

## The Verdict Is In

### *The case for attachment theory*

*By Alan Sroufe and Daniel Siegel*

While many schools of psychotherapy have held that our early experiences with our caretakers have a powerful impact on our adult functioning, there have been plenty of hard-nosed academics and researchers who've remained unconvinced. Back in 1968, psychologist Walter Mischel created quite a stir when he challenged the concept that we even have a core personality that organizes our behavior, contending instead that situational factors are much better predictors of what we think and do. Some developmental psychologists, like Judith Rich Harris, author of *The Nurture Assumption*, have gone so far as to argue that the only important thing parents give their children is their genes, not their care. Others, like Jerome Kagan, have emphasized the ongoing influence of inborn temperament in shaping human experience, asserting that the effect of early experience, if any, is far more fleeting than is commonly assumed. In one memorable metaphor, Kagan likened the unfolding of life to a tape recorder with the record button always turned on and new experiences overwriting and erasing previous experiences. At the same time, the last 50 years have seen the accumulation of studies supporting an alternative view: the idea that the emotional quality of our earliest attachment experience is perhaps the single *most important* influence on human development. The central figure in the birth of this school of research has been British psychiatrist and psychoanalyst John Bowlby, who challenged the Freudian view of development, claiming that it had focused too narrowly on the inner world of the child without taking into account the actual relational environment that shapes the earliest stages of human consciousness.

Bowlby's thinking was influenced by his study of how other mammals rear their young, and the distinctive core of his contribution to developmental psychology may be traced to a very simple observation: whereas young ground-dwelling animals run to a place of protection when frightened, primates like chimpanzees and gorillas run to a protective adult, who then carries them to safety. As he focused on the developmental significance of this survival pattern, Bowlby concluded that humans—the most dependent of mammal infants—are wired like their primate cousins to form attachments, because they couldn't survive without them.

But Bowlby went further. While agreeing with his psychoanalytic colleagues that early experiences with our caretakers are crucial to the people we become, he made an important distinction. Infants are attached to their caregivers not because caregivers feed them, but

because caregivers trigger the unfolding of infants' inborn disposition to seek closeness with a protective other. By divorcing human attachment from the drive-reduction notions of Freudian theory, Bowlby laid the foundation for a shift from seeing people as individuals somehow standing apart from their social environment to a more fine-tuned grasp of just how deeply relational human nature is.

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### **The Challenge of Measuring Relationships**

Bowlby's theory can be boiled down to two propositions: the history of children's interactions with early caretakers shapes the quality of their attachment relationships (whether they become secure); and, these attachment relationships then become the foundation for later personality development. But for theory and speculation to truly become science, there must be a means of measurement, something that Freud and his successors had largely ignored. The practical challenge for researchers testing Bowlby's propositions about development was to find a method for capturing something seemingly elusive. After all, how can you possibly measure a *relationship* to determine whether it's affecting a child's development?

While it's relatively easy to measure how often an infant seeks contact, or whether it cries when someone approaches, none of these factors really capture the quality of the connection the young child experiences. If secure attachment isn't an inborn trait but a quality of the relationship that's being examined, how is this to be defined and measured? The answer to that question has been the key to the growth of the attachment-research literature, and the credit for devising a way to measure attachment goes largely to Mary Ainsworth. A colleague of Bowlby's at the Tavistock Institute, Ainsworth went on to conduct a series of field observations, first in Uganda and then in Baltimore, which ultimately led to the Strange Situation laboratory procedure.

While in Uganda, Ainsworth first developed the hypothesis that "attunement," the sensitive responsiveness to the infant's cues, was the critical factor in determining the type and quality of an infant's attachment, not simply a generalized trait like "warmth." Vigorously playing with an already overly aroused infant wouldn't be attuned parental behavior, while engaging in the same behavior with an infant who needs such stimulation would have a very different relational meaning. Attunement, or sensitivity, requires that the caregiver perceive, make sense of, and respond in a timely and effective manner to the actual moment-to-moment signals sent by the child.

Later, while at Johns Hopkins University in Baltimore, Ainsworth tested her ideas about attachment patterns by putting in 47 hours of painstaking observation with each mother–child pair in her study. She found that when caregivers promptly and effectively responded to young infants' cries, the babies cried *less* by the end of the first year. The securely attached children had learned that their caregivers were reliable and therefore subtler expressions of their distress and needs would generate responses—they didn't need to be crybabies to get the attention they sought. Infants who develop confidence in their caregivers are securely attached because their caregivers have proven to be reliable.

