# The Mother-Infant Interaction Picture Book: Origins of Attachment

## Origins of a Picture Book

by Nancy Eichhorn, with Beatrice Beebe

*Editor's Note: This article is a compilation of excerpts (both directly quoted and paraphrased, including scripts from the DVD) from The Mother-Infant Interaction Picture Book by Beatrice Beebe, Phyllis Cohen, and Frank Lachmann, copyright 2016, printed with permission of the publisher, W. W. Norton & Company, Inc., as well as from articles Beebe published in Psychoanalytic Psychology (2014) detailing her journey in infant research and psychoanalysis, and personal conversations with Beebe.*

Beatrice Beebe entered graduate school at Teachers College in 1968 to study mother-infant reciprocity and infant emotional development. Despite less than encouraging faculty support (she was told infants were undifferentiated and to study children whose emotional development was far more interesting), she pursued a joint doctorate in developmental and clinical psychology. This was no slight undertaking during a time when paradigm shifts were occurring and, with new research on the horizon, more were to come.

A host of influential teachers/researchers became powerful mentors and collaborators in Beebe's life over the past 40-plus years including George Rand, Herbert Birch, Daniel Stern, Joe Jaffe, Fred Pine, Sid Blatt, and Frank Lachmann. Over the ensuing years she published countless articles and five books. And now her publication, entitled, *The Mother-Infant Interaction Picture Book: Origins of Attachment,* co-authored with Phyllis Cohen and Frank Lachmann.

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"Infants and mothers are my teachers," she shares. "I learned a great deal from watching mother-infant interaction. But I learned something different by interacting with the infants myself: how to slow down, how to tolerate long periods of very little happening, how to do less. I learned how to match the rhythm and cadence of the infants' facial and head movements, breathing rhythms, or hand gestures. All of this I learned out of awareness. I became aware of it only gradually as I studied the videotapes of my own interactions with the infants" (Beebe 2014, p. 21).

This newest book is based on Beebe's research (with many collaborators and students over the years) of mother-infant interaction at infant age 4 months. The research involved the second-by-second microanalysis of mother-infant dyads videotaped playing face-to-face. Beebe's technique of video microanalysis captures moment-to-moment sequences of interactions, capturing subtle details too rapid and complex to grasp with the naked eye. The research shows that these details can be used to predict the infant's attachment style at one year.

Understanding these details creates an opportunity for early intervention. Beebe shares that the idea of the picture book came from her desire to demonstrate what these interactions look like, while protecting the mothers' and their babies' identities.

Dillon Yothers was able to draw pictures of the mothers and infants and capture movements and facial expressions all the while preserving their emotions. Further, he was able to disguise the participants' identities. In the lab, face-to-face interactions are filmed with two cameras, one on each partner, generating a split screen view. As a result, the picture book's drawings depict the mother's and infant's faces side-by-side. But, Beebe urges the reader to remember that each drawing actually captures a separate camera view.

### The Origins of Attachment

Beebe began investigating the origins of attachment in 1985 with a team of investigators (Jaffe, Feldstein, Crown, and Jasnow) (See Jaffe et al., 2001). A more recent study again successfully predicted attachment from 4-month mother-infant interactions (Beebe et al., 2010). Mother-infant face-to-face interactions were videotaped at infant age 4 months. When infants were one year, mothers and infants returned for an attachment assessment. This design enabled the team to identify patterns in the 4 month interactions that predicted the attachment strategy that would emerge at one year.

The Strange Situation (Ainsworth et al., 1978) was used to assess attachment. The Strange Situation measures attachment through a series of mother-infant separations and reunions. Specifically, attachment classifications are based on four interaction behaviors directed toward the mother during the reunion episodes: proximity and contact seeking, contact maintaining, avoidance of proximity and contact, and resistance to contact and comforting. Securely attached infants tend to use their mothers as a secure base for protection and nurturance; these infants recover easily from the separation and easily return to exploration and play. Insecurely attached infants show difficulty with the reunion process. Insecure-avoidant infants show little distress at separation and avoid the mother at reunion, continuing to play on their own. Insecure/resistant infants are very distressed at separation but cannot be comforted by the mother's return; they often struggle to return to play. Infants who show incomplete movements and expressions, simultaneous displays of contradictory approach/avoid patterns, confusion and apprehension, and momentary behavioral stilling, are classified as disorganized. (Beebe 2010).

