of the ritual actions performed on the woman. She is transferred to a delivery room, placed in the lithotomy position, covered with sterile sheets, and doused with antiseptic, and an episiotomy is cut to widen her vaginal opening. These procedures cumulatively make the birthing woman's body the stage on which the drama of society's production of its new member is played out, with the obstetrician as both the director and the star (Shaw, 1974:84). The lithotomy position, in which the woman lies with her legs elevated in stirrups and her buttocks at the very edge of the delivery table, completes the process of her symbolic inversion from autonomy and privacy to dependence and complete exposure, expressing and reinforcing her powerlessness and the power of society (as evidenced by its representative, the obstetrician) at the

supreme moment of her own individual transformation. The sterile sheets with which she is draped from neck to foot enforce the clear delineation of category boundaries, graphically illustrating to the woman that her baby, society's product, is pure and clean and must be protected from the inherent uncleanness of her body.

The delineation of basic social categories is furthered by the episiotomy, which conveys to the birthing woman the value and importance of the straight line - one of the most fundamental markers of our separation from nature (because it does not occur in nature). Of equal significance, the episiotomy transforms even the most natural of childbirths into a surgical procedure; routinizing it has proven to be an effective means of justifying the medicalization of birth. (Estimates of episiotomy rates in first-time mothers (primagravidas) range from 50-90 percent; large teaching hospitals often have primagravida rates above 90 percent. Multi-gravida rates are estimated at 25-30 percent. In contrast, in the Netherlands episiotomies are performed in only 8 percent of births (Thacker and Banta 1983).)

The obstetrician instructs the mother on how to push, catching the baby and announcing its sex, then hands the baby to a nurse, who promptly baptizes "it" through the technocratic rituals of inspection, testing, bathing, diapering, wrapping, and the administration of a vitamin K shot and antibiotic eye drops. Thus properly enculturated, the newborn is handed to the mother to "bond" for a short amount of time (society gives the mother the baby), after which the nurse takes the baby to the nursery (the baby really belongs to society). The obstetrician then caps off the messages of the mother's mechanicity by extracting her placenta if it does not come out quickly on its own, sewing up his episiotomy, and ordering more pitocin to help her uterus contract back down. Finally the new mother, now properly "dubbed" as such through her technocratic annointings, will be cleaned up and transferred to a hospital bed.

These routine obstetrical procedures cumulatively work to map the technocratic model of birth onto the birthing woman's orientation to her labor experience, thereby producing a coherent symmetry (Munn, 1973:593) between her belief system and that of society. Diana experienced this process as follows:

> As soon as I got hooked up to the monitor, all everyone did was stare at it. The nurses didn't even look at me any more when they came into the room--they went straight to the monitor. I got the wierdest feeling that <u>it</u> was having the baby, not me.

Diana's statement illustrates the successful progression of conceptual fusion between her perceptions of her birth experience and the technocratic model. So thoroughly was this model "mapped onto" Diana's experience that she began to <u>feel</u> that the machine itself was having her baby, and that she was a mere onlooker. (Soon after the monitor was in place, Diana requested a Cesarean section, stating that there was "no more point in trying.")

Merry's internalization of one of the basic tenets of the technocratic model--the defectiveness of the female body--is observable in the following excerpt from her written birth story:

> It seemed as though my uterus had suddenly tired! When the nurses in attendance noted a contraction building on the recorder, they instructed me to begin pushing, not waiting for the <u>urge</u> to push, so that by the time the urge pervaded, I invariably had no strength remaining, but was left gasping, dizzy and diaphoretic. The vertigo so alarmed me that I became reluctant to push firmly for any length of time, for fear that I would pass out. I felt suddenly depressed by the fact that labor, which had progressed so uneventfully up to this point, had now become unproductive.

Merry does not say, "the nurses had me pushing too soon," but "my uterus had suddenly tired" and labor "had now become unproductive." These responses reflect a basic tenet of the technological model of birth - when something goes wrong, it is the woman's fault:

> Yesterday on rounds I saw a baby with a cut on its face and the mother said, "My uterus was so thinned that when they cut into it for the section, the baby's face got cut." The patient is always blamed in medicine. The doctors don't make mistakes. "Your uterus is too thin," not "We cut too deeply." "We had to take the baby," (meaning forceps or Cesarean) instead of "The medicine we gave you interfered with your ability to give birth." [Harrison, 1982:174]

