

# What we Learn About Babies from Engaging With Their Emotions



National Center for Infants,  
Toddlers, and Families

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In this article, we explore what we can learn from engaging with babies. Engagement is the way in which we gain psychological knowledge about others, including babies. Even psychologists use the engagement approach to gather key information about a person. If we want to know what a baby, an adult, or any animal feels or thinks, we must engage with them, allowing ourselves to feel the sympathetic response that the other's actions and feelings invite. This approach differs from the position of doubt and detachment concerning knowledge of other people's feelings and thoughts adopted by 20th century psychology. But for a scientist studying the behavior of any system, engaging and participating with it provides insight into the meaning of natural events and processes—insight that more detached observation cannot give. Engagement is especially essential in understanding social phenomena.

## Why Is Engagement Especially Informative?

In 1993, the late Elizabeth Bates, a pioneering researcher on early communication and language learning, was an invited speaker at a conference of the British Psychological Society in Birmingham, England. She was sitting in the audience when another invited speaker, Giannis Kugiumutzakis (1998) of the University of Crete, presented his findings on the imitation of vocal sounds and facial gestures by babies less than 1 hour old. Neonatal imitation has been one of the most controversial of all 20th century findings on infant development because it violates the Piagetian model, which assumes that all social skills, including imitation, are complex intellectual achievements involving much trial and error in an infant's early months. In a question to Professor Kugiumutzakis, Bates admitted that she had been one of the skeptics, not believing in the possibility of neonatal imitation—until she successfully got a newborn child to imitate her. Now that she believed in the existence

## ZERO TO THREE Corner

To know what a baby feels or thinks, we must engage with her, allowing ourselves to feel the sympathetic response that the other's actions and feelings invite. This article (Zero to Three, Volume 24, Number 3) explores how engagement allows a richer, more useful interpretation of infant behavior than does detached observation. Engaging with babies is crucial not only for obtaining a fuller empirical picture of infant development, but also for the infant's development itself. Copyright ZERO TO THREE. All rights reserved. For permission to reprint, go to [www.zerotothree.org/reprints](http://www.zerotothree.org/reprints).

of neonatal imitation, her only concern was about what neonatal imitation meant.

Refusing to believe something until we have experienced it ourselves is familiar to all of us. We may not have believed, for instance, that bringing up a child can be quite so exhausting, or that losing a parent can be disorienting even to adults, or that kidney stones can be as painful as others say they are—until we feel them ourselves. But watching a baby do things is not quite the same as these experiences of exhaustion or despair or pain. The baby's actions are observable to anyone—to the parent, the pediatrician, the scientist. Why should we need to engage with the infant's behavior ourselves to be convinced of what we are seeing?

There are several simple reasons for accepting that in order to “see” psychological phenomena, or understand the processes that move psychological “subjects,” we do in fact need to engage with babies feeling that, similar to ourselves, they are psychological beings.

1. The findings from Gestalt psychology a century ago clarify that organisms perceive in meaningful wholes rather than in parts; that which is perceived varies between species in adaptive ways. Only an organism with feelings and thoughts can perceive feelings and thoughts in another.
2. When we perceive things, we also respond to them. Our response legitimizes that which we perceive and enables us to perceive it in one way rather than another—that is, to perceive it through the medium of our response. If we observe a young infant smile, we observe something very different than if a dog or a Martian

were doing the observing, and we respond in a different way.

3. When someone is saying or doing something directly to us, we have access to information that might be unavailable to someone else observing from the sidelines. This often becomes a serious source of confusion when psychologists present data on communication from experiments, which are inevitably selective. When we greet a baby and receive a smile in return, our experience of that smile is different from that of someone else doing the observing; the warmth and the compliment that the infant gives you in that smile must affect whether and how you see that expression, as must any historical knowledge you have of the baby's previous interactions.

As Professor Bates may have discovered, in trying to get a newborn grandchild to imitate our protruding tongue, we are enormously sensitive to detail in terms of the baby's gaze, mood, and previous actions, which statistical analyses can only attempt with difficulty. It is not surprising that Bates was more convinced by her own single experience than by years of data reporting statistical frequencies of responses to “stimuli.”