Beebe is clear that while the attachment strategy at one year can be predicted from 4-month mother-infant interaction, the attachment is not set in stone. In other words, our life experiences (i.e. a traumatic event or a wonderful therapist) can transform attachment patterns from secure to insecure and vice-versa. However, attachment patterns at one year often persist and are predictive of various young adult outcomes. Therefore, intervention at 4 months that can alter the attachment outcome at 1 year has powerful potential.

**The Mother-Infant Interaction Picture Book**

The book presents drawings of 10 sequences of mother-infant interaction at 4 months; four of these sets of drawings illustrate interaction patterns that predicted secure attachment and 6 sets depict patterns that predicted one of the three types of insecure attachment.

As the book is a stationary medium, Beebe says that readers will need to learn to use their own eyes to create movement by shifting back and forth between two drawings. The book includes a DVD intended to help readers grasp the correct technique for viewing the drawings. Beebe narrates several sequences of mothers and infants interacting. She points out the subtler movements and offers interactional meaning. Viewers are guided to notice subtle behaviors (gestures, vocalizations, facial expressions) that are hard to pick up in real time in order to truly see how each partner influences the other. The DVD features one mother playing with her 3 ½-month old infant first in real time and then frame-by-frame. This segment demonstrates the power of the frame-by-frame analysis as it reveals fascinating nuances in behavior not perceptible in the real time video. This introduction prepares the reader to study these subtleties in the frame-by-frame drawings.

An important feature of the book is the description of each drawing. Beebe collaborated with Phyllis Cohen on these descriptions. Beebe notes that she and Phyllis Cohen could describe about four drawings in one hour. With 190 drawings, that's approximately 50 hours.

"Face-to-face communication is very fast, both in adults and mothers and infants," Beebe says. "When we watch people interacting in real time, we often do not see subtle aspects of the interaction. When we slow it down, and view it second by second, or by fractions of seconds, we see a new subterranean world of the details of interactions" (Beebe, 2016, personal communication).

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Referring to her study in 2010, Beebe (2014) notes:

*"The most interesting aspect of my study has been the prediction of disorganized attachment at 1 year from 4-month microanalyses. Disorganized attachment at 1 year predicts dissociation in young adulthood [in other studies]" (Beebe, 2014, p.16). "I wanted to better understand the details of these interactions that predicted disorganized attachment. With the help of Jennifer Lyne and Kari Gray, my research assistants (and both former filmmakers), and I used the research findings to identify the exact moments of interactions of dyads who illustrated particular findings in the origins of disorganized attachment. For example, we located moments of maternal gaze aversion, infant simultaneous discrepant smile and whimper, or maternal over stabilized, inscrutable faces. We created frame-by-frame analyses of the various patterns of disturbance. We identified the change points of each partner's behavior that best illustrated the clinical "drama" of that dyad . . . Based on the findings, I proposed that 4-month infants on the way to 12-month disorganized attachment come to experience and represent not being sensed, known, or recognized by their mothers; and difficulty knowing themselves, particularly in states of distress. They come to expect and represent experiences of confusion about their own basic emotional organization, about their mothers' emotional organization, and about their mothers' response to their distress. These experiences set a trajectory in development that may disturb the fundamental integration of the person? (Beebe, 2014, p. 17).*

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"Viewing the film frame-by-frame is like having a social microscope. You can see how each person affects the other, moment by moment. You can see who acted first-did the infant turn his head away first, and then the mother moved her head in close, looming in? Or did the mother loom in first, and then the infant turned his head away?" (Beebe, 2016, personal communication).