The obstetrical procedures briefly described above fully satisfy the criteria for ritual: they are patterned and repetitive; they are symbolic, communicating messages through the body and the emotions; and they are enactments of our culture's deepest beliefs about the necessity for cultural control of natural processes, the untrustworthiness of nature, and the associated defectiveness of the female body. They also reinforce the validity of patriarchy, the superiority of science and technology, and the importance of institutions and machines. Furthermore, these procedures are transformative in intent - they attempt to contain and control the inherently transformative natural process of birth, and to transform the birthing woman into a mother in the full social sense of the word - that is, into a woman who has internalized the core values of American society: one who believes in science, relies on technology (and on those in charge of ordering/operating it), recognizes her inferiority (either consciously or unconsciously), and so at some level accepts the principles of patriarchy. Such a woman will tend to conform to society's dictates and meet the demands of its institutions, and will raise her children to do the same. These birth rituals also transform the resident who is taught to do birth in no other way into the obstetrician who performs them as a matter of course: "No - they were never questioned. Preps, enemas, shaves, episiotomies - we just did all that; no one ever questioned it" (Dr. Stanley Hall).

Of course, there are many variations on this theme. Many younger doctors are dropping preps and enemas from their standard orders (although several complained to me that the nurses, also strongly socialized into the technocratic model, frequently administer them anyway). Increasing numbers of women opt for delivery in the birthing suite or the LDR (labor-delivery-recovery room), where they can wear their own clothes, do without the IV, walk around during labor, and where the options of side-lying, squatting, or even standing for birth are increasingly available. (The fact that many of the procedures analyzed above can be instrumentally omitted underscores my point that they are rituals.) Yet in spite of these concessions to consumer demand for more "natural" birth, a basic pattern of consistent high-technological intervention remains: most hospitals now require at least periodic electronic monitoring of all laboring women; analgesias, pitocin, and epidurals are widely and commonly administered; in spite of decades of research that clearly demonstrate its severe physiological detriments (Johnstone et al., 1987; McKay and Mahan, 1984), the lithotomy position is still the most commonly used position for birth; and one in four American women will be delivered of their babies by Cesarean section. Thus, while some of the medicalization of birth drops away, the use of the most powerful signifiers of the woman's dependence on science and technology intensifies.

Obstetrics, unlike other medical specialties, does not deal with true pathology in the majority of cases it treats: most pregnant women are not sick. It is, therefore, uniquely vulnerable to the challenges to its dominant paradigm presented by the natural childbirth and holistic health movements, for these movements rest their cases on that very issue - the inherent wellness of the pregnant woman versus the paradoxical insistence of obstetrics on conceptualizing her as ill, and on managing her body as if it were a defective machine. Over the past two decades, childbirth activists and younger doctors aware of this paradox have succeeded in increasing the number of birthing options available to women. Thus obstetrics is no longer as reliable as it once was in the straightforward transmission and perpetuation of American society's core value system. To deal with this challenge, our society has gone outside the medical system, utilizing the combined forces of its legal and business systems to keep obstetricians in line.

Over 70 percent of all American obstetricians have been sued, a percentage higher than that of any other medical specialty (Easterbrook, 1987). Malpractice insurance premiums in obstetrics began their dramatic rise in 1973, just at the time when the natural childbirth movement was beginning to pose a major threat to the obstetrical paradigm. A common cultural response to this type of threat is to step up the performance of the rituals designed to preserve and transmit the reality model under attack (Douglas, 1973:32, Vogt, 1976:198). Consequently, the explosion of humanistic and wholistic options that challenged the conceptual hegemony of the technocratic model was paralleled by a stepping up of ritual performance, in the form of a dramatic rise in the use of the fetal monitor (from initial marketing in the sixties to near-universal hospital use today [Ob.Gyn News 1982]), accompanied by a concurrent rise in the Cesarean rate, from 5 percent in 1965 to almost 25 percent nationwide today (National Bureau of Vital Statistics 1987), reaching 50 percent in many teaching hospitals. Although technically not a routine procedure, the Cesarean section is well on its way to becoming one.6 A number of studies have shown that increased monitoring leads to increased performance of Cesareans (Banta and Thacker, 1979; Haverkamp and Orleans, 1983; Young, 1982:110). These dramatic increases in the ritual use of machines in labor and in the ritual performance of the ultimately technological birth, delivery "from above," are at least partially attributable to the coercive pressure brought to bear on obstetricians by the pervasive threat of lawsuit.

In their quest for the perfect babies and safe births they feel they are owed under the technocratic paradigm, most women sue because of the underuse of technology, not because of its overuse. Most obstetricians interviewed perceived electronic monitoring as a means of self-protection, confirming that they are far more likely to perform a Cesarean than not if the monitor indicates potential problems, because they know that the risk of losing a lawsuit is lower if they cleave to the strict interpretation of the technocratic model. If they try a more humanistic approach--that is, if they try to be innovative, less technocratic, and more receptive to the woman's needs and desires, they place themselves at greater risk. As one obstetrician put it:

> Certainly I've changed the way I practice since malpractice became an issue. I do more C-sections - that's the major thing. And more and more tests to cover myself. More expensive stuff. We don't do risky things that women ask for - we're very conservative in our approach to everything...In 1970 before all this came up, my C-section rate was around 4 percent. It has gradually climbed every year since then. In 1985 it was 16 percent, then in 1986 it was 23 percent.

