

Chapter 1

What Is Attachment Theory?

I see now that my insistence on spending that first night alone was more complicated than it seemed, a primitive instinct. Of course I knew John was dead. Of course I had already delivered the definitive news to his brother and to my brother and to Quintana's husband. The New York Times knew. The Los Angeles Times knew. Yet I was myself in no way prepared to accept this news as final: there was a level on which I believed that what had happened remained reversible. That is why I needed to be alone.

~ Didion, 2005, p. 32

On the evening of Dec. 30, 2003, Joan Didion, an award-winning novelist and author, was preparing dinner for herself and her husband, John Gregory Dunne. Shortly after he sat down at the table, he collapsed. The paramedics arrived and attempted to revive him. By 10:18 pm he was pronounced dead.

Joan Didion and John Gregory Dunne had been married for nearly 40 years and, in that time, they worked together, traveled together, and raised a daughter together. The fact that, at one moment John was there and in the next he was not, unraveled multiple threads in their entwined lives. Didion published a best-selling book in 2005 that chronicled her efforts to understand the loss. Throughout her book, Didion returns to the phrase “it was an ordinary day” to capture the idea that loss and tragedy can emerge from nowhere, without warning. But she also uses this refrain to highlight the ways in which the loss of a loved one can undo the ordinary. Mundane and perfunctory tasks, such as making dinner, can become sources of pain and disorganization following a loss. The essence of the loved one lingers in the ordinary; making efforts to carry on seem, at once, hopeful and hopeless.

In attempting to find meaning in the events surrounding the loss, Didion struggles to understand whether she was somehow responsible for John's death and whether John himself knew what was going to happen. She tried to reconstruct from her memory omens—signs that the death had been foretold, such as John suggesting that they dine at one of his favorite restaurants, as if it might be his last opportunity to do so. Her sense is that she missed the telltale signs and that, if she could turn back time, she could undo certain events and change John's fate.

Didion characterizes the year following her husband's death as *The Year of Magical Thinking*. She describes a number of superstitious behaviors that appear to represent efforts to bring John back or to undo his death.

I could not give away the rest of his shoes. I stood there for a moment, then realized why: he would need shoes if he was to return. The recognition of this thought by no means eradicated the thought. I have still not tried to determine (say, by giving away the shoes) if the thought has lost its power. (p. 37)

"Bringing him back" had been through those months my hidden focus, a magic trick. By late summer I was beginning to see this clearly. "Seeing it clearly" did not yet allow me to give away the clothes he would need (p. 44).

Didion's book is a masterful exploration of loss by one of America's most celebrated writers. Part of what makes the book compelling is that she is able to articulate clearly a set of confusing experiences that are common among those who lose someone important to them. Many people who lose someone experience profound distress and despair. And their efforts to find their way without that loved one are some of the most challenging that people may face in their lives. Why should the loss of a loved one have such a profound impact on people's lives? Why do the bereaved behave in ways that, to others, may seem hopelessly lost, inexplicable, and even superstitious? Why do people engage "magical thinking" to bring their loved ones back?

ATTACHMENT THEORY

According to attachment theory (Bowlby, 1969/1982, 1973, 1980), the reactions described previously are mature and natural—not immature or magical—responses of a motivational system that originally emerged in the context of infancy. Specifically, attachment theory holds that the desire to be reunited with someone we love—someone who seems distant or inaccessible—is a manifestation of an instinct that evolved originally to keep infants in close proximity to potential caregivers.

Although attachment theory has been a popular theoretical framework for understanding infant-caregiver relationships for many years (eg, Karen, 1994), the theory has also become a prominent framework for understanding personality processes and close relationships in adulthood. One of the unique features of attachment theory—a feature that sets it apart from other theories in modern psychology—is its assumption that *the same kinds of dynamics that play out in infant-parent relationships also govern the way adults function in their close relationships*. For example, adults, like children, are more confident exploring the world when they believe that there is someone who is there to support and encourage them. Moreover, like children, adults get restless and anxious when they are separated from their loved ones for a prolonged period of time. And, just as some children are more secure in their relationships with their parents, some adults are more secure than others in

their adult relationships, including those they have with parents, friends, and romantic partners.

The purpose of this book is to review contemporary theory and research on the way in which attachment dynamics play out in adulthood. Although we opened this chapter with a tale of loss, we should be clear from the outset that attachment theory is not merely a theory of grief; it is a theory of love, emotional connection, and psychological well-being. According to attachment theory, we all have a desire to be loved—to have a warm and supportive relationship with someone who understands us and advocates for us. Having such a relationship provides people with a sense of security, and facilitates their positive social and emotional development. But grief and love have something in common. Namely, they are both extraordinarily powerful emotional experiences that are governed by attachment processes. John Bowlby, the creator of attachment theory, articulated this theme well in the following oft-quoted passage:

Many of the most intense emotions arise during the formation, the maintenance, the disruption, and the renewal of attachment relationships. The formation of a bond is described as falling in love, maintaining a bond as loving someone, and losing a partner as grieving over someone. Similarly, threat of loss arouses anxiety, and actual loss gives rise to sorrow; whilst each of these situations is likely to arouse anger. The unchallenged maintenance of a bond is experienced as a source of security, and the renewal of a bond as a source of joy. Because such emotions are usually a reflection of the state of a person's affectional bonds, the psychology and psychopathology of emotion is found to be in large part the psychology and psychopathology of affectional bonds. (Bowlby, 1980, p. 40)

In the current book we explain what attachment relationships are, how they develop, and how they contribute to adaptive—or maladaptive—interpersonal functioning. In addition to reviewing the core ideas underlying attachment theory, we also highlight some of the exciting new research developments that have taken place over the past decade, including the integration of attachment and social neuroscience, experimental interventions that can be used to probe attachment dynamics, and the implications of attachment theory for understanding psychological well-being and psychopathology in adulthood. Attachment theory has the potential to address many of the themes that are of interest to contemporary psychologists. Our goal is to highlight the current state of the art, illustrate the relevance of the theory for contemporary discourse, and, hopefully, inspire the next generation of scholarship.

The Origins of Attachment Theory

Bowlby's ideas regarding the profound effects of love and loss began to take shape in the early 1930s. While working in a home for delinquent boys, Bowlby was struck by the difficulties that many of the children experienced in forming close emotional bonds with others. After studying the family histories of the

children, Bowlby learned that a disproportionate number of them had experienced severe disruptions in their early home lives. Many of the children had experienced the loss of their mother, had been separated from her repeatedly, or had been passed from one foster home to the next (Bowlby, 1944). Bowlby gradually came to believe that having a continuous, warm, and supportive relationship with a mother or mother-figure is essential for the development of mental health.

Bowlby proposed this hypothesis in a report commissioned by the World Health Organization (Bowlby, 1951). The report generated some controversy, but, overall, was well-received and helped catapult Bowlby into the international spotlight. Despite receiving recognition for his hypothesis regarding maternal deprivation, Bowlby was unsatisfied with his insights. Although it seemed clear to him that maternal deprivation could have deleterious consequences for social and emotional development, he felt that he did not have a full understanding of why that may be the case (Bowlby, 1969/1982).

Who was John Bowlby?

John Bowlby (1907–1990) was a British psychoanalyst who developed attachment theory. He is ranked as one of the 50 most eminent psychologists of the 20th century (Haggbloom et al., 2002).

Bowlby was born in London in 1907 as one of six children in an upper middle class family. Separation and loss were not merely academic topics for Bowlby. As a child, he did not have much contact with his mother, and most of the childcare in the Bowlby home was relegated to nursemaids in a separate wing of the house. Bowlby became particularly fond of one particular nanny. Unfortunately, she left the family when Bowlby was 4 years old. He was distraught by her departure and felt that he had lost a mother-figure. He did not establish an affectionate relationship with subsequent caretakers. Moreover, because his father was serving as a surgeon in World War I for several years, Bowlby had little contact with him. Bowlby was sent away to boarding school by age 10, further alienating him from his family relationships.

When Bowlby was of college age, he followed in his father's footsteps and went to study medicine at the University of Cambridge. During his studies, however, Bowlby realized he was more interested in understanding human development than medicine. He pursued his newfound interest by working at a school for maladjusted children, Priory Gates. During his work at the school, Bowlby began to appreciate the profound impact of early experiences on the development of children. There were two children in particular who made an impression on him. One child was extremely clingy (referred to as his "shadow;" Bretherton, 1992). This child tended to follow Bowlby around, as if he was starved of affection. The other child, who had been expelled from his previous school, behaved in a much more distant and cold manner toward Bowlby. In some respects, these children became templates for some of his developing views on how attachment behavior can be organized in distinct ways for children.

