

Labors Lost? Memories of Childbirth

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I'm told, by women I trust, that childbirth is an experience unlike any other. These women have vivid and enduring memories of labor and birth, becoming a mother, giving life. They recall the event as profound and magical and life-changing—and also very painful.

Nobody questions the physical intensity of labor and childbirth, but how do we know how painful the experience really is? Does recall—especially months and years later—accurately reflect the experienced pain?

This is not just an academic question. Mothers' lasting feelings about the experience of childbirth—good or bad—are closely tied to remembered pain. So a team of psychological scientists decided to measure women's actual experiences of pain in a hospital delivery room. They wanted to examine, as precisely as possible, the relationship between the experience of labor pain in real time and its recollection later on.

Led by Eran Chajut of The Open University of Israel, the researchers tested a popular theory of how we recall experiences. Developed by Nobel Laureate Daniel Kahneman, the theory posits that people do not remember all parts of an experience equally. Instead, we tend to recall the moment of peak intensity and the final moments, which we average and use to form an overall memory of the experience. According to this theory, the duration of an experience is not all that important to memories—a phenomenon called “duration neglect.”

To test this theory in connection with childbirth, the scientists got permission to accompany more than 300 women during labor and delivery at Israel's Rabin Medical Center. A researcher asked each woman to indicate her degree of pain every 20 minutes, from the time she arrived at the hospital until birth, 6 ½ hours on average. Ratings ranged from 0, for no pain, to 100, the “worst pain imaginable.” The researcher also phoned each new mother two days later, then two months later, asking them for an overall evaluation of the labor and delivery, using the same pain scale.

The scientists analyzed the pain ratings—peak pain, end pain, and the average of the two. They also computed the overall average of all pain ratings that had been made at 20 minute intervals, excluding the peak and end ratings. The idea was to see if the peak-end rule applies to labor and childbirth—that is, to see if peak-end average pain is the best predictor of lasting memories of pain.

And it was, as the scientists report in a forthcoming article in the journal *Psychological Science*. The women's recollections of pain, at two days and two months after birth, were skewed by just two moments of the 6 ½ hour experience, the moment of peak intensity and the moment of birth. These two moments of pain were a better predictor of pain memories than was the average of all pain ratings. In contrast, the duration of each mother's experience played little role in shaping memories of the event.

The scientists compared first-time mothers with experienced mothers, with interesting results. The peak-end rule was not as good a predictor of long-term pain memories for mothers who had given birth previously. This suggests that experience and previous knowledge can dilute the effect of the peak-end bias over time, even with such a unique and rare experience as childbirth.

The scientists also compared mothers who gave birth without pain killers to those who opted for epidural drugs. All the mothers endured the same amount of labor, and reported similar levels of real-time pain. But the peak-end rule was still the best predictor of how they remembered pain later. And duration was still insignificant. This is interesting, suggesting that drugs designed as real-time pain killers may also have a lasting influence on memory. Because of the diminished pain at the end, those who took pain drugs recalled childbirth as much less intense, compared with the “natural memory of childbirth pain.”

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