These legal and financial deterrents to radical change powerfully constrain our medical system, in effect forcing it to reflect and to actively perpetuate the core value and belief system of American society as a whole. From this perspective, the malpractice situation emerges as society's effort to keep its representatives, the obstetricians, from reneging on their responsibility for imbuing birthing women with the basic tenets of the technocratic model of reality.

From a more personal perspective, the value of careful adherence to form in ritual must be appreciated in order to understand the powerful appeal the repetitive patterning of obstetrical procedures has for obstetrical personnel. Moore and Myerhoff observe that order and exaggerated precision in performance, which set ritual apart from other modes of social interaction, serve to impute "permanence and legitimacy to what are actually evanescent cultural constructs" (1977:8). This establishment of a sense of "permanence and legitimacy" is particularly important in the performance of obstetrical procedures because of the limited power the obstetrician's technocratic model actually gives him or her over the events of birth.

Although through ritual a culture may do its best to make the world appear to fit its belief system, divergent realities may occasionally perforate the culture's protective filter of categories and threaten to upset the whole conceptual system. Thus obstetricians and nurses, who have experienced the agony and confusion of maternal or fetal death or the miracle of a healthy birth when all indications

were to the contrary, know at some level that ultimate power over birth is beyond them. They may well fear that knowledge. In such circumstances, humans use ritual as a means of giving themselves the courage to carry on (Malinowski, 1954). Through its careful adherence to form, ritual mediates between cognition and chaos by appearing to restructure reality. The format for performing standard obstetrical procedures provides a strong sense of cultural order imposed on and superior to the chaos of nature:

> "In honest-to-God natural conditions," [the obstetrician] says [to the students observing the delivery he is performing], "babies were sometimes born without tearing the perineum and without an episiotomy, but without artificial things like anesthesia and episiotomy, the muscle is torn apart and if it is not cut, it is usually not repaired. Even today, if there is no episiotomy and repair, those women quite often develop a retocoele and a relaxed vaginal floor. This is what I call the saggy, baggy bottom." Laughter by the students. A student nurse asks if exercise doesn't help strengthen the perineum...."No, exercises may be for the birds, but they're not for bottoms....When the woman is bearing down, the leveator muscles of the perineum contract too. This means the baby is caught between the diaphragm and the perineum. Consequently, anesthesia and episiotomy will reduce the pressure on the head and, hopefully, produce more Republicans." More laughter from the students. [Shaw, 1974:90]

To say that obstetrical procedures are "performed" is true both in the sense that they are done and in the sense that they can be "acted" and "staged," as is evident in the quotation above. Such ordered, acted and stylized techniques serve to deflect questioning of the efficacy of the underlying beliefs and forestall the presentation of alternative points of view (Moore and Myerhoff, 1977:7) by the medical and nursing students as they undergo the process of their own socialization into the technological model. 7 This model has internal logic and consistency; once these medical initiates have absorbed its basic tenets, including, as we see above, the notions of the defectiveness of nature and the female body and the superiority of the technological approach, they will come to perceive all the other aspects of the obstetrical management of birth as reasonable and right. Thus the system becomes tautological, and its self-perpetuation is ensured.

Women's Rites: The Politics of Birth

"In a traditional philosophical opposition," writes Jacques Derrida, "we have not a peaceful coexistence of facing terms but a violent hierarchy. One of the terms dominates the other (axiologically, logically, etc.) and occupies the commanding position" (1981:56-57). Feminist scholar Helene Cixous states that the man/woman opposition may well be the paradigmatic opposition in Western discourse (1975:116-119). Inherent in this opposition, as in our entire social discourse, is a "violent hierarchy" in which the value-laden male dominates the devalued female.

Shifting needs in our society enable women to work in a man's world, sometimes for equal pay, but no matter how early in life a woman begins her career, nor how successful she is, she will still be living and working under the constraints of her conceptual denial by the technocratic model of reality. Based as it is on a fundamental assumption of her physiological inferiority to men, that model guarantees her continued psychological disempowerment by the everyday constructs of the culture-at-large, and her alienation both from political power and from the physiological attributes of womanhood.