To create a more practical lab method that wouldn't require so many hours of extended observation, Ainsworth developed the Strange Situation procedure as a way of going beyond measures of simple infant behaviors to capture qualities of the mother-child relationship. In this procedure, the infant and mother enter a toy-filled laboratory setting and are joined by a stranger a few minutes later. The infant then is left with the stranger for three minutes, until the mother returns. Next the infant is left alone briefly, until the mother returns again.

This "strange situation" evokes separation anxiety in the child, which is thought to activate the inborn attachment system. The baby's response to reunion is the factor that determines the "classification" of the attachment relationship. Since a child can have a different attachment category of response with different caregivers, whatever experience the child has had with that particular caregiver will be reflected in how the child responds during their reunion. In this manner, the strange situation is an assessment of a relationship, not a feature or inherent trait of the child.

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Ainsworth distinguished between secure and anxious attachment. Some secure infants strongly seek physical contact, are reassured by it and return to play, while others warmly greet their attachment figure (smile broadly, show toys, vocalize). But what they all have in common is that they are active in initiating renewed engagement with the caregiver. By contrast, those with "anxious attachment" either actively avoid their caregivers upon reunion or fail to be comforted by them.

Some critics have questioned whether the Strange Situation measures attachment patterns or simply reflects differences in infant temperament. Couldn't it be that some children are simply more difficult to comfort than others? But when one examines how Ainsworth's assessments

were conducted, it becomes obvious why, as found in dozens of studies, temperament doesn't predict attachment security or insecurity. According to her methodology, *the amount an infant cries during separation* (its proneness to distress) isn't relevant to determining whether the attachment is secure or insecure. What determines an infant's level of attachment security is its *behavior when the caregiver returns*. While some babies are "thoroughly distressed" by separation, their relationship with the caretaker will be classified as secure if, despite their distress, they effectively seek contact upon reunion and are comforted by it, later returning to play. Among those who cry at separation, it's only those who fail to be comforted on reunion (either being passive or angrily resisting attempts at comfort) who are classified as having insecure or anxious/resistant attachment. Conversely, it isn't the case that infants who don't cry at separation are all in relationships classified as insecure. Babies who show no separation distress, but actively greet and initiate interaction with the caregiver upon reunion are classified as having secure relationships. Only nondistressed infants who ignore or otherwise actively avoid parents upon reunion (demonstrating avoidant attachment) are considered insecurely attached.

Developmental changes in the child further corroborate that these are relationship assessments and not measures of infant traits. Many 12-month-olds cry during lab separations, and those who are securely attached seek and are comforted by contact upon reunion. At 18 months, few toddlers cry at separation, though play generally becomes subdued. On reunion, those 18-month-olds who are secure typically *don't* seek physical contact (they don't need it now), but they actively engage the parent. Thus the attachment relationship can be classified the same as at an earlier age, even though all of the behaviors may change as the child grows. In fact, the amount of crying, smiling, and seeking proximity demonstrated by different infants at 12 months is unrelated to the amount of those *same* behaviors they show at 18 months. It's only the organization of the behavior that remains constant. Thus, the overall dynamics of the mother-child relationship have greater predictive value than do the more easily measured, individual behaviors.

What Ainsworth observed about children with avoidant attachment patterns has especially important meaning for clinicians. She found that avoidant infants had experienced routine rebuffs, specifically when they needed tender care from the caregiver. In general, their mothers held them as much as other mothers held their babies, just not when they really needed it. Therefore, they cried *more* in the routine home observations and explored less than did the securely attached babies. Later, they were strikingly *more* dependent on their schoolteachers. Bowlby specifically predicted that infants whose normal needs for sensitive responsiveness and emotional closeness weren't met, "including those pushed toward early independence," would later be more dependent. Simple temperament explanations can't account for these findings.

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### Early Attachment as a Predictor of Development

Showing that infant attachment relationships could be reliably assessed and that they were derived from the history of care was one important step. But it was only the first step. Bowlby's theory suggested that not only would these relationships provide the foundation for personality development, but they'd do so by affecting the child's capacity for emotional regulation and the formation of mental representations of self and others. For example, a child who's been rejected is likely to interpret the behavior of others as rejecting and behave in ways that lead to further rejection, continuing the pattern. However, the theory also states that such behaviors are subject to change, especially given fundamental changes in relationship support. If others are supportive, despite off-putting behavior, a child's worldview and behavior may change. Further, early experience isn't erased, but retains its potential to impact later developmental stages.

