

CAROLYN SARGENT  
GRACE BASCOPE  
Department of Anthropology  
Southern Methodist University

## Ways of Knowing about Birth in Three Cultures

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*This article examines the concept of authoritative knowledge elaborated by Brigitte Jordan, using examples of birthing systems in Mexico, Texas, and Jamaica. We explore the linkages between the distribution of knowledge about birth and the use of technology; the valuation of biomedical and alternative "ways of knowing" about birth; the production of authoritative knowledge through interaction; and the relationship between authoritative knowledge and social status. In the Maya low-technology, collaborative birthing system in Mexico, the midwife and other adult women share knowledge about birth. In contrast, Spanish-speaking women undergoing cesarean delivery in a high-technology public hospital in Texas are, due to their limited English, only minimally able to interact with hospital staff. While they acknowledge the authoritative position of biomedical personnel and value technology, they protest their inability to communicate during their hospitalization. Jamaican women deliver in a formerly high-technology hospital system that is now experiencing economic austerity measures that render it increasingly dysfunctional. While use of technology is infrequent in the Jamaican case, authoritative knowledge remains vested in biomedicine. By means of three examples we respond to Jordan's call for a rethinking of authoritative knowledge in high- and low-technology settings. [reproduction, technology, childbirth, authoritative knowledge]*

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In her elaboration of the concept of authoritative knowledge Jordan observes that, for any particular domain, when more than one knowledge system exists, one kind of knowledge often gains ascendance (1993[1978]:152). The legitimizing of one way of knowing as authoritative often leads to the devaluation of all other ways of knowing. Thus one system of authoritative knowledge comes to appear natural, reasonable, and shared (Jordan and Irwin 1989). People actively engage in the production and reproduction of authoritative knowledge, thus continually reinforcing its validity. Correspondingly, Starr refers to authority as "the

probability that particular definitions of reality and judgments of meaning and value will prevail as valid and true" (1982:13). Cultural authority, such as the authoritative knowledge of physicians, may reside in scholarly or scientific texts. Authority may also entail the control of action; in this sense authority implies the "possession of some status, quality, or claim that compels trust or obedience" (Starr 1982:9). It is in their capacity as cultural authorities that specialists such as physicians, nurses, and midwives make judgments about what constitutes illness, labor complications, or necessary delivery procedures.

Through her well-known analyses of birth in several cultures, Jordan (1993[1978]) has explored the constitution and display of authoritative knowledge regarding birth in high- and low-technology settings. In this research she has focused especially on the degree of autonomy allowed to the laboring woman, and the extent to which the woman may be said to "own" the birth. She notes that at birth, as in other social situations, various "ways of knowing" exist, some of which possess more weight than others. Certain individuals appear to possess knowledge that is authoritative, that "counts" (1993[1978]:87). Such authoritative knowledge is accepted as legitimate, is socially sanctioned, and serves as grounds for action.

In this article we reexamine the merits of the concept of authoritative knowledge developed by Jordan. We critique selected features of her propositions regarding the constitution and display of authoritative knowledge systems and attendant power relationships by examining the forms that authoritative knowledge takes in birthing systems in Mexico, Texas, and Jamaica. We intend to contribute to the understanding of how authoritative knowledge is displayed at birth by focusing on (1) the relationship between the hierarchical distribution of knowledge about birth and reliance on technological intervention in labor and delivery; (2) the relative valuation of biomedical and alternative "ways of knowing" about birth in the three systems; and (3) the relationship between the expression of authoritative knowledge and authority positions—in particular, the implications of the distribution of power among pregnant women and those who assist them.

The concept of authoritative knowledge has received attention generally in anthropological research (Clifford 1986; Marcus and Fischer 1986) and, increasingly, from medical anthropologists engaged in the critical examination of the social production of knowledge (Kaufert and O'Neil 1993; Lindenbaum and Lock 1993; Rapp 1993; Young 1982). A central concern among these anthropologists has been the privileged status of biomedicine as a realm of knowledge, which is separate from other cultural or social domains, and which is perceived as objectively valid (Lock and Scheper-Hughes 1990; Rhodes 1990:160). Cultural analyses of biomedicine aim to contextualize biomedicine and reveal its historical, theoretical, and culturally constructed foundations (Martin 1987, 1991; Rhodes 1990). Correspondingly, the production of biomedical knowledge, and the legitimation of such knowledge as scientifically valid and authoritative, is itself a cultural process, appropriate for anthropological investigation (Lindenbaum and Lock 1993; Rhodes 1990).

The production and display of authoritative knowledge regarding birth has recently attracted particular interest, generated initially by Jordan's study of the production of authoritative knowledge in high-technology settings (Jordan 1992, 1993[1978]:ch. 6). In a detailed analysis of a birth occurring in a high-technology

hospital, Jordan documents the priority accorded to the technologically and procedurally based knowledge of physicians. She finds that competing kinds of knowledge that are held by women or by other participants are judged irrelevant (1993[1978]:152). Her focus is on how technology-dependent knowledge becomes hierarchically distributed (1993[1978]:155) through social interaction among participants at birth. As a consequence of this process of interaction, technological knowledge becomes the knowledge that "counts," and on the basis of which decisions are made. In the United States, for example, most members of society, including childbearing women, medical professionals, and laypersons, accept a technomedical view of birth (Jordan and Irwin 1989:19). In this and other high-technology birthing systems there is a clear lack of priority allocated to the laboring woman's experience of her body as a form of knowledge, and primacy is given to the expertise of obstetricians who manage the technology, or artifacts of labor (Jordan 1993[1978]:151).

Jordan's propositions regarding authoritative knowledge have been further explored, validated, and challenged recently by numerous researchers engaged in the study of the birth process (Davis-Floyd and Sargent 1997). For example, research by Sargent and Stark (1989), Lazarus (1994), and Davis-Floyd (1992, 1994) concerning women's perspectives on technological intervention during hospital births in the United States also indicates that women value the medicalization of birth. Indeed, many women prefer more, rather than less, medical intervention during delivery (see also McClain 1985). This research substantiates the conclusion that "most women willingly submit themselves to the authority of the medical view . . . they manage to experience the technologies and procedures as reassuring and the delegation of authority to physicians as functioning in their own . . . best interests" (Jordan and Irwin 1989:20).

Jordan's analysis of authoritative knowledge emphasizes the importance of controlling the technical procedures necessary to manage labor for defining who should be seen as legitimate decision makers during delivery (1993[1978]:151). Following her argument, authoritative knowledge distinctly does not mean the knowledge of persons of particular statuses, in positions of power and authority. Rather, what is of interest is how particular practices and reasonings are legitimized and reproduced within a "community of practice" (1993[1978]:154) in specific social situations such as birth.

In her ethnographic research on birth in cross-cultural perspective, Jordan (1993[1978], 1997) offers an account of the worldwide process through which biomedical authority has come to dominate childbirth. Her work has provided direction to the comparative study of birth by showing how authority over reproductive processes is socially constituted, displayed, and reinforced. This groundbreaking research also points to the need for continued rethinking of authoritative knowledge in high- and low-technology settings, in order to further document and analyze the variation in authoritative knowledge systems.