It came as a shock to me, then, to discover that fully seventy percent of the one hundred women in my study expressed varying degrees of contentment with their technocratic births. As I explored the reasons behind this finding, I came to realize that the technocratic rituals of hospital birth, notwithstanding the philosophy that underlies them, do of course provide the same sense of order, security and power to birthing women as they do to physicians and nurses. Moreover, that philosophy itself is not so alien to today's women as I had imagined. Although forty-two of these seventy women did enter the hospital with the expressed intention of "doing natural childbirth," this philosophical goal faded in importance as labor progressed--or "failed to."8 As these women gradually became convinced of the defectiveness of their birthing machines or of the birth process, they came to interpret

the interventions they experienced as appropriate (albeit sometimes unpleasant) and so clearly stated that they felt "okay with" or "good about" the technocratic births they ended up with. The other twenty-eight entered the hospital already convinced that the way of technology was better than the way of nature. They initially wanted technocratic births and were generally satisfied with the ones they got. I consistently found that such women, who generally wish to live within American society's dominant core value system, will feel slighted if their births are not marked by the procedures that they themselves view as ritually appropriate:

> My husband and I got to the hospital, and we thought they would take care of everything. We thought that we would do our breathing, and they would do the rest. I kept sending him out to ask them to give me some Demerol, to check me - anything--but they were short-staffed and they just ignored me until the shift changed in the morning. [Sarah Morrison]

Because the technocratic model of birth encapsulates the core values of the wider culture, in many ways it offers to modern women the opportunity to further integrate themselves with that wider culture. The technocratic model itself replaced an earlier and narrower paradigm of birth that still retains a certain symbolic force--a paradigm that held both birth, and women's place, to be in the home. Hospital birth was eagerly sought by women in the earlier part of this century as a powerful step in their liberation from the "confinement" of the home, as was bottle-feeding. As one mother put it to her daughter in a novel written in 1936, "The bottle was the battle cry of my generation" (quoted in Wertz and Wertz 1989:150). Moreover, middle-class women themselves campaigned for the acceptance in America of scopolamine-induced "twilight sleep" as a further means of freeing themselves from what they were increasingly beginning to perceive as enslavement to their biological processes.

Therefore, it should come as no surprise that many of today's postmodern women would wish to identify with their earthy biological selves and the confines of the domestic realm even less than their turn of the century sisters who paved the way for them. Unlike these historical sisters, to whom adequate contraception was unavailable, most of the women in my study chose to have only one or two children, and placed a great deal of emphasis on being present to the experience of giving birth. While the total personal obliteration of a scopolamine birth would have been anathema to all of them, many nevertheless did seek a high degree of detachment from the biology of birth through epidural anesthesia. Joanne put it this way:

> Even though I'm a woman, I'm unsuited for delivering....and I couldn't nurse....I just look like a woman, but none of the other parts function like a mother. I don't have the need or the desire to be biological....I've never really been able to understand women who want to watch the birthing process in a mirror - just, you know, I'm not, that's not - I'd rather see the finished product than the manufacturing process.

Joanne, like many others in my study, preferred epidural anesthesia for both of her Cesarean births, as it allowed her to be intellectually and emotionally present, while physically detached:

> [I liked that because] I didn't feel like I had dropped into a biological being....I'm not real fond of things that remind me I'm a biological creature--I prefer to think and be an intellectual emotional person, so you know, it was sort of my giving in to biology to go through all this.

Such attitudes, increasingly common especially among professional women, have generated what many childbirth practitioners are calling the "epidural epidemic" of the 1990s. (Sixty percent of the women in my study, and eighty percent of the women in a recent study by Sargent and Stark (1987) received epidurals.) As the epidural numbs the birthing woman, eliminating the pain of childbirth, it also graphically demonstrates to her through her lived experience the truth of the Cartesian maxim that mind and body are separate, that the biological realm can be completely divorced from the realms of the intellect and the emotions. 10 The epidural is thus the perfect technocratic tool, serving the

interests of both the technocratic model (by transmitting it) and of the women giving birth under that model, who usually find that they benefit most not from rejecting that model but from using it to their own perceived advantage:

> When I got there, I was probably about five centimeters, and they said, "Uh, I'm not sure we have time," and I said, "I want the epidural. We must go ahead and do it right now.!" So, we had an epidural. [Beth]

> Ultimately the decision to have the epidural and the Cesarean while I was in labor was mine. I told my doctor I'd had enough of this labor business and I'd like to.... get it over with. So he whisked me off to the delivery room, and we did it. [Elaine]

While the majority of women in my study, like Joanne, Beth and Elaine, found some degree of empowerment in technocratic conformity, fifteen percent successfully avoided conceptual fusion with the technocratic model by adhering to and achieving their goals of "natural childbirth" in the hospital. In contrast to the majority, these fifteen women were personally empowered by their resistance to the technocratic model. They tended to view technology as a resource that they could choose to utilize or ignore, and often consciously subverted their socialization processes by replacing technocratic symbols with self-empowering alternatives (e.g. their own clothes and food, perineal massage instead of episiotomy):

> The maternity room sent somebody down with a wheelchair. I didn't have any need for a wheelchair, so we piled all of the luggage into it and wheeled it up to the floor [Patricia].