"Microanalysis allows us to characterize the nature of the 4-month infant's procedural representations, or emerging 'internal working models' of attachment: (Beebe, 2016, personal communication). "Metaphorically it measures expectancies of 'how I affect you', and 'how you affect me'" (Beebe, 2014, p.6).

"When I'm studying visual variables, I study two and a half minutes of uninterrupted face to face play as close to the beginning as possible. Two and a half minutes contains an enormous amount of information (150 seconds). Each second has information about the mother's facial emotion and the baby's facial emotion, the mother's touch and the baby's touch, the mother's looking, looking away, the baby's looking, look away, the mother's orientation upright forward loom, and the baby's orientation," she says. "There is a whole story here that we need to capture: mirroring, disruption, repair. Microanalysis reveals a more complex story" (Beebe, 2016, personal communication).

**"Microanalysis can be extremely useful in mother-infant treatment. It lets you see things at a level of detail that you really can't pick up in real time. Microanalysis breaks behavior down into these tiny little moments, by coding things second-by-second, we've figured out that we can detect aspects of communication you really can't detect any other way" (Beebe, 2016, personal communication).**

### Microanalysis

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"By watching videotapes with an experienced clinician, parents can learn to observe the infant's 'nonverbal language', and the effects of each partner on the other. Careful frame-by-frame analysis reveals aspects of the difficulty that can't be discerned by watching the videotape in real time. Frame-by-frame analysis itself is rarely part of the treatment process; however, it powerfully informs the treatment" (Beebe, 2016, personal communication).

"In the last two decades I have become increasingly aware of how my microanalysis of mother-infant communication has affected my work as a psychoanalyst with adult patients" (Beebe, 2014, p.20)

"When I entered graduate school in 1968, at Teachers College, Columbia University, the empirical microanalysis of mother-infant face-to-face communication did not yet exist as a field" (Beebe, 2014, p.5). At that time, the majority of research emphasized parental influence upon children, a one-way influence model, to the relative exclusion of the child's influence on the parent.

The research on early social capacities set the stage for the burgeoning interest in mother-infant face-to-face communication in the 1970s and 1980s. We sought to understand how these infant capacities were used in the face-to-face exchange by 3 to 4 months, when infants' social capacities flower" (Beebe, 2014, p.9). "With increasing recognition of infants' social competence, researchers became interested in bidirectional, or mutual model of influence within the dyad as a system." (Beebe, 2014, p.5).

As with any new paradigm, debates over the accuracy of the bidirectional mutual regulation model immediately ensued. "This was the intellectual Zeitgeist that I entered as I began graduate school in 1968 and became interested in infant research" (Beebe, 2014, p.5). Research using time-series analysis to analyze mother-infant interaction has since demonstrated that it is indeed bidirectional.

Research using time-series analysis to show mother-infant interaction has since demonstrated that it is indeed bidirectional. And video microanalysis taught Beebe to see how the intricate process of mother-infant moment-to-moment communication works.

"It is a powerful research, treatment, and training tool. I owe my love of video microanalysis to Dan Stern," she says (see side bar below) (Beebe, 2014, p. 4).

**Meeting Frank Lachmann**

When Beebe returned to Teachers College in 1972 for her final year, she learned that Frank Lachmann was her supervisor. This was one of the luckiest turns of her life, she says, adding that she and Frank have continued to meet once a week since that time, now over 40 years.