During his medical training, Bowlby enrolled at the British Psychoanalytic Institute where he worked with Joan Riviere and, eventually, Melanie Klein, who was one of the influential object relations theorists of the era. One of Klein's beliefs was that children's maladjustment was rooted in their fantasies regarding their mother. Bowlby, however, was coming to believe that children's maladjustment was due to actual, rather than imagined, experiences with their caregivers. This particular viewpoint, however, was not accepted by Bowlby's colleagues, and Klein in particular attempted to dissuade him of his views.

During World War II Bowlby was assigned to help with the development of officer selection procedures at the Tavistock Clinic in London. This experience provided Bowlby with an opportunity to learn research methods and statistics to a degree that was unusual for psychoanalysts of his time. This expertise would prove to be crucial for helping Bowlby systematically interrogate research from diverse disciplines as he began to flesh out his ideas on attachment. After the War, Bowlby became head of the Children's Department at the Tavistock Clinic, which he renamed the Department for Children and Parents, and began to pursue his interests in parent-child relationships more actively.

Although Bowlby's ideas about attachment began to be published as early as the 1940s, the "full" theory was presented in a three-volume series, *Attachment and Loss*, the first volume of which, *Attachment*, was published in 1969 and the final volume, *Loss*, published in 1980. His trilogy helped to organize the various ideas he had been developing over his career and provided an accessible means for disseminating his ideas about the importance of early attachment experiences and the role they may play in shaping personality development.

Bowlby began to explore maternal separation in more depth with James and Joyce Robertson at the Tavistock Clinic in the 1950s. The Robertsons had been especially interested in the ways in which otherwise well-adjusted children seemed to break down when separated temporarily from their parents, as might be the case when children were sent to hospital or when a mother was giving birth to a sibling. Indeed, nurseries were often dreary places. When separated from their mothers and placed in hospital nurseries, many children seemed listless and, in other cases, excessively vigilant to signs that their parents were returning (eg, magically transforming the sound of footsteps in the hallway to the sounds of their mother returning).

In their observations, the Robertsons and Bowlby noticed that children who had been separated from their parents often underwent a predictable series of emotional and behavioral reactions (Bowlby, Robertson, & Rosenbluth, 1952). The first stage, which Bowlby referred to as *protest*, was characterized by visible signs of distress, vocalizations (crying), and efforts to bring the caregiver back. Bowlby wrote that "the child appears acutely distressed at having lost his mother and seeks to recapture her by the full exercise of his limited resources. He will often cry loudly, shake his cot, throw himself about, and look eagerly towards any sight or sounds which might prove to be his missing mother" (Bowlby, 1969/1982, p. 27).

After a period of time, protest behavior wanes and the child becomes more listless and resigned to the situation. Bowlby referred to this phase as *despair* to highlight the parallels between the emotional and behavioral state of the child and patterns of depression often observed in adolescents and adults. He noted that the child's preoccupation with his or her mother is still apparent, although the child's behavior may indicate increasing hopelessness. Active physical movements diminish and the child may cry monotonously or intermittently. Bowlby writes that the child "is withdrawn and inactive, makes no demands on people in the environment, and appears to be in a state of deep mourning" (p. 27). According to Bowlby, this phase is sometimes taken as an indicator, often erroneously, of the attenuation of distress.

The third phase, labeled *detachment*, was critical in Bowlby's theorizing. He and his colleagues observed that, as the separation persists, the children would no longer reject the nurses. They would eventually begin to smile toward them, accept their invitations to play, and even initiate sociable interactions. For the nursing staff, this phase was often welcomed as a sign of recovery. But Bowlby observed that such signs sometimes betrayed a defensive maneuver on the part of the child. He wrote "When his mother visits, however, it can be seen that all is not well... So far from greeting his mother he may seem hardly to know her; so far from clinging to her he may remain remote and apathetic; instead of tears there is a listless turning away. He seems to have lost all interest in her" (p. 28). Indeed, in the first volume of his series on *Attachment and Loss*, Bowlby (1969/1982) described this as repression in the making to highlight the fact that the lack of interest in the parent was a defensive strategy on the child's part to divert his or her attention away from the sense of pain and rejection the child felt over the separation.

How can these responses be explained? According to the leading psychoanalytic frameworks of the time, the responses could be understood simply as immature reactions of an ego that has not yet fully developed or, alternatively, an ego that was "stuck" in an early stage of development. In addition, some observers claimed that the apparent distress of the children was due to being in a new environment or a lack of quality care by the hospital or nursery staff. But Bowlby was quick to point out that the children often found the new environment to be a source of adventure when the primary caregiver was present. It was the separation from a parent, in particular, that triggered distress. And in all of the cases that Bowlby and his colleagues observed, the children had more than adequate care and attention from the hospital or nursery staff. In short, Bowlby was not satisfied with common explanations for the behavior of children who had been separated from their parents. Thus, he began a quest to understand why separation is such a powerful force in the lives of children, why children respond in the way they do to these events, and the implications of disruptions in parent-child relationships for personality development. Unbeknown to him, the task he was about to undertake would occupy him in various ways for the rest of his life.

The Fundamentals of Attachment Theory

Why should a young child be so distressed simply by the loss of his mother? Why after return home does he become so apprehensive lest he lose her again? What psychological processes account for his distress and for the phenomenon of detachment? Before all, how do we understand the nature of the bond that ties a child to his mother? (Bowlby, 1969/1982, pp. 33–34)

Drawing on ethological theory, Bowlby (1969/1982) argued that “protest” behaviors, such as crying and searching, function to restore and maintain proximity to a primary caregiver—a strategy that would be adaptive for infants born without the capacity to defend or care for themselves. In the first volume of his trilogy he reviewed an extensive body of research on animal behavior, showing that animals born without the ability to fend for themselves are highly subject to predation and abuse. Bowlby argued that, over the course of evolutionary history, infants who were able to maintain proximity to an attachment figure would be more likely to survive to a reproductive age.

As a result of this evolutionary pressure, infants are born with relatively passive features, such as large eyes and cute smiles, which tend to make them appealing to potential caregivers. As infants get older, they are able to play a more active role in soliciting the attention and care of adults. Gradually, they begin to seek the attention of a specific caregiver, what Bowlby referred to as an *attachment figure*. They may selectively cry or protest when the attachment figure is not holding them, they may maintain visual contact with their caregiver when playing or exploring, and, as they learn to crawl, they will actively move toward a parent and reach upward to be held. Bowlby referred to these behaviors as *attachment behaviors* because (1) they signify an emotional bond that is developing between the infant and his or her attachment figure and (2) they function to maintain and restore a comfortable level of proximity or contact with the caregiver. Once these attachment behaviors have been mobilized and the caregiver attends to the child’s attachment needs through the provision of help and support, the child experiences relief and other positive emotions, such as a sense of security.

Harlow’s Research on Contact Comfort

When Bowlby was originally developing his theory of attachment, there were alternative theoretical perspectives on why infants were emotionally attached to their primary caregivers (most often, their biological mothers). Bowlby and other theorists, for example, believed that there was something important about the responsiveness and contact provided by mothers. Other theorists believed that young infants feel emotionally connected to their mothers because mothers satisfy fundamental needs, such as the need for food. That is, the child comes to feel emotionally connected to the mother because she is associated with the reduction of primary drives, such as hunger, rather than the reduction of drives that might be relational in nature.

In a classic set of studies, psychologist Harry Harlow (1958) placed young monkeys in cages that contained two artificial, surrogate “mothers.” One of those surrogates was a simple wire contraption; the other was a wire contraption covered in cloth. Both of the surrogate mothers were equipped with a feeding tube so that Harlow and his colleagues had the option to allow the surrogate to deliver or not deliver milk. Harlow found that the young macaques spent a disproportionate amount of time with the cloth surrogate as opposed to the wire surrogate. Moreover, this was true even when the infants were fed by the wire surrogate rather than the cloth surrogate. This suggests that the strong emotional bond that infants form with their primary caregivers is rooted in something more than whether the caregiver provides food *per se*. Harlow’s research is now regarded as one of the first experimental demonstrations of the importance of “contact comfort” in the establishment of infant–caregiver bonds, and his work was featured prominently in Bowlby’s writings on attachment.

According to Bowlby, attachment behaviors are regulated by an instinctual motivational system, the *attachment behavioral system*, which was gradually “designed” by natural selection to regulate proximity to attachment figures. We elaborate on this concept in detail later in the chapter, but, for now, we note that the psychological dynamics of the attachment system are similar to those of a homeostatic control system, in which a set goal is maintained by the constant monitoring of signals with continuous behavioral adjustment. In the case of the attachment system, the set goal is physical or psychological proximity to an attachment figure and a sense of security (what Sroufe & Waters, 1977a called *felt security*). When a child perceives the attachment figure to be nearby and responsive, he or she experiences security and is more likely to explore the environment and engage socially with others. However, when the child perceives a threat to the relationship or to his or her well-being, the child experiences feelings of anxiety, fear, or distress, and engages in proximity-seeking behavior to gain the attention and comfort of his or her attachment figure. From an evolutionary perspective, these dynamics help to ensure the child’s safety and protection, and ultimately his or her reproductive fitness.