> Giving birth was really satisfying....I felt incredibly powerful and absolutely delighted. I felt that I knew exactly what was happening....My perception of it was that I was in charge and these other people were my assistants....[Teresa]

Another nine percent of my interviewees entered the hospital believing strongly in the benefits of natural childbirth and in their ability to give birth naturally, but came out feeling "like a failure," and "totally disempowered" by the highly technocratic births they actually experienced. The messages of helplessness and defectiveness that they received from these births engendered considerable conflict between the self-images they previously held, and those they internalized in the hospital:

> After the birth I felt just miserable, agonizingly miserable. When I was relating to the baby, I was totally happy--I was so thrilled with her. But all the rest of the time I felt so sad--gray around the edges. Just sad and gray....and ashamed. I felt so ashamed of myself for....not being able to do it....And I had so many questions that I started to read some more. More and more. And I started to admit to myself that I felt humiliated by my birth. And then when I realized that I probably hadn't even needed a Cesarean, I started to realize that I felt raped, and violated somehow, in some really fundamental way. And then I got angry. [Elise]

When I began this research, I nurtured the illusion that women like Elise would be in the majority. I thought women everywhere would be rising up in resistance to their technocratic treatment. But I found, to summarize, that twenty-eight women did not want anything to do with natural childbirth, and forty-two, while initially giving what apparently was lip service to the ideal of natural childbirth, quickly and easily adapted to technocratic interventions, expressing no resistance to or resentment of those interventions. 11 Only twenty-four women out of the one hundred in this study actually succeeded at "natural childbirth" or were distressed when they did not succeed. This low number of women deeply committed to the philosophy of natural childbirth is quite representative of the fate in the 1990s of the natural childbirth movement of the 1970s and 1980s--much of its force has been redirected (some would say subverted and coopted (Rothman 1982)) from educating women to resist technocratic birth into educating women to feel comfortable with and even empowered by birth under the technocratic paradigm. Many childbirth educators, who used to make it a point to serve as a primary counteracting force to technocratic socialization, are finding that there is no longer much

reason to rail against technocratic abuses in their classes. 12 (The cover on a recent childbirth education magazine asks plaintively, "Have epidurals made childbirth education obsolete?" (Simchak 1991).)

Opposition to technocratic birth has thus become much more polarized than before. Women who seek true alternatives to the technocratic model, finding them generally unavailable in the hospital, often choose to give birth in midwife-attended free-standing birth centers or at home. 13

The Holistic Alternative

Six of the women in my study (six percent) gave birth at home. The alternative paradigm these women adopted is based on systems theory and offers a wholistic, integrating approach to childbirth as well as to daily life--an approach that stresses the inherent trustworthiness of the female body, communication and oneness between mother and child and within the family, and self-responsibility (Davis-Floyd, 1986, 1992; Rothman, 1982; Star, 1986). Tara expresses one aspect of their systemic view:

> Pain? It's part of the whole experience. In this society, we try not to experience pain. We take lots of drugs, I mean legal things. And I feel that's why a lot of people get into other forms of drug abuse....Even though during labor I remember feeling it was almost unbearable, it never entered my mind to wish I had "something for the pain"....I wanted the pain to stop, but not because somebody gave me something. I guess part of it is....the wonderful physical and emotional stuff that is going on at the same time as the pain. If you took drugs for the pain, you would change all the rest of it, too.

These homebirthers sought, not a return to the "motherhood as defining feature" paradigm of the 19th century, but rather an expanded vision of womanhood that encompasses both the gains achieved in the workplace under the technocratic model and a renewed sense of the value of women's experiences. As one woman put it, "It's a spiral, not a circle. We're not going backwards to `women's domain,' but forward, to a space where all our attributes can be celebrated."

In technocratic reality, not only are mother and baby viewed as separate, but the best interests of each are often perceived as conflicting. In such circumstances, the mother's emotional needs and desires are almost always subordinated to the medical interpretation of the best interests of the baby as the all-important product of this "manufacturing process." Thus, individuals operating under this paradigm often criticize home-birthers as "selfish" and "irresponsible" for putting their own desires above their baby's needs. But under the holistic paradigm held by these home birthers, just as mother and baby form part of one integral and indivisible unit until birth, so the safety of the baby and the emotional needs of the mother are also one. The safest birth for the baby will also provide the most nurturing environment for the mother. Said Tara:

> The bottom line was that I felt safer [at home], and I think that's what it boils down to for most people. That's why it didn't seem unusual to me. It seemed strange to me that people feel safer with the drugs and that type of thing because I'm just not that way.