## Emotions: The Key to Engagement

We suggest that emotions are the key to psychological engagement. Emotions do not exist to be locked away inside an individual. First, emotions are an important agent in an infant's active, moving, and assertive relationship with the

## Why We Prefer SYmpathy to Empathy for Understanding Engagement

Empathy is often used to mean comprehending how others feel, and, by extension, kindness, helpfulness, or concern for others. But, the word is derived from the Greek word *empathia*, meaning “projecting feeling into something.” In modern Greek, this word signifies the “evil eye.” Sympathy, in contrast, is derived from the Greek *sympathia*, meaning “feeling with, compassion, liking.” It is clearly more intersubjective and two-way than empathy, which is more self-centered.

Adam Smith, the 18th century philosopher of the Scottish Enlightenment, in his “Theory of Moral Sentiments” (1759/1976) designated sympathy as any kind of “moving and feeling with,” whether motivated positively or negatively, and including posturing and acting in the same expressive way as another’s body. He said “How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it except the pleasure of seeing it.” (Part I, Of the Propriety of Action; Section I, Of the Sense of Propriety; Chapter I, Of Sympathy, p. 9). “Pity and compassion are words appropriated to signify our fellow-feeling with the sorrow of others. Sympathy, though its meaning was, perhaps, originally the same, may now, however, without much impropriety, be made use of to denote our fellow-feeling with any passion whatever.” (p. 10).

Of the words available to us, sympathy clearly conveys best the core sense of intersubjective awareness of agency and emotion that works reciprocally between persons.

Theologian and philosopher Martin Buber (1958) has urged us to acknowledge the fundamental difference between the sympathetic “I–thou” engagement between persons, and one person’s relationship to an inanimate “it.”

world (Freeman, 2000; Panksepp, 2003). Second, and most important, emotions are intensely shared, because the nature and function of emotions are to stir sympathetic responses in others (Schorer, 1994; Stern, 2000). We do not know how this response happens, but we cannot deny this sympathy. Among those who deal with infants, emotional engagements with those infants provide the most informative as well as the most helpful route to understanding them. The two anecdotes below, taken from the records following the birth of the eldest child of one of the authors (VR), illustrate the power that emotional engagements have on all involved, and the kinds of awareness levels that they demand.

### Shamini and the Still Face

Shamini was about 6 weeks old when her father and I tried the Still Face Experiment, which we had heard so much about (but which I had neither quite believed nor really understood; Murray & Trevarthen, 1985; Tronick, Als, Adamson, Wise, & Brazleton, 1978). In the middle of a good smiley “chat,” when she was lying on the bed and I was leaning over her, I stopped, with my face pleasant but immobile, and continued looking at her. She tried to smile

a bit, then looked away, then looked back at me and tried to chat, then looked away again. After maybe 30 seconds, I couldn’t stand it any longer and, smiling, I leaned forward and hugged her, saying, “Oh, you poor thing!” At this, she suddenly started crying. Her reaction was a turning point for me. I was shocked. And very moved. I didn’t know she cared. Neither reading about the research, nor even subsequently watching Lynne Murray’s videos of still face experiments, told me quite as much as this experience.

### Shamini’s Rage

Shamini (5 weeks old) was angry with me today. I was delaying feeding her because it was only 2 hours since her last feeding and she had been awake during that whole 2 hours. As a result, she had become hungry quickly and had wanted another feeding for some time. At first, Shamini remained quiet, then became restless, and then, after some fussing, she frowned. Then she yelled—a furious-sounding shout,

louder in volume than any other vocalization I had heard, and clearly filled with rage. Then she made no other sound, although the look on her face remained angry. I was extremely taken aback, and felt almost guilty.

Our history of engagements and my emotional responses of shock and guilt clearly helped me understand the meaning behind Shamini’s acts. Without such meaning, laborious mechanical analyses could strive but still fail to determine the significance of the baby’s reactions. When interacting with an infant, anyone—including a researcher—must be emotionally involved in sympathy with an infant to fully understand why an emotion has emerged, and what purpose or effect it may have in the child’s experience of life. We can learn a lot from intimate and “respectful” engagement with babies’ actions and feelings. This way of observing alters not only the empirical picture of what a particular infant at a particular time is capable of doing and feeling. It also alters the whole theoretical story about how infants develop, and what they are motivated to experience and to be changed by. Observation in the context of emotional engagement completes the partial picture that one obtains by distant, objective observation and by assuming that mental events cannot be observed directly.