Individual Differences in Attachment Organization

Although Bowlby believed that these basic emotional and behavioral responses were representative of the normative functioning of the attachment behavioral system, he recognized that there are individual differences in the way children appraise the accessibility of the attachment figure and how they regulate their attachment behavior in response to threats. However, it was not until his coworker, Mary Ainsworth, began to systematically study infant–parent separations that researchers began to formally study individual differences in the regulation of attachment behavior.

Who Was Mary Ainsworth?

Mary Ainsworth (1913–1999) was an American–Canadian developmental psychologist, ranked among the 100 most influential psychologists of the 20th century (Haggbloom et al., 2002). She earned her BA in 1935, her Master’s degree in 1936, and her PhD in developmental psychology in 1939, all from the University of Toronto. At Toronto she took courses with William Blatz who had introduced her to security theory (Blatz, 1940)—a theory that both reformulated and challenged Freudian ideas.

Ainsworth taught at the University of Toronto for a few years before joining the Canadian Women’s Army Corps in 1942 during World War II. After getting married, Ainsworth moved to London, England, where she joined Bowlby’s team at the Tavistock Clinic. While at Tavistock, Ainsworth became involved with the research project investigating the effects of maternal separation on children’s personality development. During this time, she developed her research interests in children’s sense of security and set her sights on conducting a longitudinal field study of mother–infant interaction to further examine the development of mother–child relationships in a natural setting. She got her chance to conduct this study in 1954 when she left the Tavistock Clinic to follow her husband to Africa.

Ainsworth studied the interactions of mothers and their infants at their homes in Uganda. She spent approximately 72 hours of observation per dyad. The data from those observations were published years later after she became a faculty member at Johns Hopkins University (Ainsworth, 1967). Ainsworth found that while the majority of the mother–infant interactions involved comfort and security, some were tense and conflicted. She also found evidence that suggested the patterns of interactions between mothers and their infants were related to the level of responsiveness that the mothers showed their infants. Ultimately, this work helped to motivate Ainsworth’s development of the strange situation—the first paradigm used for assessing individual differences in the way infants organize their attachment behavior.

Ainsworth, Blehar, Waters, and Wall (1978) developed a procedure called the *strange situation*—a widely used laboratory paradigm for studying infant–parent attachment. In the strange situation, 12-month-old infants and one of their parents are observed in the laboratory as they are systematically separated from and reunited with one another. Of particular interest is the behavior of infants when reunited with their primary caregivers. In the strange situation, most infants (ie, about 60%) become upset when the parent leaves the room, but, when he or she returns, they actively seek the parent and are easily comforted by him or her. Children who exhibit this pattern of behavior are often called *secure*.¹ Other children (about 20% or less) are ill-at-ease

1. Initially, Ainsworth et al. (1978) emphasized the classificatory labels Group A, B, and C to refer to the different attachment patterns observed in the strange situation. They did this partly because they did not want the category label to bias the understanding of the category itself. Over time, however, scholars gradually came to use the descriptive labels from Ainsworth’s writings. Today, these are often simplified further as secure, resistant, and avoidant.

initially, and, upon separation, become extremely distressed. Importantly, when reunited with their parents, these children have a difficult time being soothed, and often exhibit conflicting behaviors that suggest they want to be comforted, but that they also want to “punish” the parent for leaving. These children are often called *insecure-resistant* or *anxious-ambivalent*. A third pattern of attachment that Ainsworth et al. documented is called *insecure-avoidant*. Avoidant children (about 20%) do not appear overly distressed by the separation, and, upon reunion, actively avoid seeking contact with their parent, sometimes turning their attention to play with objects on the laboratory floor.

Although the Ainsworth et al. (1978) coding system initially resulted in only three categories, additional categories were later added. For example, a fourth classification was added by Ainsworth’s student Mary Main (Main & Solomon, 1990) termed *disorganized/disoriented attachment*. Disorganized children exhibit behavior that appears either confused or not coordinated in a way to achieve the goals of the attachment system. Main and Hesse (1990) found that most mothers of children with a disorganized classification had suffered major losses or other trauma shortly before or after the birth of the infant and had reacted by becoming severely depressed.

Ainsworth’s work is not without its limitations or criticisms (eg, Lamb, Thompson, Gardner, Charnov, & Estes, 1984; Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000). Nonetheless, her research has been important for at least three reasons. First, she provided one of the first empirical demonstrations of how attachment behavior is patterned in both safe and threatening contexts. Moreover, she provided a systematic procedure that researchers could use to study the conditions that activate and modulate attachment-related behavior. Second, her work led to the first empirical taxonomy of individual differences in infant attachment patterns. Indeed, the majority of attachment research over the past few decades has been inspired directly by this taxonomy. And, although the details of the taxonomic system have changed across time, the emphasis on individual differences led researchers to try to understand what makes some children secure versus insecure and the implications of those patterns for social and emotional development (see chapters: *How Do Individual Differences in Attachment Develop?; What Are Attachment Working Models?*). Third, Ainsworth demonstrated that these individual differences were related to observations of infant–parent interactions in the home during the first year of life. Children who were classified as secure in the strange situation, for example, tended to have parents who were responsive to their needs. Infants who were classified as insecure in the strange situation (ie, anxious-resistant or avoidant) often had parents who were insensitive to their needs and engaged in inconsistent or rejecting care. Thus, Ainsworth’s research was crucial for establishing attachment theory as a framework for understanding personality development and individual differences.

Working Models of Attachment

During the early months of life, the degree of security an infant experiences is believed to depend largely on exogenous signals, such as the proximate availability and responsiveness of primary caregivers. Over repeated interactions, however, children develop a set of knowledge structures, or *internal working models*, that represent those interactions and contribute to the regulation of the attachment system (Bretherton & Munholland, 2008; see chapter: What Are Attachment Working Models?). If caregivers are generally warm, responsive, and consistently available, the child learns that he or she is worthy of love, and that others can be counted upon when needed. Consequently, he or she is likely to explore the world confidently, initiate warm and sociable interactions with others, and feel secure in the knowledge that a caregiver is available if needed (see chapter: How Do Individual Differences in Attachment Develop?). In short, the child develops secure working models of attachment. Conversely, if attachment figures are cold, rejecting, unpredictable, frightening, or insensitive, the child learns he or she is not worthy of being loved, and that others cannot be counted on for support and comfort. This knowledge is embodied in insecure working models of attachment. The child is likely to regulate his or her behavior accordingly—either by excessively demanding attention and care, or by withdrawing from others and attempting to achieve a high degree of self-sufficiency (DeWolff & van IJzendoorn, 1997). Collectively, these experiences are believed to shape two important components of working models: the representations that people develop about themselves (models of self) and the representations they construct about others (models of others). As we explain in the chapter: What Are Attachment Working Models?, these representations can vary in their valence (ie, they can be positive or negative) and organize much of the content underlying people’s self-concepts and the attitudes and expectations they have about others.

The working models concept plays a vital role in attachment theory for several reasons. Most importantly, it highlights the role that early experiences play in shaping personality development. As we explain in more detail in the chapter: How Do Individual Differences in Attachment Develop?, many theories in social and personality psychology are focused on individual differences, including differences in basic personality traits, political ideology, social acceptance, and aggressive tendencies. But few theories attempt to explain the developmental antecedents of those individual differences. The working models construct provides a means to describe the kinds of differences that exist, while also providing a means to understand how they come to exist and are sustained across time.

The other reason the working models concept is important is that it provides the theoretical intersection between cognitive science and attachment

theory. As we describe in more depth later in the chapter, one of Bowlby's challenges was to create a theory that could not only explain the intense distress experienced by children who had been separated from their caregivers, but could also explain how interpersonal experiences are internalized by children. He imported ideas from cognitive psychology to better understand how interpersonal episodes are encoded and represented in the mind, how memory systems are structured, how attentional processes can be modulated in the service of defensive goals, and how the vagaries of interpersonal experience can lead to both convergence and divergence in the mental representations that children construct (eg, Bowlby, 1980). Indeed, this intersection continues to be alive and well in modern attachment research (eg, Dykas & Cassidy, 2011). In the chapter: *What Can Social Cognition and Priming Tell Us About Attachment?*, for example, we will review contemporary research on how priming methods have been used to investigate the dynamics of attachment in adulthood.

The Shift to Adult Attachment

Although Bowlby and Ainsworth were primarily focused on understanding the nature of infant-caregiver relationships, they believed that attachment characterized human experience and behavior from “the cradle to the grave” (Bowlby, 1979, p. 129). There are two ways in which this theme has become relevant in modern research.