Elizabeth said, "My safest place is my bed. That's where I feel the most protected and the most nurtured. And so I knew that was where I had to give birth." And Ryla said:

> I got criticized for choosing a home birth, for not considering the safety of the baby. But that's exactly what I was considering! How could it possibly serve my baby for me to give birth in a place that causes my whole body to tense up in anxiety as as soon as I walk in the door?

According to the technocratic model, the uterus is an involuntary muscle, and labor proceeds mechanically in response to hormonal signals. Proponents of the holistic model see the uterus as a responsive part of the whole, and therefore believe that the best labor care will involve attention to the mother's emotional and spiritual desires, as well as her physical needs. The difference between these two approaches is clearly illustrated by the reponses of a physician and a lay midwife to the stopped labor of a client. The physician said, "It was obvious that she needed some pitocin, so I ordered it," and the midwife said, "It was obvious that she needed some rest, so she went to sleep, and we went home." Here is Susan's story:

> Nikki [the midwife] kind of got worried about it towards the afternoon. Because it just kept going on and nothing was changing. And she took me to the shower and said, "Just stay in there till the hot water goes away." And Ira went with me to massage me and try to get everything relaxed. And then Nikki asked my friend Diane, "What's the deal with Susan, what's going on? Is she....stressed out about work?" And Diane said, "Well, yeah, I think she's afraid to have the baby....[that] she's not going to be able to go back to her job and all that." So when I came back out....Nikki started in on me about it. She said, "Right now your job is not important. What you have to do right now is have this baby. This baby is important." And I just burst into tears and was screaming at her and started crying and I could feel everything when I started crying just relax. It all went out of me and then my water broke and we had a baby in 30 minutes. Just like that.

The Technocratic Model and the Future

Our cultural attachment to the technocratic model is profound, for in our technology we see the promise for our society of eventual transcendence of both our physical and our earthly limitations (already we build humanlike robots, freeze bodies in cryogenic suspension, and design space stations). In the cultural arena of birth, the technocratic model's emphasis on mechanicity, separation, and control over nature potentiates various sorts of futuristic behavioral extremes. These include, among many others: court-ordered Cesareans--cases in which the mother refuses to have a Cesarean, but is forced to do so by the courts against her will (Irwin and Jordan 1989; Shearer 1989); surrogacy--a contractual arrangement in which the womb of one woman is rented to incubate someone else's child (Sault, 1989); sex preselection--using various techniques to try to ensure that the baby will be a boy or a girl, using amniocentesis to determine which it is, and then aborting if it isn't the desired sex; and genetic engineering--altering genes to select for certain desired traits or eliminate undesirable ones. (It is worth remembering that such futuristic reproductive technologies are envisioned, invented, and "chosen" in a sociocultural context which values them more than the female bodies they act upon.) How far can this trend carry us? The February 1989 issue of Life magazine's cover story, "The Future and You," predicts "Birth Without Women":

> By the late 21st century, childbirth may not involve carrying at all--just an occasional visit to an incubator. There the fetus will be gestating in an artificial uterus under conditions simulated to recreate the mother's breathing patterns, her laughter and even her moments of emotionsl stress (1989:55).

The paradigm which makes such futuristic options seem not only possible but also desirable presents real dangers to those who conceptually oppose it and act on their convictions. Across the country, would-be homebirthers and the lay midwives who attend them report harrassment and sometimes prosecution by the medical and legal establishment, as do women who attempt to refuse obstetrical interventions, including court-ordered Cesareans. Such interventions are often ordered because the technocratic paradigm grants no legitimacy to women who value their own "inner knowing" more than technologically-obtained information about what is "safe":

> In a 1981 Georgia case, doctors told the court there was a 99% chance of fetal death and a 50% chance of maternal death unless a scheduled Cesarean section was performed, since two ultrasounds indicated a complete placenta praevia [a potentially life-threatening situation in which the placenta lies under the baby, blocking the entrance to the birth canal]. The mother steadfastly believed in her ability to give birth safely.

> After the court order was granted, a third ultrasound showed no praevia at all. Either the placenta had moved late in pregnancy or the ultrasound machine had been wrong (Shearer, 1989:7).

Extremes, on both ends of the spectrum, play an important role in defining the outer edges of the possible and the imagined. Most especially, those at the extreme of conceptual opposition to a society's hegemonic paradigm create much more room for growth and change within that society than would exist without them. Because the technocratic paradigm is hegemonic, pervading medical practice and guiding almost all reproductive research, no middle-class woman who gives birth at home can fail to be aware that she is battling almost overwhelming social forces that would drive her to the hospital. The homebirthers in my study who espouse the holistic model do so in direct and very conscious opposition to the dominant technocratic model. They represent the fewer than one percent of American women who choose to give birth at home. I suggest that the importance to American society of this tiny percentage of alternative model women is tremendous, for they are holding open a giant conceptual space in which women and their babies can find metaphorical room to be more than mechanistic antagonists. Home birthers I have interviewed use rich metaphors to describe pregnancy, labor and birth that work to humanize, personalize, feminize, and naturalize the processes of procreation. They speak of mothers and babies as unified energy fields, complementary co-participants in the creative mysteries, entrained and joyous dancers in the rhythms and harmonies of life. They talk of labor as a river, as the ebb and flow of ocean waves, as ripened fruit falling in its own good time.