Our reanalysis of Jordan's propositions on authoritative knowledge employs three cases, each of which raises important issues concerning the determinants and display of authoritative knowledge. By means of these case studies in differing birthing systems, we examine the significance of control of technology, and the relevance of status positions for determining the distribution of power among

participants at birth. While Jordan argues that authoritative knowledge is possessed by those who control the artifacts necessary to accomplish the work, we argue that it is also contingent on shared experience and social position. We consider the extent to which authority entails some status or position that, as Starr argues, compels trust or obedience (1982:9). In addition, we debate whether the knowledge that "participants agree counts" is necessarily generated through social interaction (Jordan 1993[1978]:154) and we consider the forms that such social interaction may take. We also explore the variation in acceptable "ways of knowing" about birth—the validity of women's personal and experiential knowledge about labor in relation to the growing worldwide legitimacy of biomedical constructs of birth.

The settings for our discussion include a Maya village in Yucatán, Mexico; a public general hospital in Texas; and a public maternity hospital in Kingston, Jamaica. The Maya village of Yaxuna in the central Yucatán peninsula has a population of about 400 and does not have a functioning clinic, resident doctor, or nurse. Most women deliver at home, attended by a lay midwife and family members. In urban Jamaica and Texas, home births are rare and almost all women deliver in hospitals. Most low-income women in these major metropolitan centers deliver in the two hospitals represented in our study. Both Memorial Hospital in Texas (a pseudonym) and Victoria Jubilee Hospital in Kingston target indigent populations and handle approximately 15,000 births annually.

Jordan elaborated her concept of authoritative knowledge using two high-technology settings: a hospital labor room and an airlines operations room in a metropolitan airport. Like Jordan, we use different settings and circumstances in an attempt to add insight into the production of authoritative knowledge. Although each of our examples concerns birthing, this should not in any way be taken as a comparison of the three systems. They were chosen because of their illustrative value vis-à-vis the use of technology in the production and maintenance of authoritative knowledge. We will show that in the Maya case technology is low and infrequently employed; in the Texas case technology is extremely advanced and widely used; and in the Jamaican case both technology and other ways of knowing have been lost.<sup>1</sup>

### Home Birth in Yucatán

We begin with a discussion of childbirth among rural Maya in Mexico because Jordan's initial research was situated in a similar Maya community (1993[1978]). We observe significant commonalities as well as some areas of divergence between Jordan's and our observations that warrant attention. Through our exploration of Maya childbirth we assess the display of authoritative knowledge in a low-technology birthing system. We consider the extent to which those participating in a birth share or monopolize decision-making authority, the implications of technological interventions at birth for the distribution of power among those present, and the links between social status in the community and the right to claim authoritative knowledge.

Fieldwork on Maya childbirth was conducted in the springs of 1991 and 1992, and in the summer of 1994 in the community of Yaxuna. Yaxuna is an *ejido* (corporately held land) village of subsistence cultivators numbering about 400, located 29 kilometers from the highway by unimproved dirt road, and 80 kilometers

from the nearest urban center. The community subsists primarily through corn cultivation. There is little cash cropping, other than occasional sale of citrus fruits and honey. Three families own general stores, but their primary source of subsistence too is corn cultivation. All residents of the village are Maya. Most men are bilingual Mayan and Spanish speakers. Although most women understand some Spanish, none use it as their primary mode of communication. Conversations are usually a mixture of Spanish and Mayan. Village households are close-knit economic units in which men and women perform complementary tasks. Married women carry significant authority within the home and may have independent control over their own economic endeavors, such as dressmaking or community gardening. Daughters remain in the home until marriage, at which time they enter the homes or spheres of influence of the husband's family.

Research on medical beliefs and practices in this community formed part of a broader baseline ethnographic survey conducted for the Yaxuna Archaeological Project.<sup>2</sup> Data collection included unstructured interviews with government health personnel in the surrounding villages concerning the organization of local health services, and many hours of observation of their health care delivery, as well as interviews with the 84 women of reproductive age in the village. Of these women, 24 were postpuberty but unmarried. Sixty women in the village were married, and all except six of these had children.

Unmarried women on numerous occasions were informally interviewed about common health problems, sources of health care, and concepts of well-being. Women with children were interviewed about birth concepts and practices. Most information gathering in Yaxuna took the form of listening to and participating in natural discourse (see Price 1993 and Watanabe 1992:xi for an explanation and justification of this methodology among the Maya). While listening to illness and childbirth narratives, the anthropologist (Bascope) often asked specific questions to probe illness beliefs and treatment choices. She took field notes in Spanish during interviews and conversations. Almost no conversations in Yaxuna take place in a dyadic format, so information was gathered from groups of several women at a time.

Women attempted to speak Spanish in the presence of the anthropologist, and someone in the group always took on the role of translator to accommodate her very limited understanding of Mayan. In addition to the notes taken during conversations, specific points were clarified at later opportunities. As Jordan noted in her earlier Maya research, numerous women were exceptionally attentive to the anthropologist's need for accurate translation, and often volunteered additional clarification. Supplemental information regarding local health concerns was acquired (by Sargent) during participation in medical consultations held by two volunteer physicians (an internist and a pediatrician) from the United States.

One author (Bascope) observed eight women during their prenatal visits and deliveries and also attended postpartum consultations between new mothers and local midwives. At local births she observed the two village midwives still practicing.<sup>3</sup> During deliveries Bascope entered into general conversation with other participants, and assisted at the birth by such means as holding candles for light, supporting the laboring woman, and running errands. Immediately following the births she wrote an account of the event, structuring her recollections by using

Jordan's descriptions of Maya birth (1993[1978]). In addition, she returned to question the midwife and family members regarding issues that remained unclear.

Although there is no doctor or nurse resident in Yaxuna, the community has formally requested that the government assign a doctor to the village. In the hope of attracting a permanent physician, members of the community built a clinic with federal aid and communal labor. The new clinic remains unstaffed, however, because the village population is held to be insufficient to warrant a resident physician or nurse. Thus the only primary birth attendants are local midwives. The nearest biomedical facility offering obstetric care is five kilometers from the village, in the town of Kancabzonot. Yaxuna women rarely travel to the Kancabzonot clinic to deliver except when emergencies arise during labor. In principle, a Social Security doctor and Health Department doctor see patients in the village weekly, but their visits are often less regular than the formal schedule suggests. Babies are born at home unless complications are severe enough to require transferring the mother to the nearest towns. Home births are attended by one of the two lay midwives, each of whom is in her mid-sixties.

Over the past 35 years Dona Lila, the more popular of the two midwives in the village, has delivered at least one baby in virtually every home. Dona Lila was trained by her father-in-law, a respected shaman. Before becoming a midwife she assisted other older women who were delivering babies in those days. Gradually she became the only person attending deliveries, and has practiced her specialty in the village and surrounding areas for more than 30 years. Women and men of the village stated in interviews that she has a gift, a special temperament to be a midwife, and that she has courage.