First, Bowlby believed that attachment-related experiences have implications for social and emotional functioning across the lifespan. In other words, attachment theory is not merely a theory about infant-parent relationships, one that begins and ends in childhood; it is a theory about how attachment-related experiences shape interpersonal functioning across the life course. In his work on juvenile delinquents, for example, Bowlby argued that one reason why the adolescents he studied seemed cold, aloof, and unable to form close emotional bonds was that these children lacked a secure foundation for developing close relationships with others due to disruptions in their early attachment relationships (Bowlby, 1944). For Bowlby, understanding interpersonal and emotional functioning in adulthood required understanding the person's attachment history. Indeed, it is this particular feature of attachment theory that makes it a central one in modern research on personality development and clinical psychology. As we discuss in chapter: *What Are the Implications of Attachment Processes for Psychopathology and Therapy?*, attachment theory assumes that disruptions in attachment-related experiences, and the internalization of such experiences via working models, have the potential to function as risk factors in the development of psychopathology.

Second, theorists have argued that the attachment behavioral system itself continues to play a role in adulthood; it does not merely recede into the

background as children get older. For example, Weiss (1982) suggested that attachment figures in adulthood do not have to be protective figures, but rather they can be seen as “fostering the attached individual’s own capacity for mastering challenge” (Weiss, 1982, p. 173). Even in adulthood, Weiss (1982) claimed, attachment relationships provide feelings of safety and security, and without them people feel lonely and restless. Weiss (1975) further suggested that the behavioral elements of attachment in adult life should be similar to those observed in infancy. Indeed, adults do show a desire for proximity to their attachment figure when stressed, increased comfort in the presence of the attachment figure, and anxiety when the attachment figure is inaccessible (see also Ainsworth, 1989).

Building on Weiss’s (1975, 1982) ideas, Hazan and Shaver (1987) argued that the emotional bond that develops between adult romantic partners is partly a function of the same motivational system—the attachment behavioral system—that gives rise to the emotional bond between infants and their caregivers. Hazan and Shaver observed that in both kinds of relationship, people feel safe when the other is nearby and responsive; they engage in close, intimate, bodily contact; they feel insecure when the other is inaccessible; they share their discoveries with their attachment figure; they exhibit a mutual fascination and preoccupation with one another; and they engage in “baby talk.”

On the basis of these similarities, Hazan and Shaver (1987) and Shaver, Hazan, and Bradshaw (1988) argued that the attachment system underlies adult romantic love. The idea that romantic relationships may function as attachments has had a profound influence on the social psychological study of relationships. Researchers have examined, for example, how attachment-related functions develop in the context of marriage (Creasey & Jarvis, 2009; Kobak & Hazan, 1991), how secure versus insecure people communicate with one another (Feeney, 1994), and how a person’s security can shape conflict in marital life (Domingue & Mollen, 2009). Even the process of relationship dissolution itself has come to be understood as an attachment process: one that involves protest, despair, and detachment (Hazan & Shaver, 1992; Weiss, 1975).

Although there are many similarities in the way infant–caregiver and adult romantic relationships function, there are a few crucial differences too (see chapter: What Is an Attachment Relationship?). First, in the context of infant–parent attachment, there is a clear asymmetry in the attachment–caregiving dialectic. Namely, the infant is said to be attached to the parent; it is not assumed that the parent is attached to the infant. This is not to say that the parent does not experience a strong and profound affectional bond toward the infant, but the parent’s role is that of a caregiver. In romantic relationships, however, there tends to be a balance between attachment and caregiving. On some occasions, one person may require comfort or support while the other partner provides that support; on other occasions the roles may be reversed. Regardless, in adult romantic relationships both partners are likely to be attached to each other and function as attachment figures for one another.

A second critical distinction concerns sexuality. Many romantic relationships begin not because people happen to find themselves attached to someone; they often begin due to mutual physical attraction or sexual interest. And although certain intimate behaviors, such as holding hands, kissing, and cuddling, might be common in both parent–child and romantic relationships, behavior of an explicitly sexual nature is typically reserved for romantic partners (Hazan & Zeifman, 1994). The bottom line is that, although the bond that links romantic partners often involves attachment, it also involves sexuality, and that alone makes romantic relationships qualitatively different from infant–parent relationships. We discuss the intersection of attachment and sexuality in more depth in the chapter: What Is the Attachment Behavioral System? And, How Is It Linked to Other Behavioral Systems?.

Are Individual Differences in Adult Attachment Similar to Those Identified in Children?

One of the enduring contributions of Hazan and Shaver’s (1987) work was the idea that the same kinds of individual differences that characterize infants in the strange situation (ie, secure, anxious-ambivalent, and anxious-avoidant) also characterize the way adults approach close relationships. They observed, for example, that most adults are relatively secure in their relationships: they are comfortable opening up to others, using others for support, and having others depend on them. Other people, in contrast, appear to have difficulty opening up to others and, in many cases, they avoid intimacy as a way to prevent themselves from feeling vulnerable. Yet, others may desire closeness and intimacy, but come across as insecure, prone to loneliness, and excessively clingy. To capture these differences, Hazan and Shaver (1987) created short paragraphs that described the adult analogs of the strange situation types and asked adult participants to indicate which of the three descriptions best captured their thoughts, feelings, and behaviors in close relationships (Table 1.1). In their initial survey work, Hazan and Shaver (1987)

TABLE 1.1 Hazan and Shaver’s (1987) Attachment Style Descriptions

___ I am somewhat uncomfortable being close to others; I find it difficult to trust them completely, difficult to allow myself to depend on them. I am nervous when anyone gets too close, and often, others want me to be more intimate than I feel comfortable being. (*Avoidant*)

___ I find that others are reluctant to get as close as I would like. I often worry that my partner doesn’t really love me or won’t want to stay with me. I want to get very close to my partner, and this sometimes scares people away. (*Anxious-ambivalent*)

___ I find it relatively easy to get close to others and am comfortable depending on them and having them depend on me. I don’t worry about being abandoned or about someone getting too close to me. (*Secure*)

found that the relative proportions of adults who endorsed secure, anxious-ambivalent, and avoidant descriptions were similar to the corresponding base rates of each attachment pattern in the strange situation (see chapter: How Are Individual Differences in Attachment Measured? for an in-depth discussion).

The study of adult attachment patterns, or what many social and personality psychologists refer to as *attachment styles* (eg, Levy & Davis, 1988), has been one of the most popular areas of adult attachment research. Researchers have examined how attachment styles develop (chapter: How Do Individual Differences in Attachment Develop?), the implications they have for emotion regulation and interpersonal behavior (chapters: What Are Attachment Working Models?; What Is the Attachment Behavioral System? And, How Is It Linked to Other Behavioral Systems?; What Are the Implications of Attachment Processes for Psychopathology and Therapy?), the cognitive processes that characterize the way people with different attachment styles function (chapters: What Are Attachment Working Models?; What Can Social Cognition and Priming Tell us About Attachment?; What Are the Effects of Context on Attachment?), and what kinds of experiences promote stability and change in attachment styles (chapters: How Stable Are Attachment Styles in Adulthood?; What Can Social Cognition and Priming Tell us About Attachment?).

The way attachment styles have been conceptualized and measured over the last 4 decades has evolved considerably; modern researchers rarely study the three attachment types that Hazan and Shaver (1987) emphasized in their early research. We discuss the ways in which these taxonomies and measurement systems have evolved in the chapter: How Are Individual Differences in Attachment Measured?, but for now, we note that one of the common ways of conceptualizing attachment styles is a variant of a model originally proposed by Bartholomew and Horowitz (1991). This model assumes that there are four, rather than three, major styles of attachment: secure, fearful, preoccupied, and dismissing. The secure and preoccupied categories are analogs to Hazan and Shaver's secure and anxious-ambivalent attachment styles, whereas the dismissing and fearful styles reflect a split of Hazan and Shaver's avoidant attachment category. Specifically, *fearful avoidance* reflects a form of avoidance that is rooted in feelings of vulnerability and insecurity. In contrast, *dismissing avoidance* is a form of avoidance that is rooted in a desire to be independent and self-reliant (Bartholomew, 1990).

These four attachment styles are often represented with respect to two major dimensions (Fig. 1.1A), what modern researchers often refer to as *attachment anxiety* and *attachment avoidance* (eg, Brennan, Clark, & Shaver, 1998).² Attachment anxiety is characterized by low self-worth and a fear of abandonment and rejection (Brennan et al., 1998; Karantzas, Feeny, & Wilkinson, 2010).

2. Different writers have slightly different ways of labeling these dimensions. For example, some writers refer to the anxiety dimension as "attachment-related anxiety" to differentiate it from a more general sense of anxiety. Others refer to it as "anxious attachment" or "attachment anxiety." Despite these subtle differences, the various terms refer to the same key dimensions described here.