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*"Once I met Dan Stern, everything was different. There was no question that the study of mother-infant communication was hugely exciting and fascinating. I met Dan Stern at New York State Psychiatric Institute (NYSPI), Columbia University Medical School, in 1969, in my second year of graduate school. I was asking everyone for a lead to an infant researcher. I heard about him on Fire Island, where he often went for summer vacation. I remember the day I met Dan. I arrived at the open door of his office, while he was on the telephone. As he carried on his verbal conversation on the telephone, he also carried on another nonverbal conversation with me, through his face and eyes, which were welcoming and interested. Already we were into nonverbal communication.*

*I worked for Dan Stern as a volunteer research assistant at New York State Psychiatric from 1969 –1973. I later learned that Dan had been a postdoctoral fellow of Joe Jaffe at NYSPI, and they were working together at this time. I had no idea then that eventually I would spend four decades working closely with Joe Jaffe.*

*Dan, accompanied by several graduate students, was videotaping twins in their homes with one camera. Dan encouraged the students to play with the infants on camera as well. I played with infants, which set the stage for the study of "stranger-infant" interaction. At that time, we had no idea that stranger-infant interaction would turn out to be a powerful predictor of development.*

*Being the stranger playing with the infants, in those home visits with Dan Stern, shaped my interest in infant research. One of these visits was particularly memorable. I played with an infant whose face was full of joy. As I watched her face respond to mine, tears came to my eyes. I was so astonished and moved by how closely she tracked my face, how exquisitely she seemed to respond to me, how her face burst into what I later came to call the "gape smile," the hugely open-mouth smile, the apex of positive affect. That particular experience led me to do my dissertation with Stern"* (Beebe, 2014, p.5).

*Eichhorn, with Beebe continued from pg. 25*

One idea they worked with was that early social experience was organized in an interactive framework. Over the years, they have illustrated patterns of matching between mothers and infants (age 4 months) as well as derailed exchanges in mutual regulation. Matching patterns include affective direction and temporal patterns of vocal and kinesic (movement) exchanges, while derailed patterns are illustrated by "chase and dodge" interactions. In stark contrast to the prevailing view of separate, static self- and object representations, Beebe and Lachmann suggest that pre-symbolic self and object representations are based on a dynamic process of reciprocal, bidirectional adjustments (Beebe, Lachmann, and Jaffe 1997).

"Frank and I argued that a two-person field organizes infant experience from the beginning. Our view is very different from some current prevailing views that the mother's response to the infant organizes the infant's experience. Instead, both infant and mother co-create the nature of the infant's experience, although the mother has the greater range, flexibility, and capacity. Moreover, we have always been careful to conceptualize the individual's own contribution to the dyadic co-creation. We think of dyadic bidirectional regulation as existing in dynamic relation to the self-regulation of each partner of the dyad" (Beebe, 2014, p.10).

"Largely because of my relationship with Frank, I have continued to try to integrate my infant research work with my love of psychoanalysis. Frank became my anchor in psychoanalysis as I struggled with the challenge of integrating these two fields" (Beebe, 2014, p. 11).

"Later in my life I came to realize that I needed both the fields of infant research and of psychoanalysis in an effort to integrate my parents' very different intellectual interests and personalities. My father was a researcher, a radiation epidemiologist, who designed the follow-up studies of Hiroshima, Nagasaki, and Chernobyl. My mother was a school psychologist, and she went to Teachers College, in the same program I attended some four decades later. She was the psychologist for Beauvoir, the preschool associated with the National Cathedral Schools in Washington, DC. Later for several decades she was a school psychologist in Rockville, Maryland, responsible for 30 schools" (Beebe, 2014), p. 11).

## Final Reflections

Like all dedicated clinicians and researchers, Beebe's work continues to expand. She recently worked with Rebecca Houghton, a dance movement therapist student, who analyzed the first 80 seconds of her session with an autistic adolescent client for her master's thesis. Houghton and Beebe wrote a conceptual paper that used drawings to depict how Houghton, as a new dance movement therapist, at times disrupted the interactional process, and how the client often initiated repairs (Houghton and Beebe, 2016, in press). There's also a long-term research project in the works as well as teaching and of course, more writing.

"I'm hoping that people will read the book and watch the DVD we've included to help them both understand the book and help them imagine movement as they view the drawings. And I hope the book helps people understand their communication with their babies, and how their babies communicate with them" (Beebe, 2016, personal communication).

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