Her methods have been witnessed by almost everyone, are widely understood by both the women and men of the village, and have long been the standard by which "correct" and "normal" births are judged. Her dynamic personality and the place of her family within the community buttress her authority. In contrast, the other practicing midwife, Dona Flora, is not perceived as having authoritative knowledge; her practices are viewed with skepticism and are not widely regarded as legitimate. Her personality and her family status within the village also contribute to this position.<sup>4</sup> Dona Lila is from a large and prominent family, which contains most of the respected village elders to whom others defer in matters of ritual importance. The evident importance of family position in the community for the legitimacy of Dona Lila's views, in contrast to those of Dona Flora, leads us to suggest that control of technology does not necessarily underlie authoritative knowledge. Rather, shared experience—Dona Lila's three decades of visibility as a local midwife—and family status also may generate "knowledge that counts." Status may then become conflated with authority and expertise.

Dona Flora became a midwife about 20 years ago due to a specific incident in which her niece experienced a difficult labor. Dona Flora grabbed her niece by the hair of her head and pulled hard. The baby was born immediately and the mother quickly recovered. After that Dona Flora had a reputation as a midwife, although even persons who choose her as their birth attendant say she is not skilled. Some who choose her do so because Dona Lila is unavailable, or because Dona Flora is a close relative and kinship ties pose obligations. Dona Flora is from a small, socially isolated family within the village. She and her husband are considered to

have difficult and contentious personalities, and her son is seen as scheming and untrustworthy. The rumors and horror stories that circulate about Dona Flora's inability to make appropriate diagnoses or to deliver proper treatment illustrate the links between family status, position in the community, past experience, and perceived authority.

While we describe Yaxuna birthing practices as low-technology, the local midwives have recently been introduced to biomedical obstetric procedures recommended by the government public health authorities. In the summer of 1991 both midwives went through a traditional midwife training course held by the Social Security doctor in the next village. Bascope's interviews with the midwives, and her observations of eight women during labor and delivery, (seven with Dona Lila and one with Dona Flora), suggest that the midwives have not altered their obstetric practices as a result of the training session. Correspondingly, they have not enhanced their position of authority or augmented the public perception of their authoritative knowledge by means of this training.<sup>5</sup>

In order to illustrate the authority displayed by the midwife relative to the laboring woman and other birth attendants, we describe two births in Yaxuna attended by Dona Lila.<sup>6</sup> Each birth clarifies the extent to which control of technology underlies the midwife's authority at the birth, and legitimizes her specialized expertise. The first case involves a mother experiencing her sixth delivery; the second case describes the delivery of a woman giving birth to her first child. We compare the roles of the participants at both deliveries. We focus on how the authoritative position of the midwife varies relative to the experience of the mother, and detail the technical procedures employed in each birth.

At one delivery a multiparous woman, Dona Susi, was aided by her husband, Dona Lila, and the husband's mother, Dona Felicita. It was her sixth delivery; she had not experienced complications in her previous pregnancies or labors, and all the infants had appeared healthy at birth. Dona Susi had labored from morning until early afternoon. The midwife and Bascope were called by Dona Susi about 2:00 p.m. Two hours later the baby was born. During this two-hour period the attending adults did not give any advice to Dona Susi. Rather, those present, including Dona Susi, discussed affairs of the household and village events. They were, however, keenly aware of Dona Susi's progress. At the start of a contraction, Dona Susi would assume the position preferred by Dona Lila, the midwife. Without discussion, the mother-in-law wiped Dona Susi's face and blew on her head, and the husband supported her in her hammock. At such times the conversation would turn to verbal encouragement and support. Dona Susi was thus physically surrounded by sympathetic birth attendants, as Jordan describes in her portrayal of Maya birth (1993[1978]:36).

Jordan notes that for a first birth, when contractions become stronger and more frequent, talk turns to instruction for the inexperienced couple (1993[1978]:32). For Dona Susi and her husband this was unnecessary. The assumption was that they were knowledgeable about birth, and Dona Susi was competent to assess and comment on the state of her body, if necessary. Very little of the conversation throughout labor had to do with the birth process. At one point the husband was admonished by Dona Lila for not covering all the holes in the walls, to protect against dangerous winds.<sup>7</sup> Other than this, Dona Lila primarily watched Dona Susi,

asked her periodically how she felt, and checked her during contractions. At that time she would stretch the cervix with her fingers, massage the fundus, and offer her opinion concerning the progress of labor. She also massaged the baby's head with olive oil when it crowned. She then received the baby, handed the baby to its grandmother, and waited for the delivery of the placenta, after which she tied and cut the cord. Finally, she bound the mother's abdomen and her forehead with cloth, stretched her on her hammock, and covered her with blankets.

Throughout the birth process Dona Susi, the mother, remained in charge. None of the other adults chided her or gave her orders, because of her status as the mother of six. At this birth the midwife and the other adults, including the laboring woman, shared equal knowledge regarding labor and appropriate delivery procedures. All the techniques employed here by Dona Lila may also be practiced by other experienced adult women. In this instance the midwife's claim to authoritative knowledge is based less on her unique technological expertise (although she is valued for her role in cutting the cord, which others are reluctant to do) than for her reassurance as an observer. She is greatly respected for her participation in previous successful births, as she is held to have delivered half the population of the village. As a member of the oldest family in the village, and known as being trustworthy, discrete, and reliable, her family status is remarked upon, and this also enhances her credibility.

The second case involves Dona Nina, who was delivering her first child. She was in advanced labor by the time her mother, husband, and mother-in-law (also Dona Felicita, the mother-in-law of Dona Susi) called Dona Lila and the anthropologist (Bascopé). She labored sitting up in her hammock, supported by her mother or husband, who took turns behind her in a chair. From the beginning she was encouraged to bear down as much as possible (see Jordan 1993[1978]:38 for a similar description of early pushing). Dona Lila maintained her position seated on a six-inch-high stool in front of Nina. During contractions she applied considerable pressure to the uterine fundus with one hand while trying to stretch the perineum with the other. She put warmed olive oil on her fingers to lubricate the baby's head so it could slip out. Nina's father arrived and took turns with others in supporting her. The father or husband held Nina's legs out to the sides; then Dona Lila and the mother both pulled on the cervix and oiled the baby's head. Her father occasionally pulled on the perineum as well. During contractions they told Nina to hold her breath as long as possible to aid in pushing and put their hands over her mouth to force her to hold her breath longer. She often fought them and tried to pull their hands away. Her mother also frequently blew on the top of Dona Nina's head during contractions.

Dona Lila gave Nina two shots of oxytocin, 40 minutes apart. During and between contractions everyone chided and cajoled Nina to work harder. They said she was young and ignorant, as this was her first baby. Nina remained completely quiet throughout the entire labor and delivery and was seldom consulted. Her husband also remained quiet, responding to instructions of the relatives and midwife. For the last 20 minutes of contractions the husband stood behind Nina and bent over her. She was instructed to lock her fingers behind his neck and pull. Nina expressed a wish to pull on a rope that had been tied on a pole over the hammock, but the others told her to hold her husband's neck, and they prevailed.



When the baby was born Dona Lila blew into its mouth. When satisfied the baby was breathing, she handed it to Nina's mother. Dona Lila turned her attention to the delivery of the placenta. She pressed down on the fundus and exerted pressure on the cord until the placenta was delivered. She then cut the cord and molded the baby's head until she approved of its shape. She gave the new mother 20 drops of Baralgina (an analgesic widely used in the community) "for uterine pain" and told her to nurse the baby in about four hours when it began to cry, but to first give it two teaspoons of water, as its lungs were dry.