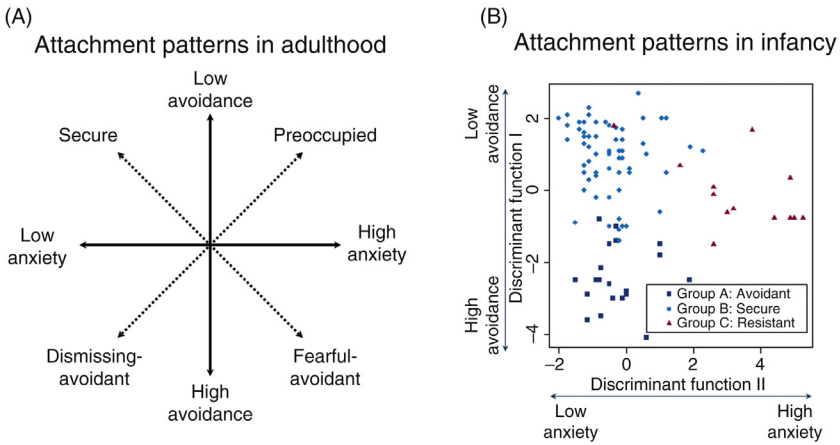


FIGURE 1.1 Attachment patterns in adulthood and infancy. (A) Illustrates the four-category model of adult attachment, based on Bartholomew and Horowitz (1991). In this diagram, the four attachment styles are represented in a two-dimensional space, anchored by the dimensions of attachment anxiety and attachment avoidance. (B) Illustrates the distribution of the three major infant attachment patterns (avoidant, secure, resistant) in a two-dimensional space, based on Ainsworth et al. (1978). The horizontal axis represents variation in anger and resistance, which we have labeled “anxiety” here for continuity. The vertical axis represents variation in proximity seeking versus avoidant strategies, which we have labeled “avoidance.”

People high on the dimension of attachment anxiety tend to rely on hyperactivating attachment strategies (Mikulincer & Shaver, 2003, 2007a). Thus, they tend to be hypersensitive to signs of love (Eastwick & Finkel, 2008) or threats of rejection (Mikulincer, Gillath, & Shaver, 2002). When coping with such threats they experience cognitions and emotions that reflect heightened distress and intensify their efforts to seek proximity to an attachment figure (Gillath, Bunge, Shaver, Wendelken, & Mikulincer, 2005).

Avoidant attachment is characterized by a discomfort with closeness, excessive self-reliance, and a lack of confidence in depending on others to meet needs for comfort and security (Brennan et al., 1998; Karantzas et al., 2010). People high on the dimension of avoidance tend to rely on deactivating attachment strategies (Mikulincer & Shaver, 2003, 2007a). Thus, they tend to ignore or suppress cues related to emotions, love, and relationships. When coping with threats they experience cognitions and emotions that reflect either the suppression of or disassociation from distress and the suppression and minimization of proximity-seeking efforts toward an attachment figure.

Importantly, dimensions similar to attachment anxiety and avoidance also exist in the behavior of children in the strange situation (Brennan et al., 1998). When Ainsworth et al. (1978) published their groundbreaking work on attachment patterns, they reported a discriminant function analysis based on a variety of codes of child behavior, including angry-resistant behavior, contact seeking, contact maintenance, and avoidance. The original three patterns they emphasized

could be located within a two-dimensional space defined by weighted combination of these behavioral codes (Fig. 1.1B). Fraley and Spieker (2003), analyzing data from a separate sample of strange situation behavior, showed that these dimensions could be construed as *anger and resistance*, which, like attachment anxiety, reflects a hyperactivation of attachment-related behavior and affect, and *proximity seeking versus avoidance*, which, like attachment avoidance in the two-dimensional model, reflects a propensity to seek out others or withdraw from them.

The two-dimensional system has been an influential one in modern attachment research. Thus, we describe it in more depth in chapters: What Are Attachment Working Models?; How Are Individual Differences in Attachment Measured?, along with the history that led to it from the original three-type model proposed by Hazan and Shaver (1987). But, for now, we want readers to be aware of the basics of the most commonly used taxonomy of individual differences in adult attachment research and to appreciate that, despite variation in terminology across different taxonomies, at their core, all systems emphasize secure and insecure patterns of relating to others.

WHAT ARE ATTACHMENT THEORY'S INTELLECTUAL ORIGINS? THE INTEGRATION OF PSYCHOANALYTIC PSYCHOLOGY, ETHOLOGY, AND CONTROL SYSTEMS

Bowlby was originally trained as a psychoanalyst, and, as such, he naturally began developing his theory of attachment from a psychoanalytic perspective. Nonetheless, he gradually came to believe that psychoanalytic theory was not capable of explaining some of the phenomena he was seeking to explain. His psychoanalytic colleagues, for example, often emphasized the role of fantasies and wishes in their efforts to understand dysregulated behavior on the part of children. But it was apparent to Bowlby that real, rather than imaginary, experiences were giving rise to the symptoms he observed. He gradually began to assemble a new theoretical perspective, one that had its origins in psychoanalytic theory, but also brought together emerging themes in ethology (Hinde, 1970), cognitive science (Pantin, 1965), developmental science (Piaget, 1937/1954), and the principles of control systems and information theory (eg, Miller, Galanter, & Pribram, 1960). In this section we explain how his theory developed, how he integrated various ideas from disparate intellectual traditions, and, ultimately, what sets his theory apart from other theories in psychology.

The Departure from Psychoanalysis

Bowlby positioned himself against psychoanalysis by highlighting several key points of departure (Bowlby, 1969/1982). First, psychoanalytic methods were primarily concerned with *retrospective* methodology. A patient presents with a problem and the analyst then attempts to reconstruct the series of events or

experiences that may have led to the outcome under investigation. The method is, ultimately, a historical one and, more often than not, based on the recollections of adult patients who are reflecting on their childhood experiences. Although Bowlby was not opposed to the use of retrospective methods per se, his observations suggested that it was possible to study “pathology in the making” among children. Moreover, by starting from real observations of children and tracing the consequences of those experiences, Bowlby believed it would be possible to better understand personality development.

The second key difference, which is not wholly distinct from the first, was to *start with potential pathogenic agents* and uncover their outcomes rather than to start with the outcomes and to attempt to infer their causes. In Bowlby’s case, the pathological agent of interest was “the loss of a mother-figure during the period between about six months and six years of age” (Bowlby, 1969/1982, p. 5). As we will illustrate throughout this book, attachment researchers have not limited themselves to the study of separation and loss exclusively; many researchers inspired by the theory have focused on individual differences in the quality of the care received by children—whether their caregivers are responsive and sensitive to their needs. Other researchers have focused on individual differences in the representations (internal working models) individuals have about themselves and significant others. But, for Bowlby, it was absolutely critical to identify a specific experiential factor—regardless of what it was—and to trace the consequences of that experience prospectively.

The third key difference involves the source of the data that are used to understand development. Namely, psychoanalytic sessions largely involve the analysis of associations and meanings, as derived from dreams, free association, and other methods. These associations become the data upon which the causes of pathology were inferred. Bowlby’s approach was different. Namely, he wanted to use the *direct observation* of children who had been separated from their mothers as the core source of data to examine the development of pathology.

Due to the differences between Bowlby’s approach and that of psychoanalysis, Bowlby’s ideas were met with significant resistance by the psychoanalytic community. Nonetheless, it is important to note that Bowlby viewed himself as a steward of Freud’s legacy and not an iconoclast (Waters, Crowell, Elliott, Corcoran, & Treboux, 2002). Like Freud, Bowlby was interested in explaining enduring issues pertaining to love, hate, ambivalence, security, mourning, and psychological defense.

Although Bowlby appeared to believe that Freud would agree with many of the revisions he had made to the methods and foundations of psychoanalysis, he recognized that their approaches differed in at least one way that was irreconcilable. Namely, Bowlby abandoned the psychic energy model advocated by Freud and his followers in favor of one that combined ethological approaches on instincts with control theory (later in the chapter). Freud’s ideas concerning drive and instinct were at the heart of psychoanalytic metatheory. In Freud’s model, energy (eg, sexual energy) builds over time and, eventually, needs to be

discharged. When it cannot be discharged in socially appropriate ways, it does not simply dissipate. Instead, it has to be channeled into other outlets, sometimes pathological ones, such that the total amount of energy is held constant. This may lead individuals to get fixated at certain developmental stages, potentially handicapping their emotional development.

Ultimately, Freud was using scientific metaphors (eg, energy and its conservation) that were popular in his time to ground his thinking about the human mind. And this is precisely what Bowlby did too—with full awareness of this fact. Bowlby’s objective was to create a new way of thinking about motivation and instinct—one that would enable him to explain why infants develop strong emotional attachments to their primary caregivers, why the disruption of that bond is so stressful, and why the maintenance of that bond is critical for personality development.