## Openness to Emotional Engagement in Studies of Infants: Interpretation and Misinterpretation

We take three examples of infant behavior—protoconversation, coyness and shyness, and teasing—to make two points: First, that researchers never would have studied these phenomena had it not been for psychologists’ openness to engaging with their infants’ emotions; and second, that engagement allows a richer (and, we would argue, more useful) interpretation of infant behavior than does detached observation.

### Proto-Conversation

In 1971, the linguist and anthropologist Mary Catherine Bateson first highlighted the phenomenon of “protoconversation” with 2-month-olds when she reported on the filmed observations of a mother with a 9-week-old (Bateson, 1971). The

## Cognitions and Emotion in Life Experience

Jaak Panksepp (2003), a leading expert on emotional systems in the brain and affective neuroscience, says this about the scientific problem of relating rational processes to feelings:

At times I do fear that cognitive-imperialism, the prevailing view in mind sciences, will continue to suffocate the need for focused research on affective issues, and thereby, continue to delay a scientific analysis of such matters of foremost concern for understanding the existential inner qualities of human lives. (p. 5).

That, I believe, is a hangover of Cartesian dualism along with the prevailing assumption that subjective brain-mind issues, since they cannot be directly measured, should not be deemed a topic of disciplined scientific discourse or inquiry. (p. 6).

observations were filmed in the linguistics laboratory at Massachusetts Institute of Technology.

The phenomenon of “talking” with a baby who is only a few weeks’ old is a familiar one to most parents: Babies look at us and start smiling, then “chat” in extended bouts of sharing a mutual gaze, turn-taking, cooing, moving lips and tongue, waving arms, turning wrists, and extending fingers (Stern, 2000; Trevarthen, 2001, in press; Trevarthen & Aitken, 2001). They seem to experience our conversational acts as communication and feel the need to respond expressively. If you allow yourself to be similarly engaged with a 2-month-old infant—especially an infant whom you know well and who knows you—it is impossible to resist becoming involved and talkative. It is impossible, then, to doubt the baby’s communicative intent, or to argue that the baby’s acts merely appear to be responses to yours. We cannot assume that the babies’ actions are merely some kind of biologically preprogrammed reflex behavior lacking appropriate feelings. Similarly, we also cannot assume that the baby is merely appreciating and testing the “mechanical” contingency of your behavior in time, with no appreciation for its affective or companionable content.

Such assumptions are possible only if we flatly refuse to engage in the chat and insist that the only accurate data source comes from detachment and an unemotional analysis that involves counting the number of responses to a controlled regime of stimuli. Emotional acts need emotional perception. We cannot easily perceive emotionally without similar emotional engagement. In the 1970s, the field of experimental developmental psychology—much more male dominated

at that time—refused to accept the claim that infants not yet 3 months old can have “conversations” in which they take turns, show signs of pre-speech, and respond to and invite others’ expressions of emotion. Psychologists qualified these infant–mother conversations with the prefix “pseudo” (false) instead of “proto” (earliest). Since the 1970s, psychologists have questioned the belief that infants—who are essentially unsophisticated organisms—can comprehend and learn psychological states and acts. However, Stephen Malloch (1999; Trevarthen and Malloch, 2002) has recently offered refined descriptions of the motives and emotions of proto-conversations. He adapted precise computer-assisted musical acoustic methods to reveal the “musicality” of the vocal patterns that mother and child generate, in mutual sensitivity, in an undisturbed and enjoyable chat.

### Coyness and Shyness in 2-Month-Olds

Self-conscious, affective reactions in 2 month-olds—that is, expressions of coyness or shyness—are another phenomenon that researchers have recently identified (the existence and interpretation of which is bound to be challenged). It is not uncommon to hear parents remarking, even about 2- and 3-month-old babies, that they are being shy or coy (Reddy, 2000). The behavior itself involves a particular pattern: The infant smiles, and as she smiles, starts turning her head and/or gaze away from the other person; sometimes she curls her arms up in front of her chest and lowers her face. When you see this behavior in so young an infant, you might interpret it in a variety of ways. You could remark on the behavior and see it as a kind of “fixed action pattern” that may have been triggered by a specific

stimulus (e.g., a too-close approach by a stranger). Or you could, as some parents do, interpret it as an emotional response. How do we decide which interpretation is better?