In this example the laboring woman, Dona Nina, was not consulted regarding her preferences or feelings, or asked to assess the progress of her labor. Her marginalized position and the dominant role of the other adults present appear to be attributable to her ignorance as a first-time mother. The value attributed to the laboring woman's sense of her body as a form of knowledge thus is associated with birth experience. At this birth Dona Lila offered more instruction than in the first example, but she shared responsibility with Dona Nina's older relatives. The midwife's only specialized expertise appears to lie in the provision of the oxytocin injection.<sup>8</sup>

With regard to the innovative oxytocin injections it is important to note that any of the helpers attending a birth may work to achieve the same objective as that sought with the oxytocin—to accelerate labor—by pushing on the fundus or stretching the cervix. To date only Dona Lila gives shots, and her social standing as representative of a politically important family and respected midwife appears to justify her claim to this practice. In 1990 Dona Lila adopted of her own accord the use of oxytocin injections to accelerate labor. This intervention was borrowed from a practitioner in a neighboring village who is not a doctor but who was once a salesman for a pharmaceutical company. Dona Lila began to use oxytocin after she broke her wrist and felt that she no longer had the grip or strength needed in her practice to expedite labor by pushing on the fundus or stretching the cervical os. Oxytocin enabled her to continue with her work by substituting the injection for physical strength.

Through the trusted drug salesman the community has become familiar with a small battery of drugs, such as oxytocin. Oxytocin appears to have been adopted by Dona Lila and accepted by local women because its function (as interpreted by the drug salesman) corresponded to widespread notions of how labor should progress and what interventions may be necessary. Oxytocin easily fit into the preexisting understanding that labor may need to be accelerated. This may be accomplished by any experienced adult by pushing on the fundus, stretching the cervix, or by means of oxytocin injections. Local women, their husbands, and midwives share the notion that a rapid delivery is to be much desired, as birth is considered to be a dangerous time. The more quickly it is over, the less time the mother and child are felt to be exposed to risk.<sup>9</sup>

To summarize, in Yaxuna Maya married women share widespread understandings of the process of labor, and of possible interventions considered beneficial during delivery. This low-technology birthing system may be categorized as collaborative, a system in which authoritative knowledge is broadly distributed. However, personal experience clearly plays a part in the right to claim competence regarding birth practices. Thus a young, inexperienced mother was subordinated to

the authority of more knowledgeable adults, foremost among whom was the midwife. At the delivery of the more experienced mother, all the individuals displayed shared notions of the appropriate procedures to follow. All of them, including the mother, informed the anthropologist of what was happening. Because there is only minimal application of specialized technical procedures during delivery, the midwife's authority does not rest solely or primarily on a monopoly of technological expertise. Rather, Dona Lila's claim to authoritative knowledge derives from the respect resulting from her past successes and her position as a member of a family holding high status in the community.<sup>10</sup>

### **Hospital Birth in Texas**

Jordan argues that authoritative knowledge is produced through social interaction. This statement, however, fails to take into account preexisting patterns of authority—hierarchies that shape the way the interaction takes place. In the following case we show an instance where women submit to a highly technological way of birth, not through negotiation, but rather through preexisting, shared assumptions regarding the distribution of authoritative knowledge. In this discussion of women's experiences with cesarean delivery in a public hospital in Texas, we explore how authoritative knowledge is sustained through interactions among patients and physicians in which patients are only minimal participants. We also document how women's "ways of knowing" about birth are devalued and how biomedical knowledge of it is reinforced. We conclude, as did Jordan, that control of technology is linked to decision-making authority surrounding birth. Hospitalized women acknowledge the authority of physicians and other hospital staff and respect their expert grasp of high technology, but they protest their exclusion from any dialogue with doctors and nurses.

In this section we describe women's highly medicalized birth experiences within a particularly medicalized system. In the hospital birthing system of the United States, cesarean section—surgical birth—represents the ultimate technological intervention. As such, it provides information about the display of authoritative knowledge in a high technology birthing system. As elsewhere in the United States, childbirth in Texas has become increasingly medicalized (Sargent and Stark 1989) so that reliance on technological intervention during labor and delivery represents the norm rather than the exception. Perhaps the most striking feature of the increased medicalization of birth is the national rate of cesarean section: 22.6 percent in 1992. In general, Texas urban institutions reflect this pattern. In recent years Memorial Hospital has had a cesarean rate of approximately 17 percent, in contrast to local private hospitals, where rates are as high as 30 percent (Sargent and Stark 1987, 1989). Our study at Memorial Hospital, conducted in 1986–87, focused on women who had undergone cesarean delivery in order to explore their experience of this high-technology system.

An interview schedule including both structured and open-ended questions explored women's knowledge about their cesarean, their anticipation of childbirth, feelings about their surgery, feelings about their recovery, information they would have liked to receive (but didn't) about the birth, the nature of their interactions and negotiations with biomedical personnel, and the distribution of decision-making authority during their hospital birth experience. These interviews were conducted

in Spanish during the three- to five-day hospitalization of the women in the sample.<sup>11</sup> We interviewed 33 Latina women: 8 were born in the United States, 22 were born in Mexico, and 3 were newly arrived from other Central American countries. We categorize all of these women as “Latina”—although we recognize the problematic aspects of classifying women of varying ethnicity as one sample (see Quesada 1976; Schreiber and Homiak 1981)—because they all asked to be interviewed in Spanish.

The interview schedule was translated into Spanish, reviewed by a native speaker of Spanish, field tested, and modified. Responses to open-ended questions and other spontaneous remarks by the respondents were written down verbatim in Spanish. For data analysis all material was translated into English by the bilingual anthropologist. Materials that lent themselves to statistical analysis were coded and analyzed using SPSS. Noncoded material was read multiple times and analyzed by the anthropologists for illustrative purposes and to supplement generalizations drawn from the survey data.

Although Memorial Hospital is a county hospital that targets indigent women, we focus on language rather than class affiliation because other than anxiety regarding the health of the baby, the impact of language constraints was the primary concern expressed by the women interviewed. Analysis of interview data with these women lead us to suggest that their birth experiences—for example, their interactions with doctors and nurses and the women’s potential for influencing such interactions—were especially structured by their limited English. We also suggest that language limitations particularly constrained these women from participating in decision making during labor and delivery. In addition, most women described to the interviewer notions of physiology and birth hazards that they were unable to express. Thus the women’s understandings and concerns about the birth process and their interpretations of body functioning were not addressed by doctors and nurses.

Perhaps the most striking feature of our encounters with these women was the lack of information or understanding they possessed concerning their birth experience. Because of their minimal English most women had almost no interactions with hospital staff that the women perceived as satisfactory and comprehensible. Although the hospital employs interpreters, they may not be available for every patient. When Spanish-speaking personnel are unavailable, bilingual patients are sometimes asked to interpret, with varying degrees of success. As one woman observed, “When I had a roommate who spoke Spanish and English, the doctors and everyone would talk to me through her. Now nobody tries since I have a new roommate.”