The Minnesota Longitudinal Study of Risk and Adaptation (MLSRA), a research project begun in 1976, has been the source of a vast literature about the predictive power of early attachment relationships, while distinguishing the impact of these relationships from the effects of social class and temperament. What MLSRA has shown over the past 35 years in study after study is that attachment security with a primary caregiver measured in infancy predicted important aspects of adjustment and functioning throughout childhood and into adulthood. Those with secure histories had a greater sense of self-agency, were better emotionally regulated, and had higher self-esteem than those with histories of anxious (insecure) attachment.

In general, attachment predicted engagement in the preschool peer group, the capacity for close friendships in middle childhood, the ability to coordinate friendships and group functioning in adolescence, and the capacity to form trusting, nonhostile romantic relationships in adulthood. Those with secure histories were more socially competent and likelier to be peer leaders. Each of these findings, as well as the findings on resilience and psychopathology to be discussed, holds true controlling for temperament and IQ.

As Bowlby's theory also indicated, security of a child's attachment predicts the reactions of peers and teachers to that child. Children describe peers with avoidant histories as aggressive or "mean." They frequently victimize those with resistant or ambivalent attachment histories, who tend not to be socially competent and are the least liked by others. Those with secure histories are liked best. This finding can be best understood by recognizing that early attachments create social expectations in children, and may incline them to see the present in terms of negative past experiences. For such children, their attachment history can become a

self-fulfilling prophecy as they behave toward new people in their lives—like peers or teachers—in ways that reproduce old, negative relationships.

Teachers, too, with no knowledge of the child's history, treat children in the different categories of attachment differently. Coders, who were blind to the child's history, but who watched videotapes of interactions between teachers and each child, rated teachers as treating those with secure histories in a warm, respectful manner. They set age-appropriate standards for their behavior and had high expectations for them (indicated by actions such as moving on to take care of other tasks after asking the child to do something). With those having resistant histories, the teachers were also warm, but highly controlling. They didn't expect compliance, set low standards, and were unduly nurturing (taking care of things that 5-year-olds should do for themselves). Teachers were controlling and had low expectations with the avoidant group, but displayed little nurturing and got angry at them most frequently. Thus, the reactions of teachers tended to support the attachment assessment of the children that had been made through other observations.

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### **Resilience and Psychopathology**

One of the great questions investigated by human development researchers is the issue of resilience—what determines a child's ability to deal with the inevitable stresses and setbacks of life. It's been shown repeatedly that children with histories of secure attachment are less vulnerable to stress and better able to take advantage of opportunities for growth. Moreover, when these same children go through a troubled period, their prior experience of feeling nurtured isn't erased, so it still influences their response to the new situation.

For example in the MLSRA project, two groups of children were defined who showed consistent, problematic behavior in three assessments between ages 3 and 5. They were viewed as reflecting distinctive developmental pathways, however, because one group had supportive early care and the other didn't. Outcome at age 8 showed that those with early supportive histories had dramatically fewer behavior problems by that point. Note that without historical data, the recovery of these children would seem mysterious. The study found that, at all ages, recovery from periods of trouble could be accounted for largely by the combination of prior history and changes in intermediary stress or support levels.

The group data, and the flow of development, can perhaps be better appreciated by considering just one case from the Minnesota study. When we observed Mike at age 10 at summer camp, he had an interesting mixture of characteristics. He was socially competent, energetic, expressive, and fully engaged, although he seemed to have a chip on his shoulder, and readily asked other boys if they wanted to fight. Five years later, he appeared to be a totally different boy. He was withdrawn, inactive, slouched over, and almost inaudible when he spoke, giving one-syllable answers. Where did this change come from? Where did his smile go? Would it ever come back?

The story of the factors affecting Mike's development is a complex one, but here are some key elements. Mike had a secure early attachment and generally supportive early care. He was a star at the beginning of elementary school. Then his parents went through an ugly divorce when he was in 2nd grade. Once the dust had settled, Mike's father took custody of his older sister, moved away, and never contacted his son again. Mike went on living in a dilapidated house with his mother, who wasn't coping well. She frequently sought his advice and generally relied on his support to an inappropriate degree. When Mike was 11, his mother was killed in a tragic accident and he was reluctantly taken in by his mother's sister. So the signs of adolescent depression we witnessed were completely understandable.