Home birthers in the United States are an endangered species. Should they cease to exist, the options available in American society for thinking about and treating pregnancy, birth, and the female body would sharply decrease, and our society would be enormously impoverished. Should they thrive, we will continue to be enriched by their alternative visions.

As feminists, we fight for the right to make our bodies our own, to metaphorize, care for, and technologize as we please. The intensifying quest of many postmodern women for distance from female biology leads inevitably to the question: as women increasingly break out of the confines of the biological domain of motherhood, will/should our culture still define that domain as primarily belonging to women? What do we want? As we move into the 21st century, will the options opened to us by our technology leave equal conceptual room for the women who want to be their bodies, as well as for the women for whom the body is only a tool? As researchers like Ehrenreich and English (1973), Corea (1985), Rothman (1982, 1989), and Spallone (1989) have shown, the patriarchy has been and is only too willing to relieve us of the necessity for our uniquely female biological processes. To what extent do we desire to give up those processes in order to compete with men on their terms and succeed? In the new society we are making, will the home birthers and the home schoolers, the goddesses and the Earth Mothers, have equal opportunity to live out their choices alongside those who want to schedule their Cesareans, and those who want their babies incubated in a test tube?

Because the birth process forms the nexus of nature and society, the way a culture handles birth will point "as sharply as an arrowhead to its key values" (Kitzinger 1980:115). Any changes in these values and in the model of reality which underlies them will thus be both reflected in and effected by changes in the way that culture ritualizes birth. The existence of core value options is of critical importance for the future directions our society will take; changes in the hegemonic values transmitted through birth could profoundly alter those directions. In times of rapid change such as these, a society's adaptive capacity lies in its conceptual diversity just as surely as in its genetic diversity. As the natural childbirth movement of the 70s and 80s has been largely coopted and subsumed into the service of technocratic hegemony, so the holistic models of lay midwives and homebirthers could be completely overrun by the technocratic paradigm. I believe that it is the responsibility of feminist scholars everywhere to track the cultural treatment of birth, to register the disappearance of old options

and the opening of new ones, and to work to make us all aware of their implications for the kind of culture that future generations of our society will acquire through the ritualization of birth.

ENDNOTES

Acknowledgments

I wish to express my appreciation to M. Jane Young, Linda Pershing, and Susan Hollis for their hard work and for the endless patience it has taken to see this volume through to publication, and to Bruce Jackson for his excellent editorial assistance on the first version of this article.

1. The full results of this research appear in Birth as an American Rite of Passage (University of California Press, 1992).

2. This present article is a revised version of an article entitled "The Technological Model of Birth" previously published in the Journal of American Folklore, 100:398. In this version I have changed "technological" to "technocratic" because 1) technology is pervasive in all human cultures; and 2) I seek through this label to link this model to the core value system of American culture. We live today in a technocracy--a post-industrial society organized around an ideology of technological progress (Reynolds 1991). Webster's (1979) defines "technocracy" as "management of society by technical experts"; hospital birth is likewise defined by its management by technical experts.

3. My interview questions for this article were primarily focused on first births.

4. In most hospitals the scientific rationale for this standard separation period involves the need to keep the baby warm and to monitor its condition. According to one obstetrician, this routine separation of mother and child was instituted during the period of the routine use of scopolamine for labor and birth, when the mother was quite literally unable to care for her baby for some time after its delivery. Routine continuance of the separation period today reflects both past precedent and current events--many mothers are still too anesthetized after their births to care well for their babies, and it is a fact of institutional life that nurses have to process a good deal of paperwork concerning the baby, which they are best-equipped to do in the nursery. However, mothers who give birth in "birthing rooms" are allowed to keep their babies with them continually; because standard sterile procedures are not used in these birthing rooms, these babies are considered "contaminated" and therefore are not allowed in the nursery.

5. The underlying justification for the symbolic interpretations summarized here can be found in Davis-Floyd 1992. Portions of this analysis appear in Davis-Floyd 1987, 1988, 1989.

6. In my ongoing interviews with new mothers and childbirth practitioners, I have recently noticed a new trend. Obstetricians are under intense pressure to reduce the Cesarean rate, so in lieu of Cesareans, they are increasingly resorting to reliance on epidurals, large episiotomies, and forceps. The last three women I have interviewed were delivered in this manner; they all said proudly, "I didn't have to have a Cesarean!"