The problems women experienced due to language constraints ranged from discomfort resulting from the inability to convey their needs or concerns to serious misunderstandings; for example: “They [the nurses] do everything fast and a little short because we can’t talk to them”; “If you don’t speak English they don’t treat you well.” Most patients had little knowledge of why they delivered by cesarean or were misinformed about the future implications of the cesarean birth. One woman explained that no one told her why she had a cesarean; she assumed that it was because her first child, born at seven months, was premature. Several women

feared they would never really return to normal again, that they would be weakened and debilitated by the surgery, unable to exercise or do routine work.

All women in this sample accepted the authoritative position of doctors and nurses, and expressed confidence in their technical expertise. In this regard, Jordan's proposition that authoritative knowledge rests on control of technology (the "artifacts of birth") receives support. However, the women's limited ability to participate in decision making, to discuss, challenge, or agree with hospital staff, leads us to amend her notion that the hierarchical distribution of knowledge is produced through social interaction. In this case the lack of interaction, or even negative interaction, constructs authoritative knowledge because it reproduces a radical gap or disjuncture between the bearers of authoritative knowledge and the objects of its deployment.<sup>12</sup> The silent participation of these women thus confirms the preexistent hierarchy of knowledge regarding birth.

These women, though silenced, should not be assumed to have acquiesced to their inability to communicate with health professionals. They accepted the ultimate authority of the hospital and acknowledged without challenge the authoritative expertise of physicians. However, they protested their inability to participate in the events surrounding their birth—to obtain information, to express opinions, or to seek alternative decisions. When able to communicate in Spanish, women immediately had numerous unanswered questions and provided opinions regarding their condition that they would have liked to convey earlier. For instance, one woman thought she might have had a tubal ligation at the time of her cesarean but had never been able to ascertain whether this had occurred. She asked the anthropologist to get this information for her. Another believed her cesarean was due to a fall in her fifth month of pregnancy. She had spent anxious months waiting to deliver after the accident, and as she had never received an explanation for her surgery, she continued to assume the cesarean was the consequence of injuring her abdomen. She was also concerned about having injured the baby. The health of the baby was an issue to her because he seemed to avoid light (as though his eyes hurt) and often vomited when he was fed. She had been unable to question the nurse about the baby's well-being and requested that the interviewer speak to the nurse on her behalf.

A 23-year-old patient reported her situation as follows:

I got an infection in my vagina two days before delivery—blisters that burned very much. Now I have an infection in the scar. It's not related to the one in the vagina, that one has been cured. They gave me no information (about why the cesarean was necessary). I only found out minutes before delivery.

For some women the inaccessibility of important information generated serious anxiety. While they had confidence that doctors or nurses possessed the answers to their questions, they had no access to these sources of authority. For example, one mother had been unable to see her baby by the third postpartum day and had not been informed of where or how the baby was. She said, "Only today [third day postpartum] at 2:00 p.m. did I get to see the baby. I don't know why they don't bring the baby to me. I want to feed it and my breasts are getting very hard and painful." She solicited the anthropologist's assistance in translating her questions to the nursing staff. Eventually it became clear that the mother had an infection. Because of this she had not been able to hold her baby and had not been

taken to see the baby for the first time until that afternoon. Another woman, suffering from an infection in her incision, was worried and confused about her slow recovery, and was distressed about her delivery experience. She explained that no one paid any attention to her in labor. She was especially confused by the atmosphere in the delivery room, where the doctors listened to very loud music (which seemed to her characteristic of a party but inappropriate for a hospital) during her cesarean.

The marginalization of these woman during their birth experience generated a widespread sense of lack of knowledge. Although the physician's right to authoritative knowledge was assumed, the women felt unable to get or communicate pertinent information. Every patient interviewed desired additional information about the reasons for cesarean delivery, the process of surgery, the course of recovery, and their future reproductive health. One woman from El Salvador explained on her third postpartum day that because she spoke no English and could not ask anyone, she had no idea how long her hospital stay was supposed to last. She had a young child at home who needed care, and she worried about the state of her own health. Like this woman, most of the cesarean patients were disturbed by their inability to understand what had happened to them and its consequences for their health.

Many women shared notions that after a normal birth the vagina was "open," enabling the placenta, blood, and any other retained materials to be expelled. After the cesarean they were concerned that they might be retaining harmful products that should have been discharged. They were unable to convey this anxiety in the absence of receptive, Spanish-speaking medical staff. Thus they were unable to communicate knowledge they considered valid about their own physiology, to which hospital staff were indifferent.<sup>13</sup> In this regard our research confirms that of Lazarus (1988a, 1988b), who documents the impact of language constraints on Puerto Rican women using prenatal services in a major metropolitan area hospital. She observes that "for Puerto Rican women who did not speak English the language barrier contributed to a lack of clinical communication and led to frustration on the part of both the women and clinicians. Important information about perinatal health care and therapeutics was not imparted, and this added considerably to patients' stress" (1988a:41).

The lack of Spanish-speaking doctors and nurses or other interpreters on the labor ward and in the operating room prevented many of these women from even minimal interaction with hospital staff, and certainly prevented them from discussing the course of their labor or their preferences regarding technological interventions at the birth. However, these women were not challenging the authoritative knowledge of the doctors and nurses attending them. Indeed, the major complaint of these women was not the technological intervention of the cesarean delivery, but the silence surrounding it.<sup>14</sup>

How do the experiences of these women inform our understanding of the decision-making process and of the display of authoritative knowledge at deliveries in a major public hospital? Jordan has said (1992:4) that by *authoritative knowledge* she specifically does not mean the knowledge of people in authority positions, but rather an "interactionally grounded notion." Based on her argument, we ask to what extent authoritative knowledge about birth in this setting is shared by the partici-

pants and produced in the process of social interaction during delivery. Our research suggests that in some cases authoritative knowledge is embedded in positions of authority. Particularly in the case of a surgical birth, patients are dependent on the technological expertise and knowledge of the doctors in attendance (Sargent and Stark 1987, 1989). In cesarean births control of the technological "artifacts of birth," vested in the status of the doctor, most clearly underlie the unique claim to authoritative knowledge.

As Lazarus argues, the "control of medical knowledge, technical procedures, and rules of behavior, as well as control of patients' access to and understanding of information on which treatment decisions are made, creates a world of power for the medical profession" (1988a:45). Patient access to the "technologically and procedurally based knowledge" described by Jordan (1993[1978]:152) as key to authoritative knowledge is especially problematic where patients do not speak the dominant language and are placed in situations of extreme dependency. The inevitable dependency of the surgical patient is heightened, as their limited English skills prevent them from participating in decision making or even from sustaining dialogue during labor. Women we interviewed were not only unable to assert their preferences concerning the management of their birth, or to negotiate decisions regarding technological interventions, they were literally unable to interact at all. The production, possession, and display of knowledge of any sort is a product of the capacity to participate in interactions with doctors and nursing staff. These women accepted that specialized knowledge and expertise are vested in the position of the physician (see also Lazarus 1988b for similar perspectives in a Puerto Rican sample). However, once their silence could be broken in the interview context, they did protest to hospital personnel their lack of access to information concerning the causes and consequences of the cesarean and their inability to effectively communicate anxieties associated with cultural concepts of physiology.