Ethology and the Problem of Instinct

To address these issues, Bowlby found inspiration in the emerging ethological theories of instinct and behavior that were gaining popularity in the 1940s. Bowlby was struck by the fact that many behavioral conflicts and pathologies observed in animals who are reared under unusual conditions (eg, away from parents or under stress) had parallels with those observed in humans. Many animals, for example, appear to develop pathological fixations, experience conflict behavior (eg, approach–avoidance conflict), and display displacement activity. Bowlby was also impressed by research on instinct that had been conducted by scholars studying animal behavior. Early ethologists, for example, had conducted extensive experiments on how young animals respond appropriately to specific stimuli without necessarily having learned to do so. Tinbergen (1951), for example, was well-known for his food-begging work in herring gulls. Hatchling birds do not forage for their own food. Instead, they must be fed predigested food from adults. To obtain the food, hatchlings peck at the parent’s bill, a behavior that they are capable of exhibiting shortly after hatching. Experimental research by Tinbergen showed that the pecking response could be activated by presenting hatchlings with a red spot, one that is similar in color and contrast to that of a parent’s lower mandible. By presenting a variety of models that varied in color, size, and contrast, Tinbergen was able to identify the configuration of stimuli that activated the pecking response, showing that red patterns were often preferred to others, even when presented on disembodied sticks.

Bowlby adopted many ethological ideas into his developing framework. But one of the limitations of ethological models, at least from Bowlby’s perspective, was that they often seemed to equate instinctual behavior with behavior that is largely unmodified by experience and learning. As a result, there was a tendency among students of animal behavior to develop separate classes of theoretical models for what they viewed as built-in behavior programs (ie, instinct, drives)

and behavior that is acquired (ie, shaped by learning or conditioning processes). Bowlby did not view these as separate classes of behavior. Instead, he believed that classically instinctive and learned behavior represented two ends of a continuum. In his words, the distinction between innate versus acquired needed to be “cast into limbo” (Bowlby, 1969/1982, p. 38), a sentiment that continues to be expressed decades later by behavioral researchers.

In Bowlby’s view, *environmental lability*—the extent to which a behavioral response is influenced by the environment—was the critical factor that would determine whether a behavior could be modified. Some behaviors are executed in relatively rigid ways. For example, the funnel-building wasp from Australia lays its larva underground and then builds a connecting stem above the ground with a bell-shaped funnel (see Gould & Gould, 2007). The funnel faces away from the tunnel at an angle that makes it difficult for other animals and insects to gain entrance. If one intervenes and disturbs the funnel, instead of repairing the damage, the wasp will build another funnel on top of it, creating in some cases an endless helix of bell-shaped structures. In short, the wasps’ funnel-building program appears to be activated under basic conditions and is executed even in situations in which it is unnecessary. In contrast, other behavioral responses are highly contingent on environmental molding. For example, shortly after hatching, many species of birds will imprint upon the first moving object they see. They will follow the object around and, for all intents and purposes, treat it as the mother. Fortunately, under natural conditions, that object is likely to be their mother. However, as ethologists have demonstrated, if another object is presented to a gosling shortly after hatching, the gosling will follow that object around too, and even attempt to mate with physically similar objects when they reach sexual maturity (Lorenz, 1937, 1970). Like the funnel wasp, there are elements of the gosling’s behavior that seem stereotyped and rigid. But, in the latter case, the system requires experience-dependent calibration; it does not have an inherited “template” that it can use to identify the mother after hatching.

A key idea in Bowlby’s theory is that the plasticity and rigidity of behavior do not emerge from fundamentally distinct mechanisms (ie, those that are innate vs. those that are acquired). He believed that the same kinds of behavioral programs that enable a funnel wasp to behave in a sequenced and inflexible manner also give rise to more sophisticated and flexible patterns of behavior. It is not that instincts are resilient to environmental inputs and learned behaviors are not, rather instinctual behavior can vary in the extent to which it is organized by feedback from the environment.

According to Bowlby, one reason behavioral systems need to retain some degree of plasticity is that they are designed to function in circumstances that are not fully predictable. The behavior of the funnel-building wasp, for example, is adaptive only to the extent to which humans are not intervening in their architecture to satisfy their scientific curiosity. But in most circumstances, the raw behavioral programs will operate appropriately and very little environmental feedback is required for the nest to be built successfully.

However, many behavioral responses, according to Bowlby, lie somewhere between the extremes of environmental plasticity and insensitivity. We may, for example, have inherited cognitive machinery for communicating with others, but the specific language we speak, the dialect we intone, and the specific words we choose may be largely dependent upon the culture in which we are raised. Likewise, because an infant may not be prewired to know what his or her parent looks like, the instinctual systems underlying attachment must use environmental feedback to gather the appropriate information and fine-tune the system accordingly. In this sense, *learning represents the calibration of instincts*.

Control Systems and Information Theory

How can experiences help calibrate instinctual systems? To solve this problem, Bowlby turned to machines and, more specifically, the concept of control systems. Why machines? When it comes to theorizing about human behavior, intention, and purpose, it is difficult to do so without engaging in circular reasoning. Why does a person eat? Because he or she is hungry. How do we know a person is hungry? Because he or she just ate. One potential solution to this problem is to consider what it would take to build a machine that, ultimately, lacks intention (see Dennett, 1993), but behaves in a manner that is purposeful. To do so, Bowlby turned his attention to the work on cybernetics—an early version of what came to be known as information theory or artificial intelligence.

One of the simplest control systems is that of a regulator. A *regulator* is simply a mechanism that is designed to maintain a constant condition. The example Bowlby (1969/1982) used that is still relevant today is that of a thermostat. A thermostat is designed to maintain a room at a specified temperature. To do so, it compares the actual temperature of the room against a set-value or set-point. When there is a discrepancy between the actual temperature, T , and the set-value, the heater may be powered on. And once the discrepancy has been reduced adequately, the heater is powered off (Fig. 1.2). The comparison process (ie, the comparison of an environmental state against an internalized set-value) is central to the way the thermostat behaves: An environmental signal is compared against a value to determine whether there is a discrepancy and whether certain actions should be invoked.

One of the powerful features of a simple mechanism like this is that it is highly flexible. It can be used to heat or cool a room, for example, by taking into consideration whether the discrepancy is positive or negative. Moreover, the comparator can be modified to take into account rates of change. For example, the cooling mechanism might be amped up in proportion to the discrepancy detected and may be run at a lower level when the discrepancy is trivial. Importantly, the basic machinery can be *replicated*, making it possible to reproduce the same system in ways that can be used by multiple individuals.

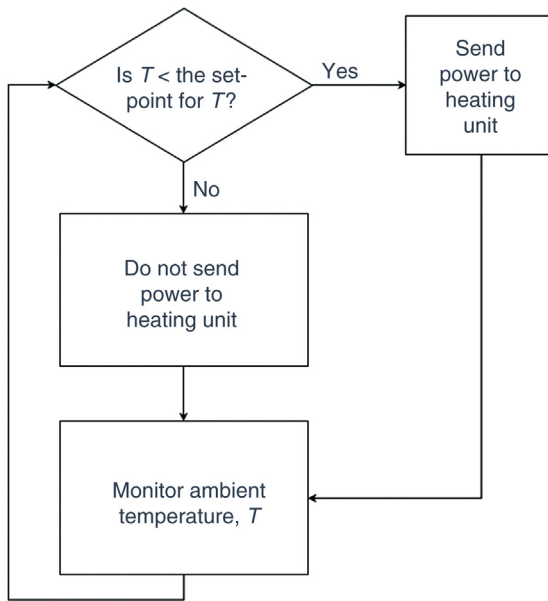


FIGURE 1.2 A control diagram for a simple thermostat.

One of Bowlby's important insights was that instinctual behavior often operates in ways that are similar to a basic thermostat. Namely, instincts that are responsive to environmental inputs are essentially *behavioral control systems* (see chapter: What Is the Attachment Behavioral System? And, How Is It Linked to Other Behavioral Systems?). The core blueprints for their operation are shaped by natural selection rather than human engineers. But the outputs of the systems are not insensitive to environmental inputs; indeed, they are critically dependent upon them. Organisms that behave in ways that directly or indirectly facilitate survival and reproduction are more likely to have behavioral machinery represented in the next generation. The success of the behavioral system is gauged by the extent to which it produces predictable outcomes within a range of environments that are characteristic of the environment in which the system evolved, what Bowlby called the "environment of [evolutionary] adaptiveness" (Bowlby, 1969, p. 47).