Observational data on the occurrence of the behavior helps. In one longitudinal study of 5 infants (Reddy, 2000), we found that all 5 exhibited coy behavior, although frequency of occurrence differed from infant to infant. The infants demonstrated this coy behavior not only with strangers, but also with parents and even with their own reflections in a mirror. The likelihood of the behavior occurring with strangers was greater at around 4 months of age, when parents reported that through such behavior, their infants seemed to be inviting interaction and play. It can also be seen, with other complex displays of “sociability”, between infants when no adults are present (Selby & Bradley, 2003).

We found that the behavior was more likely to be seen early, in the first seconds after renewing an interaction, rather than later. The baby’s actions are strikingly similar to the behavior of older children and adults whom we describe as shy. The infant’s smiling gaze, the turning of the head (often with quick return of head and gaze), and the arm-raising are frequently observed accompaniments to the embarrassed (albeit more controlled) smiles that older children exhibit. The pattern resembles the stereotyped rituals of coquetry that many cultures encourage females to use—the fan in front of the face, the kimono sleeve in front of the mouth (revealing smiling eyes), the face tipped down to show a sidelong glance, and so forth. The context in which the babies displayed this behavior mirrored that of toddlers and adults—in which an unexpected onset of attention spurs toddlers and adults to blush and show embarrassment, as Charles Darwin (1873) and Leary, Britt, and Cutlip (1992) observed. (Of course, other more sophisticated contexts elicit embarrassment in older children and adults.)

We chose to interpret early coy smiles as a kind of affective self-consciousness, even in the young infant. When an infant looked at us, and we said hello, and she turned away with an intense smile then curved her arms and turned back to look at us, it felt as if she was being coy. We trusted our reactions. Because we experienced these babies’ smiles as affective self-consciousness, we went on to conduct analyses comparing their smiles, structurally and functionally, to embarrassed smiles in older children and adults. (If it weren’t for developmental psychologists’ own emotional reactions to



infant behavior within engagement, most of the interesting things we know today about infants would not have even been recorded.)

## Infant Teasing

Infant teasing is a third type of behavior revealed through engagement (Reddy, 2003). In 1986, I (VR) videotaped an interaction when Shamini was 9 months old. She is offering her father a bikkipege—a small babyteething toy—while he is trying to get her to talk for the camera. After he has accepted the toy several times, each time saying “Ta” (meaning, “Thank you!”) dramatically and giving it back, she offers it again with a half smile. He trustingly reaches out to accept it and she pulls it back, her smile broadening. He feels tricked, comments on his feeling, and reaches forward, laughing, “You! Give it to me!” A few seconds later, Shamini again offers the toy with a smaller movement of the hand, again with a half smile and with her eyes on her father’s face. Just as he reaches, she withdraws the toy and turns as if to run away. The family, sitting around the table, laughs; Shamini’s grandmother comments that lately, Shamini has been doing this teasing routine quite frequently.

This is not an uncommon behavior or exchange within a family. But what do we make of it? Shamini’s father felt as if he had been tricked. I, across the room and behind the camera, chuckled when I saw Shamini make her offer with the watchful half smile, even before she withdrew the toy. The whole family laughed, especially after Shamini repeated the offer and withdrew the object for the second time. The interpretation we offered was that Shamini recognized the shared understanding—that holding out an object meant that the object would then be released into the reaching hand (Shamini had only recently started doing this and was evidently enjoying the whole routine). We also noted that Shamini was playfully and intentionally violating that shared understanding in order to elicit an emotional reaction from her father.

This interpretation made some assumptions that ran counter to developmental theory at the time (although many developments in babies around 9 months old are now interpreted as constituting a kind of “revolution” in social understanding, especially of other persons’ intentions; Trevarthen, 2001; Trevarthen & Hubley, 1978). The most central assumption we made was that Shamini must know something about

her father’s expectation that she would release the object; otherwise she would not expect an emotional reaction to the nonperformance of that act. This assumption was not compatible with the theoretical position that children do not even recognize the existence of other people’s expectations until about 4 years of age. Mainstream theorists offered a simpler explanation as an alternative to ours: The infant may have previously received positive feedback (such as laughter and excited chasing) to an unintended offer and withdrawal of an object, and had subsequently learned that this act was a good way to elicit that sort of reaction—a plausible enough story.