### **Hospital Birth in Jamaica**

In this section we explore the linkages between control of technical procedures, authority positions, and the display of authoritative knowledge among those participating in hospital births in Kingston, Jamaica. Women in Kingston have increasingly turned to hospital-based government nurse-midwives for authoritative knowledge regarding birth, as lay midwifery has been eliminated. Once a significant source of expert knowledge, the lay midwife, or nana, currently assists births only rarely. However, the public hospital system has experienced problematic budgetary cutbacks related to the decline of the Jamaican economy. In consequence the hospital labor and delivery service has progressively deteriorated, leading to frequent unattended deliveries in hospital. In our discussion we suggest that women continue to rely on an increasingly dysfunctional hospital maternity system because they value the authoritative knowledge of biomedical specialists. We discuss the relationship between reliance on the technological expertise of physicians and nurse-midwives, and their important role as repositories of knowledge that "counts." We also consider the extent to which alternative "ways of knowing," for example knowledge derived from one's body, which is respected and acknowledged in lay midwifery, are acknowledged in Jamaican biomedicine or by women themselves during labor.

A combination of factors, including staff and supply shortages and hospital budget shortages, are implicated in the frequency of unattended births. Fundamentally, the crisis is both a consequence of the current decline in the Jamaican economy (Sargent and Harris 1992) and the product of a century of efforts to eradicate lay midwifery, with no concomitant priority placed on developing in urban areas of Jamaica a viable hospital birth system for women. The deterioration of the Jamaican economy, which has accompanied World Bank–supported structural adjustment policies, has led to cutbacks in health services, salaries of health professionals, and provisioning of hospitals. This budgetary retrenchment has generated many of the problems experienced by patients delivering at Jubilee Hospital.

Between 1987 and 1989 we conducted research in Kingston, the capital of Jamaica, regarding the use of prenatal care and delivery services provided at Victoria Jubilee Hospital, the primary maternity hospital on the island of Jamaica. This hospital, like its Texas counterpart, targets an indigent population, and also handles about 15,000 births per year. As part of the research we interviewed at the prenatal clinic over a period of five months 125 prenatal clients randomly chosen on different days of the week; a community sample of 50 women from two neighborhoods in the metropolitan Kingston area; 50 women representing all those attending the postnatal clinic over a five-week period; and 50 women hospitalized in the postnatal wards during four visits to the hospital.<sup>15</sup>

Like the Maya women discussed above, these neighborhood women were rarely alone for private interviews. They lived in an extremely low-income neighborhood and resided in houses constructed of scrap metal and lumber. All women were interviewed (by Sargent) more than once to obtain retrospective birth narratives from those who had delivered at Jubilee Hospital. Interviews were conducted in the single-room houses when possible, as well as standing on the street, sitting on the curb, and in the local bar. Both clinic and neighborhood women were interviewed by means of a detailed questionnaire that had structured and open-ended questions. The questionnaire sought information on reproductive history, pattern of prenatal care, explanatory models of birth, employment history, and support network (for additional details on methodology see Sargent and Rawlins 1991).

Through the birth stories of these women we examine their participation in decision making during labor and delivery in an urban metropolitan hospital. Birth in Jamaica has become highly medicalized over the past century (Sargent and Rawlins 1992), during which time Jamaica moved from a lay midwife–assisted, home-delivery-based birthing system to one characterized by medicalized, hospital births where nurse-midwives are the primary caregivers. Doctors serve as resources for particularly complicated deliveries. With the government-sponsored eradication of lay midwifery in urban areas, women have come to view birth as requiring medical supervision in a hospital setting. The nana, once an important authority figure respected for her specialized knowledge, is no longer an urban resource. Rather, low-income urban women turn to the public hospital in search of competent assistance during labor and delivery.

Based on extensive discussions with neighborhood women, together with the interviews with women in the prenatal clinics and in the postpartum ward at Jubilee Hospital, we have elicited a widely shared construction of birth as a condition

requiring expert medical supervision. While pregnancy is not usually considered a pathological state, and many women do not follow the schedule for prenatal visits, women do seek a knowledgeable assistant at delivery, preferably in a hospital context. The "expert" is usually the certified midwife.

All women interviewed at the hospital and at home who delivered at the Victoria Jubilee Hospital expressed strong dissatisfaction with their birth experiences resulting from limited and negative interactions with the nurse-midwives. Approximately 65 percent of women who delivered at Jubilee in 1987 were unattended at the time of the birth (Sargent and Rawlins 1991:184). They labored and delivered alone in their rooms. No relatives or friends were allowed to stay with the mothers during labor, and nurse-midwives were often unavailable. Unattended births at Jubilee Hospital have been associated with increasing maternal morbidity and mortality from "avoidable factors," for example, delays in response to complications such as bleeding and seizures (Samuels 1987:59). The neighborhood sample was very aware of the hazards of unattended births; knowledge of complications occurring among friends and acquaintances is supplemented by periodic newspaper accounts of especially dramatic maternal or infant mortality cases at Jubilee.

During one visit to the Jubilee labor and delivery ward we observed laboring women lined up in the hall, waiting to be examined in a central examining room by the nurse-midwife and doctor. Women sat or reclined on wooden benches and waited their turn. They were seen in order of their place in line rather than their stage of labor. The relative assertion of authority was evident in the tone and volume of the doctor's voice, overriding the women's speech during their examination. The 28-bed wards were often crowded, with one nurse for as many as 16 patients. In spite of the limited contact with a nurse-midwife or doctor, women reported that they did not usually turn to each other for assistance during labor or when unattended at the moment of delivery, although they did establish conversations and help one another with infant care in the postpartum ward. In addition to staff shortages and lack of supplies and medicines, women perceived that the nurse-midwives with whom they did have contact mistreated them, or "handled them rough." In the opinion of these women their ill-treatment resulted from their unfavorable status as low-income or indigent patients.<sup>16</sup>

Retrospective birth histories obtained from neighborhood women gave a sense of the experience of interacting with nurse-midwives at this hospital. Numerous mothers in the neighborhood described hostile encounters with nurses who disputed their assessment that they needed help or were ready to deliver. The women's interpretations of the course of their labor and their needs were consistently ignored or mocked by the nurse-midwives on duty. The nurse midwives' devaluation of the women's knowledge about their body was clearly disturbing to them. But while women criticized the behavior and attitudes of the nurse-midwives at Jubilee, they also felt dependent on them in case of an "emergency," in which medical expertise would be required to "save" them.

The devaluation of women's knowledge about their body by nurse-midwives signifies the distribution of authority at hospital births. The nurse-midwife, rather than the laboring woman, has knowledge that counts. This may be problematic for women who draw on ethnophysiology to inform their understanding of the birth



process. For example, in our fieldwork (and that of Kitzinger conducted in the 1960s in Jamaica) we found that humoral theory and the concept of movable organs located in the torso influenced women's notions of body functioning (see also MacCormack and Draper 1987:159–160). Women may fear that the uterus can come up out of the belly into the mother's chest and choke her. Kitzinger points out that when women feel the expulsive urge at the end of the first stage of labor this may be experienced as a catch in the throat and an involuntarily held breath, interpreted by many women as an indication of dangerous organ movement. Women delivering in hospital find that they do not receive reassurance from the nurse-midwife that the baby is not coming up. However, previously, during a home birth, the lay midwife would reassure the laboring woman that her uterus was not working itself up into her chest (Kitzinger 1982).