Bowlby used this cybernetic framework to explain how attachment behavior is organized, the conditions that activate it, and the conditions that lead to its cessation. At the heart of the *attachment behavioral system* lies a comparison process. It essentially asks the question "Is the attachment figure nearby, accessible, or attentive?" When the attachment figure is judged to be sufficiently nearby or accessible, the person feels secure and, behaviorally, is likely to explore the environment, be sociable, or attend to nonattachment-related concerns. However, when the comparator process determines that the caregiver

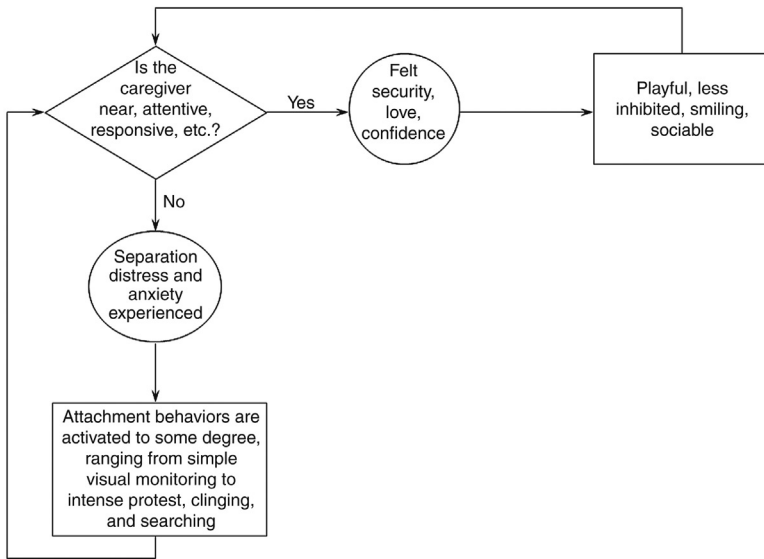


FIGURE 1.3 A simple control diagram for the basic dynamics of the attachment behavior system. (Adapted from Fraley and Shaver, 2000.)

is not as accessible as desired, the child experiences varying degrees of anxiety and distress and, behaviorally, engages in attachment-related behaviors, such as scanning the environment for signs of the attachment figure, distress vocalizations, or moving toward the attachment figure's assumed location. If these actions reunite the infant with his or her attachment figure, the discrepancy is reduced. If they do not, a profound sense of distress and hopelessness may set in (Fig. 1.3).

As we elaborate in chapter: What Is the Attachment Behavioral System? And, How Is It Linked to Other Behavioral Systems?, Bowlby also claimed that the attachment system, like any other behavioral system, has a set goal (proximity to a primary caregiver or felt security), a biological function (protection), triggers or activating conditions (eg, separation, illness, fear), and terminating conditions (bodily contact with the attachment object; restoration of security). The important point to appreciate for now is that the control systems framework, combined with an evolutionary context, allowed Bowlby to explain why children behave the way they do when separated from their parents, how the machinery could be replicated across generations, and, importantly, how the operating parameters of the system could be calibrated by actual experience. This enabled him not only to put forth a powerful framework for understanding attachment and its development, but also to situate his work as a modern extension of basic psychoanalytic ideas.

Are Humans Simple Machines?

One of the critiques of using basic control models to understand behavior is that they seem too simplistic. It is hard to imagine how complex behavior, such as a child searching for his or her mother, can emerge from simple processes, such as comparisons and set-values. However, it is possible to create systems that behave in complex ways by adding a few additional components to the cybernetic toolkit. For example, a second kind of control mechanism that Bowlby discussed, a *servomechanism*, can be used to allow the set-value itself to be changed as a function of environmental feedback. Bowlby discussed power steering in automobiles as an example. The axis for the front wheels is designed to be controlled by the steering wheel. In a sense, the steering wheel provides the set-value and various mechanisms function to reduce the discrepancy between the current location of the axis and that implied by the positioning of the steering wheel. But the positioning of the steering wheel can change. And this added complexity allows for much greater plasticity in the behavior of the system. It remains “instinctual” (ie, the automobile is built according to a specific blueprint), but its functioning is determined by feedback from the environment.

One of the most significant features of Bowlby’s writings was the concept of the *integration of control systems*—an idea inspired by Miller et al. (1960). In short, it is assumed that the set-value of a system can be determined by the operation and output of other related systems. That is, the interplay between sub-systems can create behavior that is not only complex, but purposeful. Bowlby’s example of such interplay was antiaircraft guns. The positioning of the cannon is set by information coming from a tracking device, such as a radar system. Thus, one mechanism is designed to detect and track the location of an enemy target and feeds this output into another mechanism that is responsible for moving the cannon to the projected location of the target and firing when ready. The system as a whole is just a machine; it has no purpose, goal, or intention. Nonetheless, it behaves in sophisticated ways—ways that would be difficult to describe without using terms like “purpose,” “goals,” and “intentions.” And it responds to changes in the environment in intelligent and sophisticated ways (see Carver & Scheier, 1998, for a discussion of these ideas in the context of modern research on self-regulation).

The set-goal in this case is a *system-level property*. It characterizes the way in which the system functions at an emergent level. Each of the components is doing something concrete, but none of them are responsible for hitting enemy targets per se. Hitting enemy targets, in this example, is what Bowlby called a “predictable outcome” of the system. And the ability of the system to achieve this goal accurately and efficiently is what may lead to it being used and refined in military operations. When biological systems of this sort are assembled, they are *subject to natural selection at the level of their emergent behavior* and the ways in which it contributes to survival and reproduction.

Goal-Directed Behavior and Primary Versus Secondary Strategies

In complex behavioral systems, behavior does not follow from a stimulus in a rigid manner. Instead, what is inherited is a purposeful system that can select one from many possible behavioral strategies to achieve a goal. A child who is separated from his or her caregiver, for example, has multiple options available to him or her to reestablish proximity, such as crying, searching, and smiling. Depending on his or her experiences, he or she may have learned that some options are more likely to produce the desired outcome than others. Being able to select one strategy among several potential strategies is critical for flexible behavioral control.

In Bowlby's theory, the tendency for children to seek out an attachment figure when distressed is construed as a *primary strategy*. That is, it is the "default" response of the system. Attachment theorists, however, also emphasize *secondary strategies*. Secondary strategies are those that might be used to achieve attachment-related goals (eg, the maintenance of felt security) when the primary strategy is not viable. If it is not possible for a person to seek out their attachment figure for support (perhaps due to an extended separation), the individual may need to rely on alternative means for achieving a state of security (see chapters: What Are Attachment Working Models?; What Is the Attachment Behavioral System? And, How Is It Linked to Other Behavioral Systems?).

If we return to the control model discussed previously in Fig. 1.3, we can see that it only captures the dynamics of what might be called a primary or secure strategy. When the child senses that the attachment figure is inaccessible, he or she experiences distress and, behaviorally, selects behavioral strategies that have the "predictable outcome" of reestablishing proximity to the primary caregiver. But this basic model can be modified to include experience-dependent contingencies (Fig. 1.4). For example, if the child has learned over the course of repeated interactions with the caregiver that crying and persistence are ineffective ways to establish a sense of security, he may downplay those responses and, instead, opt for alternatives. In the diagram in Fig. 1.4, this is represented through the use of deactivating strategies, and when these strategies are successful in regulating anxiety, they may become the foundation for the attachment pattern that the individual develops. Some children, however, may find that exaggerated displays of vulnerability and distress are highly effective in capturing the attention of caregivers and, as a result, employ behavioral strategies that are highly vocal and expressive (ie, hyperactivating strategies).

The distinction between hyperactivating and deactivating strategies plays an important role in modern research on attachment in adulthood. Indeed, as we discuss in the chapters: What Are Attachment Working Models?; What Is the Attachment Behavioral System? And, How Is It Linked to Other Behavioral Systems?), individual differences in attachment are often framed with respect to the way in which these strategies are implemented: avoidant people appear to

