Consideration of the evolutionary and cross-cultural history of childbirth reveals many differences between the ways in which most human females have experienced childbirth and the ways in which most women in contemporary industrialized obstetric settings experience the event. In this paper I review two of these differences: the pain and anxiety of labor and delivery and the discontinuity of care provided for the mother and infant. I argue that much of the dissatisfaction with birth practices in the United States results from the failure of modern obstetric practice to meet the evolved needs of mothers and infants.

KEY WORDS: Childbirth; Evolution; Mother-infant interaction; Midwifery.

When we consider the way in which childbirth was likely experienced by our hominid ancestors and the way it occurs in most cultures of the world today, it becomes obvious that childbirth in a contemporary hospital in the United States is quite different from what most human females throughout history have experienced. To a great extent, there is a mismatch between the needs of pregnant women resulting from mil-
lions of years of evolutionary history and the contemporary medical system. In this paper I will review two areas in which the mismatch is particularly obvious: the anxiety and pain associated with labor and delivery, and the lack of continuity of care that is typical of the U.S. pattern of giving birth.

Cultural evolution proceeds as new practices are adopted, modified, rejected, or invented. Often an innovation is accepted unquestioningly when it is first introduced. Only later might it be found to be wanting and not to have the originally perceived benefits (or to have originally unrecognized costs). I argue that several aspects of contemporary obstetric practice, particularly the ways in which pain and fear are handled and the practice of treating mother and newborn as separable individuals at the moment of birth, have been found wanting now that we have begun to evaluate them. Perhaps we can better understand why these practices are problematic if we place this experiment in the context of human evolutionary and cross-cultural history.

LABOR AND DELIVERY IN THE EVOLUTIONARY PAST

The last common ancestor of chimpanzees and humans probably experienced birth similar to the way in which most monkeys do today. Contractions of labor probably began several hours before birth, alerting the female to the impending event but not interfering with her regular activities. The contractions probably became more intense as the time of delivery approached, and she then gave all of her attention to her perineal area. Because of the large ratio of head to body size in most primates, the passage through the pelvic canal was likely a challenge, just as it is in humans and most other primates today (Schultz 1949). Thus, the actual delivery of the infant was probably slow with some risk of death due to cephalopelvic disproportion. The baby emerged facing the mother and she licked it, consumed the placenta, and allowed the infant to nurse. Birth was most likely a solitary affair for this hypothesized ancestral species, just as it is for most nonhuman primates today.

With the origin of bipedalism in the human lineage, approximately five million years ago, the birth process changed in several fundamental ways. One major change is that the human infant emerges facing away from the mother. This is referred to in obstetric texts as the "occiput anterior position" (Oxorn and Foote 1975) and is regarded as normal for humans. Occiput posterior positions occur in about 5% of human deliveries and are regarded as abnormal. In all other primates, however, the occiput posterior position appears to be the most common (see, for