Given the likelihood of an unattended delivery or at best the brief attendance of a midwife, we questioned why women would deliver at the hospital at all. Conditions described by mothers suggested to us that women would avoid the hospital at all costs. Many mothers described lying unattended in the hospital, yelling for the nurse-midwife, who would finally arrive, only to say "Shut your mouth, mother, you're not ready yet." Others complained of being ignored, criticized, or slapped by staff. One woman, Nadia, whose three children were born at Jubilee, said the nurses tell you not to call until you push the baby out. She complained that she had no sheets, even though her bed had previously been occupied by a madwoman with skin sores. It is significant that no one complained of excessive (or any) interventions during the birth. Because of the deteriorating hospital budget and consequent shortages of personnel and supplies, none of the women experienced episiotomies, pain medication, forceps delivery, or other impositions of technology that were available in previous years. The hospital had a cesarean rate of less than 3 percent. Thus it seems unlikely that women would have sought to deliver in the hospital because of its reliance on technological procedures.

Despite the unsatisfactory conditions of the hospital, neighborhood women and women at the hospital prenatal clinic and postpartum wards expressed strong feelings of doubt and anxiety regarding their safety and survival should they attempt a home birth. As a consequence of the explicit health policy generated by British officials and dating from the early colonial period, home deliveries assisted by lay midwives are now almost unknown in Kingston (Sargent and Rawlins 1992), although lay midwives still function in some rural parishes. Thus young women interviewed in Kingston possessed little knowledge about the practices of the nana or about means to enhance reproductive health more generally. However, urban home deliveries attended by nurse-midwives were not uncommon until the 1970s, and women in their fifties and sixties reported in detail on their own experiences with the nana who attended them or whose practice they had observed. The nana had clearly been a source of specialized and authoritative knowledge for the women she served.

Miss Dottie, whose grandmother was a nana, described how the nana would stay with the new mother for nine days following the delivery. In addition to assisting at the delivery, the nana advised the mother on important matters such as how to avoid postpartum complications. "Baby cold," a postpartum affliction

caused by humoral imbalance, was a particular concern of newly delivered women who relied on the knowledge of the nana for its prevention. One older woman, Miss Mac, said that young women no longer fear baby cold, thinking that they've "dried up" following the delivery. These mothers will have problems later, she warned, due to the absence of an authority to remind them of appropriate behavior in the month following the birth. Miss Mac recalled how the nana would, on the ninth day following birth, dress the baby and then take the mother and baby out the door and around the yard, saying "Now you free, you can wash clothes and care for the baby."

In this way the nana was responsible for (re)introducing the mother to everyday life, and making the transition from the dangerous period of the birth and postpartum to daily routine. Kitzinger describes a similar role for the nana based on her 1965 fieldwork. She states that "the nana has a central and vitally important role in shepherding those involved through the drama of what is essentially the re-birth of a woman as a mother" (1982:194). Thus for those in urban areas the absence of the nana represents the loss of an authoritative figure with specialized knowledge to take responsibility for decision making at birth and during the postpartum period.

The perspective of women currently of reproductive age regarding home delivery is encapsulated in the remarks of one woman to whom hospital delivery seemed a necessity: "You could die if you stayed home," she said. The sense of dependency on the hospital is evident in the following description of how neighborhood women responded to an unexpected home birth. When one woman in the research neighborhood delivered at home after a precipitous labor, she and other women involved were distraught at the idea that the delivery would occur at home, without "help." In this incident Anne was unable to find transportation to the hospital before she was ready to deliver. The neighbors reported that they heard cries (some thought a man was beating his wife) and they came to gawk at the door. No one knew what to do. On the advice of the neighbor across the street Anne's mother sent for the community clinic nurse, who arrived shortly after the delivery.

The new mother, her mother, and their neighbors concurred that no one today knows how to manage a delivery; the knowledge of the nana has been lost altogether. As one woman said, "You need to deliver in hospital to have the nurse push out the afterbirth and cut the navel string." The consensus was that only doctors and nurse-midwives "know" about birth. Thus biomedicine retains a monopoly on authoritative knowledge, and the maternity hospital, even in the absence of doctors, nurse-midwives, and technology, is the place for delivery.

Recent efforts by the government of Jamaica to decentralize the overburdened maternity care system by encouraging women to deliver at neighborhood clinics and to return home within a few hours have met with hesitation and wariness among local women. Most urban women are convinced of the legitimacy of knowledge thought to be monopolized by doctors and nurse-midwives (Wedderburn and Moore 1990). However, although authoritative knowledge and associated decision making are held largely to be within the purview of only hospital staff, neighborhood women expressed a desire for a more collaborative role for themselves, in which they would participate more fully in decisions during labor, such as indicat-

ing to medical staff their own sense of the course of labor (such as readiness to push), and their needs for assistance.

## Discussion

In our examination of the concept of authoritative knowledge elaborated by Jordan we suggest that in a collaborative and low-technology birthing system such as that in Yaxuna, the midwife and other adult women share general knowledge about birth. The midwife demonstrates minimal technical expertise that distinguishes her from other women, such as her cord-cutting technique and the recent adoption of oxytocin injections. However, her authority resides primarily in her history as an observer and participant at many successful births, and in her family status. Given that birth technology is broadly shared among village adults, family status is especially relevant in defining the midwife's claim to influence decision making. In this regard the midwife is the repository of cultural authority, a greater among equals. The credibility of her family and their reputation in the community enhance her own position as a reliable midwife. Thus she is operating from a position that "compels trust or obedience" (Starr 1982:9).

Jordan states that equally legitimate, parallel knowledge systems may exist, where people move easily between them, although frequently, one kind of knowledge gains ascendance (1993[1978]:152). In this birthing system the technical expertise of the midwife, that of other adult women, and the laboring mother's knowledge of her body are all valued. However, it is the experienced mother whose sense of her body is credited, while the first-time mother is expected to follow the advice of more experienced women.

Women delivering in public hospitals in Texas and Jamaica demonstrate similarities in the hierarchical distribution of knowledge and in the devaluation of authoritative knowledge based on women's experience of their bodies. In both instances knowledge that "counts" was that of physicians, nurses, and nurse-midwives. The Spanish-speaking women interviewed in Texas did not dispute this prioritizing of biomedical expertise or the value of technological interventions. They were not critical of the dominant role played by their physician in decision making during labor—they did not complain about their failure to negotiate the use of technological procedures during labor, or display skepticism about the need for surgery. The concerns they expressed following their cesarean deliveries dealt with their marginalization and their lack of information regarding the decision to perform a cesarean.

The inability to speak English and the lack of translators prevented them from obtaining information necessary to understand the basis for having the cesarean. Following the surgery they were unable to communicate with hospital staff concerning their state of health, their reproductive future, and the baby's well-being. Their interpretation of labor, or their understanding of the implications of the cesarean, was unsolicited, and they were effectively denied any meaningful interaction with medical personnel. Silenced throughout their hospitalization, they submitted to a high-technology system in which they shared preexisting assumptions with physicians regarding the distribution of authoritative knowledge.