7. Detailed analysis of obstetrical training as an initiatory rite of passage appears in Davis-Floyd, 1987.

8. "Failure to progress" is a catch-all diagnosis in obstetrics, applied when women's labors "fail" to conform to standardized labor time charts. Such a diagnosis usually leads first to the administration of pitocin to speed labor, and then to the performance of a Cesarean section.

9. Ironically, scopolamine, which reduced the birthing woman to an animalistic state (but then erased all events from her memory), was quickly coopted by the medical profession into providing the rationale for claiming complete control of the birth process. This drug, once a symbol of women's liberation from the pain of childbirth, became for the childbirth activists of the 1970s and 1980s a symbol of women's subjugation to the medical profession. Even its replacement by the epidural is symbolic: the calm, controlled "awake and aware" Lamaze mother with the epidural fits the picture of birthing reality painted by the technocratic model far better than the "scoped-out" screaming "wild animal" of the 50s.

10. Physiological advantages of the epidural include excellent pain relief that leaves the woman alert and aware throughout labor, and small (but unknown) risk to the baby. Disadvantages include an increased incidence of Cesarean section, forceps delivery, urinary tract infection (from the urinary catheterization that must be done every few hours), and long-term backache; dependence on others for basic physical needs because the women must stay in bed with her head slightly elevated; constant electronic fetal monitoring; and frequent blood pressure monitoring. The result of an epidural, thus, is the elimination of the possibility of the activities a woman herself can do to facilitate labor and delivery: using a comfortable upright position, changing position frequently, emptying her bladder often, and walking (which greatly facilitates the effectiveness of contractions and cervical dilation) (Simchak, 1991:16).

11. Close examination of the birth narratives of these forty-two women reveals that, prior to entering the hospital, their belief systems showed a relatively high degree of correspondence with the technocratic model (Davis-Floyd, 1992, Ch. 5). Intensive socialization into a paradigm that one already more or less agrees with is certainly less painful a procedure than socialization into a paradigm radically different from one's own.

12. It is still possible to find childbirth educators in most cities who are truly committed to teaching the philosophy and methods of natural childbirth. Most notably, instructors trained in the Bradley method tend to take an uncompromising stance:

> In the Bradley method, when we say successful outcome, we mean a totally unmedicated, drug-free natural childbirth without routine medical intervention that enables the woman to exercise all her choices in birthing and give her baby the best possible start in life. And we expect this over 90% of the time. [McCutcheon-Rosegg, 1984:8]

In this technocratic age, it is fascinating to note that this expectation has consistently been fulfilled in over 90% of the birth experiences of the over 4000 low- and high-risk couples taught the Bradley method by American Academy of Husband-Coached Childbirth founders Jay and Margie Hathaway.

13. Alternative birthing centers (ABCs) within hospitals became widespread in the 1980s. Although in their homelike and cosy appearance they seem to offer the best of both worlds, in most hospitals few of the women who start out in such centers actually end up giving birth there, as most labors do not conform closely enough to technocratic standards to be allowed to remain in the ABC. On the other hand, a recent study of 11,814 births in free-standing birth centers (Rooks et al., 1989) showed clearly that the physical lack of connection to a hospital is accompanied by a conceptual lack of connection to the technocratic model. Births in such centers tended to be intervention-free, with outstanding outcomes: the Cesarean rate was 4.4 percent, and the perinatal death rate was 1.3 per 1000 (the national average is 10 per 1000).

Available statistics indicate that midwife-attended planned home birth is safer than hospital birth. In several recent studies (Marimikel Penn, personal communication; Sullivan and Weitz, 1988; Tyson 1991), the Cesarean rates for midwife-attended births planned to occur at home are consistently around 4 percent; hospital transfer rates range from 8-11 percent; perinatal mortality rates range from 1-5/1000. (Maternal mortality is almost nonexistent in planned home birth.) In further summary, I quote a recent study from Holland on far larger numbers than are generally available:

> The PNMR [perinatal mortality rate] was higher for doctors in hospital (18.9/1000 [83,351 births]) than for doctors at home (4.5/1000 [21,653 births]), which was in turn higher than for midwives in hospital (2.1/1000 [34,874 births]) than for midwives at home (1.0/1000 [44,676 births])....[These results show] that care by obstetricians is not only incapable, save in exceptional cases, of reducing predicted risk, but even that it actually provokes and adds to the dangers....[They confirm] that midwives, practising their skills in human relations and without sophisticated technological aids, are the most effective guardians of childbirth and that the emotional security of a familiar setting, the home, makes a greater contribution to safety than does the equipment in hospital to facilitate obstetric interventions in cases of emergency (Tew, 1990:267).

(For a more detailed discussion of the relative safety of home vs. hospital birth, see Davis-Floyd 1992 (Ch. 4).)