But the story doesn't end there. When Mike got to community college, he caught the eye of a young woman who was attracted to his quietness and tender heart. They married when he was in his early twenties. His wife turned out to be patient, kind, and attentive. Mike is now a warm and nurturing father in a mutually supportive relationship with his wife. His early attachment history didn't disappear during his difficult period; it remained there to be tapped when new opportunities for positive relationships presented themselves.

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Bowlby viewed development in terms of pathways, wherein change is always possible, but is constrained by paths previously taken. This model provides a fundamentally new way of looking at psychopathology—not as conditions some people simply *have*, but as complex outcomes of the succession of adaptations they've made. Anxious attachment doesn't directly cause later disturbance, but it initiates a developmental pathway that, without corrective experiences, increases the probability of psychopathology. In fact, anxious/resistant attachment increases the probability of anxiety disorders and avoidant attachment increases the likelihood of conduct problems. Moreover, the strongest predictor of pathological outcomes, including dissociation, is "disorganized attachment," a pattern discovered by the noted attachment researcher Mary Main.

Disorganized attachment results when frightening or abusive parental behavior places infants in an irresolvable conflict: the desire to move toward the caregiver and flee from the source of fear, when they're one and the same person. This activates two brain circuits simultaneously. The attachment circuitry screams out: "Go to my attachment figure for protection!" Yet, at the same time, an even older circuit of survival screams, "Get away from this source of terror!" The same person triggers approach and avoidance, and the infant's capacity for an organized response collapses. This relational experience predicts the disorganized pattern of attachment in several studies. Further, this "disorganized" infant attachment pattern predicts later dissociative symptoms up to age 26 (and even borderline personality symptoms at age 28).

### How Development Works

Recent research on the interactions among genes, social environmental factors, and history has shown how obsolete the old nature vs. nurture distinction has become. One example is the work of biological psychologist Stephen Suomi, who's been working with monkeys in highly controlled experiments. These studies have shown that two genetic variations that have been associated with alcohol abuse or impulsiveness in humans are linked to totally different outcomes when the infant monkeys are reared by a group of highly nurturing foster mothers rather than by their birth mothers. These genetic-variant animals raised by nurturing mothers, in fact, are *less* likely to abuse alcohol than other monkeys and likelier to be peer group leaders.

Scientists such as Suomi and Michael Meaney of McGill University are now working out *how* experience influences gene expression. Meaney has shown, for example, that the quality of early relational experience—in rats, and in people—influences the regulatory molecules that control gene expression in areas of the brain that determine stress responses. Recent studies in humans have found that more disabling impacts of trauma as a likelier outcome of frightening attachment histories when certain genetic variants are present, coupled with specific epigenetic changes in the regulation of gene expression.

It's important to remember that, according to John Bowlby and the proponents of attachment theory, every starting point, however early one looks, is also an outcome; every outcome is also a starting point. Researchers Michael Mackenzie and Susan McDonough, for example, found that variations in crying at 15 months predicted both measures of temperament and behavior problems at 24 months. Simple conclusions must be avoided, however, because crying at 7 months didn't predict crying at 15 months, or later behavior problems. Nevertheless, the degree to which mothers were bothered by the infants' crying at 7 months (which wasn't related to the actual amount of crying) predicted both later crying *and* behavior problems. Moreover, the 7-month measures were predicted by parent–child relationship representations produced by



parents during the newborn period. Thus, the match between parental expectations and the characteristics of the infant is a powerful determinant of developmental outcome, as Stella Chess and Alexander Thomas suggested in their studies of temperament decades ago.

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### **The Clinical Relevance of Attachment Theory and Research**

There's now overwhelming empirical support for the fact that early experience is a powerful force in development. But what can clinicians draw from this work, beyond feeling reassured that their clinical intuition isn't simply an "article of faith"? For one thing, this extensive work can bring perspective to questions such as why change is so difficult and why emotional closeness can be so scary to some people. Long before children have the language and conceptual tools to process experience, negative or even traumatic patterns of interaction are incorporated in the brain, the functioning of their psyche, and even in the molecules that control the expression of their genes. Therefore, people can get "lost in familiar places" as they continually recreate their earliest patterns of interactions across the lifespan. One role of a therapist is to bring awareness to such patterns and then intentionally create new pathways for clients to take as they unlearn their long-established habits.