The Jamaican case involves a formerly high-technology birthing system that, because of economic decline exacerbated by International Monetary Fund and

World Bank–supported structural adjustment policies, is increasingly dysfunctional. Low-income women have experienced increasing cutbacks in social services such as health care, and public hospitals have faced austerity measures that have generated dramatic crises such as unattended births for individual women. The Kingston case suggests that given the hospital budgetary constraints, technological intervention occurs much less frequently than in the highly medicalized system in Texas, but knowledge derived from body experience is equally suppressed. In Jamaica, as in Texas, authoritative knowledge resides in positions of power. However in the Jamaican hospital, although nurse-midwives and doctors monopolize knowledge and decision making, they are unable to operationalize their technological expertise or to follow hospital procedures that were routinized prior to the current budget crisis. Nevertheless, authoritative knowledge remains embedded in certain statuses, even in the absence of technological intervention.

In urban Jamaica the elimination of a once flourishing tradition of lay midwifery and home delivery has generated the widespread belief that hospital births are obligatory. Nurse-midwives and doctors are believed to be the repositories of knowledge necessary to ensure safe births. While women recognize that many hospital births are unattended, they nonetheless defer to the superior competence of hospital personnel, the perceived power of technology—however unavailable—and the symbolic safety of the hospital itself. Nurse-midwives and doctors retain a monopoly on authoritative knowledge, even in the absence of supplies, equipment, and medicines—the “artifacts” of birth.

The cases presented above constitute a response to Jordan’s call for a rethinking of authoritative knowledge in high- and low-technology settings and a reassessment of the social factors shaping it. These cases validate Jordan’s argument by illustrating the demeaning of alternative forms of knowledge in biomedical systems in the United States and in Jamaica. In the Maya birthing system, in contrast, the authoritative knowledge generated by a woman’s accumulated experiences of birth is highly valued. While Jordan has specified that by *authoritative knowledge* she does not mean “the knowledge of people in authority positions” (1993[1978]:154), in this article we extend her argument to suggest that the constitution of authoritative knowledge also reflects the distribution of power within a social group.

The authoritative knowledge of the physicians and nurse-midwives in these examples derives from the social position of the practitioner and has its basis in the legitimacy of the profession and in its claim to generate and control authoritative knowledge. While it is important to document the production of authoritative knowledge in a given encounter, as Jordan has done, we see in the preceding cases that authoritative knowledge is not only recreated through discourse, but is embedded in the status of physicians and midwives, and in the cultural authority of medicine—or midwifery—prior to the specific medical event.

In conclusion, the important issue Jordan raises regarding the extent to which control of technology lays claim to authoritative knowledge is elaborated in the example of Maya midwifery, where we see that technological knowledge is not highly differentiated; in the example of the Texas case, where control of technology and authoritative knowledge are congruent; and most significantly in the Jamaican case, which serves as a reminder that the cultural authority of biomedicine may persist even without the technology that once defined it.

## NOTES

1. In our use of illustrative cases from several cultures we follow the methodologies of Jordan (1993[1978]) and Bloch (1992).

2. This research formed part of the multifaceted Yaxuna Archaeological Project, financed by the Selz foundation, the National Endowment for the Humanities, and the National Geographic Society.

3. In the summer of 1994 one midwife, Dona Lila, fell and broke her arm for the second time and could no longer assist deliveries. While the impact of this crisis is assumed to be major, the anthropologist has not yet had the opportunity to return for additional fieldwork.

4. Similarly, Browner shows that in a Chinantec community in Oaxaca, knowledge about birth is broadly distributed throughout the population. The status of local midwives appears to depend more on personal characteristics than on specialized skills.

5. In the larger Maya village where Jordan conducted research with a small hospital and resident biomedical personnel, the midwife appears to have had greater access to biomedical knowledge and techniques. She had also undergone a more sophisticated training session and had modified her practice accordingly (Jordan 1989, 1993[1978]:31).

6. We focus on Dona Lila's midwifery practice because villagers report that she is the midwife of preference, attending almost all births. Dona Flora is viewed as the midwife of second resort. Because of our interest in authoritative knowledge we examine the practice of the most respected and widely consulted midwife. We chose two cases attended by Dona Lila to illustrate how the experience of the mother influenced the midwife's role and the role of family members who socialized the laboring woman into the shared community knowledge of appropriate birthing behavior.

7. Women and men in the village report that women and newborns are vulnerable to winds; mothers especially are considered to be in a hot state at delivery. Drafts or sudden shifts in temperature can cause various postpartum complications for mother and infant (see Tedlock 1987). Further, all the mother's bones are considered "open" (cf. Jordan 1993[1978]:43–44). This leaves her particularly susceptible to air.

8. In Jordan's description of Maya midwifery she also observes that "the Yucatecan system relies on formal instruction only during the actual birth. Even so, this instruction is delivered collaboratively by all participants to the new mother and father, not by a single authoritative expert" (1993[1978]:59). Like Dona Lila in Yaxuna, the midwife Jordan describes is from a large family and is the daughter of a midwife, suggesting that family status may also be a factor in the achievement of a successful practice. The midwife Jordan discusses employs more objects and equipment than does Dona Lila (1993[1978]:31). Jordan notes that "the midwife's opinion carries considerable weight but even such 'professional' decisions as giving the woman an injection to speed up labor emerge through a process of joint weighing of the evidence of the course of labor" (1993[1978]:87).

9. The drug salesman, a trusted member of a neighboring community for many years, is valued as an accessible source of oxytocin. He has been able to provide the midwives with this product, in spite of the fact that the Social Security doctor is strongly opposed to its use. However, the doctor commented that while the training he conducted had not altered the midwives' performance, infants and mothers were not dying of birth complications. The midwives were competently attending uncomplicated deliveries.

10. See Faust (1993) for similar conclusions with respect to midwives in Campeche.

11. These interviews formed one component of a broader study organized by Sargent. Interviews in Spanish were conducted by Bascopé.

12. We are grateful to Rayna Rapp for this insight.

13. Browner describes similar beliefs regarding the danger of undischarged menstrual blood, which can lead to serious illness (1985:105); Hahn and Muecke note the concern of Mexican American women that improper disposal of the afterbirth could endanger the newborn (1987:153).

14. Since this research was conducted the hospital has expanded its interpreting services to better address communication problems (Hospital Chaplain, personal communication, 1993).

15. This research was financed by National Science Foundation grant BNS-8703627 and by the International Center for Research on Women through Cooperative Agreement #DAN-1010-A-00-70610-00 with the Offices of Nutrition and Health and the U.S. Agency for International Development. The research addressed parents' strategies for child health and prenatal care, hospital utilization among low-income women, and knowledge and use of medicinal plants for reproductive and child health.

16. While women attributed mistreatment by midwives to class status, government midwives blamed the hospital system for conditions uncondusive to the practice of midwifery. They complained about irregular salaries, serious staffing shortages, and lack of important supplies such as gloves and disinfectants. For a more detailed analysis on the impact of class relations on health policy and on the delivery of maternity services in Jamaica throughout its history, see Sargent and Rawlins 1992.

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