The crucial point is, however, identifying the assumptions that each story makes about the infant’s understanding, at 9 months of age, about other people’s emotional attitudes. It is about the emotions that an infant can sympathetically feel. Our story assumed that Shamini knew her father’s emotionally charged intention (or expectation) to receive the object from her—and that the subject of her playful teasing was her father’s perceived psychological state and the pleasure associated with it. The alternative explanation assumes that this 9-month-old could not have known her father’s intentions or expectations and feelings. This explanation suggests that by simply remembering previous responses that had occurred “accidentally,” Shamini was trying to elicit similar behavior. From the psychologist’s perspective, the difference between these alternatives is academic in the weakest sense of the term; they don’t matter except as arguments that pay people’s salaries. For anyone dealing with infants, however, the choice of explanation matters a great deal. If we assume that the infant does not know our expectations or intentions, we act accordingly. We do not encourage the baby to cooperate with or play with our intentions and expectations. We do not engage with infants’ actions that may be attempts to engage our expectations and intentions. For a playful parent who enjoys shared emotions, this approach does not seem to be the correct choice.

## Engagement Creates, Reveals, Learns, and Teaches Meaning

Engaging with babies is crucial not only for obtaining a fuller empirical picture of infant development, but also for the infant’s development itself—for well-

being, learning, and teaching (Bruner, 1996; Hobson, 2002; Rogoff, Paradise, Arauz, Correa-Chavez, & Angelillo, 2003; Trevarthen, 2001, in press). Our responses within engagement enable us to notice and interpret infants’ specific behaviors and to recognize and legitimize these behaviors. When we engage and respond to someone, we are entering a shared reality in which each person can share in the other’s behavior. Consider this example:

A 12-month-old infant is sitting on his mother’s lap, looking out of the window, and he sees a flock of birds fly up in a rush. He points to them excitedly, vocally exclaiming and with both arms extended, but not turning around to look at his mother. His mother looks too, and says, in a lively, confirming way, “Oh yes! Isn’t that exciting!” The infant leans back into his mother’s body and continues to watch the birds.

Her reaction—from the tone in her voice and the movement of her body—affirms her son’s excitement and legitimizes his act of communication about the birds. Her response celebrates their companionship as they gain knowledge about the world and experience the emotions that such learning can stir (Dissanayake, 2000; Hobson, 2002). The simple example of a mother and her son discovering a flock of birds suggests that if an infant does not receive an emotional reaction to his emotions, he might stop expressing them or he might not experience them in quite the same way.

Looking at the incidents we have described from the infant’s point of view, we might ask what various adult behaviors mean to the infant. What does someone else’s gaze mean? What does someone’s smiling mouth mean? What does a frown mean? The most powerful meaning of a smile, gaze, or frown emerges in the infant’s engagement with the human events surrounding these facial responses. If we didn’t engage with infants, they wouldn’t learn very much about us, and we wouldn’t learn very much about them. We uncover their knowledge and they uncover ours. This method is how infants, and adults too, “learn how to create meaning” from each other (Hobson, 2002; Trevarthen & Hubley, 1978).

We can look at learning from two perspectives. The first, denying the agency of one of the partners (the learner) and observing, as it were, from beyond engagement, focuses on imparting experience through instruction and then assessing the student’s gains. The second, observing and responding

within engagement, acknowledges the emotionally involved agency of both partners— teacher and learner—who can easily swap roles. This second perspective is necessary, we argue, for anything other than a sterile and mechanistic understanding of human mental and emotional development and, indeed, for promoting development itself (Reddy, 2003). We must share and respond to the powerful emotions of our infant companions.

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## Sympathy in the Brain

Functional imaging of activity in normal adult brains responding naturally to real emotive events, and/or expressing communication with emotion, is bringing exciting evidence for extensive systems that reflect states of mind between people. Decety and Chaminade (2003) say, of their findings:

Motor expression of emotion, regardless of the narrative content of the stories, resulted in a specific regional cerebral blood flow (rCBF) increase in the left inferior frontal gyrus . . . these results are consistent with a model of feeling sympathy that relies on both the shared representation and the affective networks. (p. 127).

Most remarkable of all, the same “mirror” systems for matching expressive states between people are already active in the brain of a 2-month-old baby who is looking at a person’s face, responding sympathetically to it, and [suggesting that he is] ready to communicate feelings (Tzourio-Mazoyer, DeSchonen, Crivello, Reutter, Aujard, & Mazoyer, 2002).

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