Another important implication of attachment research is that it's possible to develop a secure state of mind as an adult, even in the face of a difficult childhood. Early experience influences later development, but it isn't fate: therapeutic experiences can profoundly alter an individual's life course. Further, therapists can learn from attachment researchers' hard-earned insights into human development which features of relational experience are the most effective at optimizing well-being. When parents are sensitive to a child—when they pay attention to and tune in to the signals sent by the child, make sense of these signals and get a glimpse of the child's inner experience, and then respond in a timely and effective manner—children are likelier to thrive. The essential features of a therapeutic relationship mirror this process in many ways.

The brain continues to remodel itself in response to experience throughout our lives, and our emerging understanding of neuroplasticity is showing us how relationships can stimulate neuronal activation and even remove the synaptic legacy of early social experience. Developmental trajectories are complex, often having "islands" of positive relational experience, even within largely negative histories. Through therapeutic relationships and reflective practice, one can make contact with these islands—the "angels" in the nursery, to quote developmental psychologist Alicia Lieberman—and cultivate their growth to the benefit of parents, children, and adults alike. In this way, clinical practice can use the power of our attachment relationships to

cultivate deep and lasting change throughout the lifespan and even stop the transmission of disabling early experiences across the generations.

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### Resources

Ainsworth, Mary D. S., Mary C. Blehar, Everett Waters, and Sally Wall. *Patterns of Attachment*. Hillsdale, NJ: Lawrence Erlbaum, 1978.

Bowlby, John. *Attachment and Loss*. Vol. 2, *Separation*. New York: Basic Books, 1973. *A Secure Base*. New York: Basic Books, 1988.

Hesse, Erik, and Mary Main. "Frightened, Threatening, and Dissociative Parental Behavior in Low-Risk Samples: Description, Discussion, and Interpretations." *Development and Psychopathology* 18, no. 2(June 2006): 309-43.

Kaffman, Arie, and Michael J. Meaney. "Neurodevelopmental Sequelae of Postnatal Maternal Care in Rodents: Clinical and Research Implications of Molecular Insights." *Journal of Child Psychology and Psychiatry* 48, no. 3-4 (March/April 2007): 224-44.

Mackenzie, Michael J., and Susan McDonough. "Transactions between Perceptions and Reality: Maternal Beliefs and Infant Regulatory Behavior." In *The Transactional Model of Development: How Children and Contexts Shape Each Other*, edited by Arnold Sameroff. Washington, D.C.: American Psychological Association, 2009.

Siegel, Daniel J. *The Developing Mind: How Relationships and the Brain Interact to Shape Who We Are*. New York: Guilford, 1999———. *Mindsight: The New Science of Personal Transformation*. New York: Bantam, 2010.

Sroufe, L. Alan. "Attachment Classification from the Perspective of Infant-Caregiver Relationships and Infant Temperament." *Child Development* 56, no. 1 (February 1985): 1-14.

"Appraisal: Bowlby's Contribution to Psychoanalytic Theory and Developmental Psychology; Attachment: Separation: Loss." *Journal of Child Psychology and Psychiatry* 27, no. 6 (November 1986): 841-49.

"Psychopathology as an Outcome of Development." *Development and Psycho-pathology* 9, no. 2 (June 1997): 251-68.

Sroufe, L. Alan, Byron Egeland, Elizabeth A. Carlson, and W. Andrew Collins. *The Development of the Person: The Minnesota Study of Risk and Adaptation from Birth to Adulthood*. New York: Guilford, 2005.

Suomi, Stephen. "A Biobehavioral Perspective on Developmental Psycho-pathology: Excessive Aggression and Serotonergic Dysfunction in Monkeys." In *Handbook of Developmental Psychopathology*, 2d ed., edited by Arnold Sameroff, Michael Lewis, and Suzanne M. Miller. Dordrecht, Netherlands: Kluwer Academic, 2000.

Yates, Tuppert, M., Byron Egeland, and L. Alan Sroufe. "Rethinking Resilience: A Developmental Process Perspective." In *Resilience and Vulnerability: Adaptation in the Context of Childhood Adversities*, edited by Suniya S. Luthar. New York: Cambridge University Press, 2003.