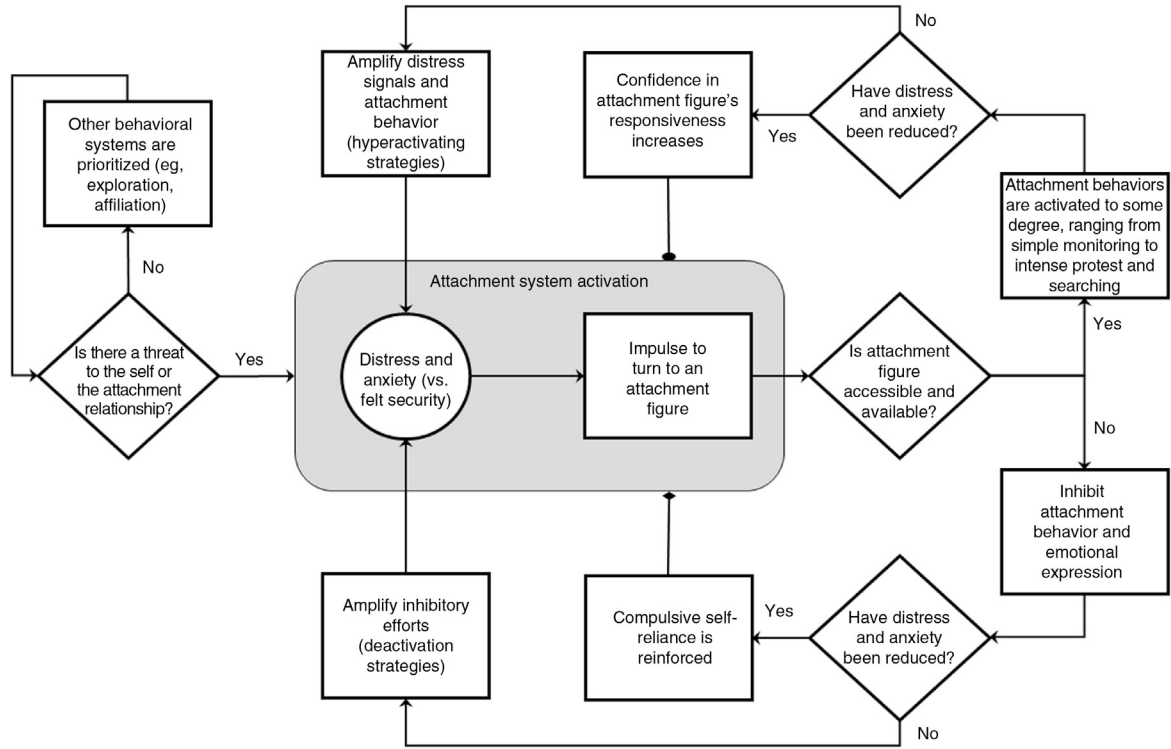


FIGURE 1.4 A modified control diagram of attachment dynamics. According to this model, when there is a threat to the self or the attachment relationship, the attachment system is activated, leading to feelings of anxiety and an impulse to turn to the attachment figure. If the figure is perceived to be accessible, attachment behavior is activated. If that behavior succeeds in reducing anxiety or solving the problem, the system gradually becomes quiescent and the individual's confidence in the availability of the attachment figure and the effectiveness of safe haven base behavior increases. If not, the individual may amplify attachment behavior—a pattern that has the potential to become chronic. If, in contrast, the individual believes that the figure is not accessible, he or she may inhibit attachment behaviors. If this is successful, it has the potential to reinforce a sense of compulsive self-reliance. If it is not successful, deactivating strategies may be amplified, potentially amplifying distress and insecurity.

use strategies that deactivate attachment-related behavior, whereas highly anxious people use strategies that hyperactivate attachment behavior.

IS ATTACHMENT THEORY A “GRAND THEORY”? HOW DOES IT DIFFER FROM OTHER PERSPECTIVES?

A century ago, many major theoretical perspectives in psychology aspired to explain more than just a narrow slice of human behavior. Freud (1900), for example, was not merely trying to understand the meaning of dreams; he was attempting to develop a theory of the mind that could explain love, hate, desire, culture, and taboo. Likewise, Darwin (1859) was not merely attempting to understand why some finches have longer beaks than others; he was seeking an explanation for why variation in the natural world exists and why form and function are so intimately bound. Attachment theory is one of the few modern psychological theories that might be considered a “grand theory” in the spirit of personality theories from yesteryears. Indeed, this may be one reason the theory is so popular. In this final section we briefly consider three features that tend to set attachment theory apart from other theories in contemporary psychology.

Multiple Levels of Analysis and Scientific Explanation

Over 50 years ago, Tinbergen (1963), one of the pioneers of evolutionary approaches to the study of behavior, argued that it is necessary to address four questions when trying to explain behavioral phenomena: those concerning *causation* (ie, what environmental or physiological mechanisms control behavior), *ontogeny* (ie, how does the behavioral pattern develop), *function* (ie, how does the behavior contribute to fitness and what kinds of adaptive problems does it solve), and evolution or *phylogeny* (ie, how did the behavior evolve over evolutionary history)? Contemporary psychologists are largely preoccupied with questions concerning causation, wondering whether specific contextual manipulations lead to immediately observable consequences. As Tinbergen noted, this is a legitimate and important part of trying to understand “why” things are the way they are. But an exclusive focus on causal mechanisms often leaves out other important ways of understanding behavior.

Take grief as an example. Many people who lose someone they love report what, on the surface, may seem to be irrational thoughts and behaviors, as discussed in the Didion example that opened the chapter. For example, they may be unwilling to part with their loved one’s possessions, thinking that the deceased may need those items if they were to return. They may also engage in attempts to “undo” the loss, as if these efforts may bring the lost person back. If we wanted to know why some people are inclined to engage in such “magical thinking,” we may conjecture that those who do so are more likely to have lost someone who was important to them. We could even evaluate this idea empirically by examining the association between whether people have lost someone recently and rates of such behaviors.

But such an investigation would leave many questions unanswered. Although such a study would help us better understand whether loss, compared to nonloss, predicts such seemingly irrational behavior, it would not shed light on another form of “why”—why is it that people grieve as opposed to, say, simply “move on,” in the way they might do if they lost a pencil. That is, knowing the proximal cause of grief does not provide a full explanation for it; it doesn’t capture the *meaning* behind the behavior.

To capture the meaning of behavior, we need to be more comprehensive in our inquiry. We could, for example, also inquire about the function of grief: what functions might grief serve in the context of survival and reproduction? According to Bowlby (1980), grief is a manifestation of separation protest behavior—behaviors that function to keep people in close proximity to their attachment figures. And, although certain responses (eg, calling out for one’s attachment figure in the night) might lead to the “predictable outcome” of contact and proximity when the separation is temporary, the core components of the system are not necessarily designed to “know” the difference between a temporary and a permanent separation. Thus, when similar behaviors emerge following death, they appear irrational or nonfunctional. But, in fact, they are highly functional in the context in which they were selected: to prevent separations from attachment figures. But this way of understanding the meaning of grief would be difficult to appreciate without considering function; this insight does not emerge naturally as a consequence of studying proximate mechanisms alone.

In short, a grand theory typically goes after more than one kind of “why” when it comes to understanding behavior and experience. Attachment theory is one of only a few contemporary theories in social and personality psychology that attempt to answer “why” questions from multiple timescales and perspectives. As such, it provides novel insights into a variety of questions, including what grief is, why people fall in love, and why human connection is a fundamental part of personality development.

Broad Reach

Second, grand theories offer a unified way to explain a diverse number of phenomena. Attachment theory offers an explanation for many questions about human experience, including:

- Why is relationship between children and their primary caregivers so emotionally powerful?
- Why do some people tend to recreate the same dysfunctional patterns in one relationship after the other?
- Why are some people better able to understand another person’s point of view? Why are some people more empathic and compassionate than others?
- Why do people sometimes experience anger toward the people they love?
- Why do adults fall in love with one another, form exclusive pair-bonds, and remain together for prolonged periods of time?

From our point of view, it is noteworthy that there are very few theoretical perspectives in contemporary psychology that have the potential to speak to issues that cut across a variety of disciplinary boundaries, including developmental, clinical, social, and personality psychology. One of the most prominent theoretical perspectives in the study of close relationships, interdependence theory, offers an excellent account of the ways in which the investments people make in romantic relationships give rise to a sense of commitment and relationship persistence (eg, Rusbult, 1980). But interdependence theory has relatively little to say about the nature of love and loss. It does not explain why people are compelled to forge deep emotional connections with others in the first place. Similarly, one of the most prominent theoretical frameworks in the study of personality and individual differences, the Five Factor Model (Costa & McCrae, 2006), offers a nearly comprehensive taxonomy of the ways in which people differ from one another in their thoughts, feelings, and behavior. But the Five Factor Model seems unconcerned with the fact that people live their lives embedded in and negotiating their relationships: seeking love and acceptance, struggling with feeling that they are misunderstood, and trying to find meaning in what they do.

Although we are clearly enthusiastic about the potential for attachment theory to speak to a number of different features of the human condition, we should be explicit in stating that we do not believe it explains everything. Attachment theory, for example, does not explain why men are more likely than women to prefer youthful mates (Buss & Schmitt, 1993). But the fact that attachment theory enters into discussions of gender and mate preferences is evidence of its broad relevance (see chapter: What Are the Effects of Context on Attachment?).

Psychological Adaptation and Well-Being

Finally, at least in psychology, grand theories typically offer a perspective on psychological adaptation: what optimal human functioning entails. One of the core ideas in attachment theory is that security lies at the heart of adaptive functioning. A person who has a history of interpersonal experiences in which he or she has learned that others are available and responsive when needed acquires the autonomy and competency necessary to venture out and explore the world. When things become uncertain, the person knows that he or she can fall back on others.

In short, what actual and internalized supportive relationships do is help establish a sense of confidence and grounded autonomy. A secure person knows they have someone they can turn to—a *safe haven*—when things go wrong. Moreover, they can use the attachment figure as a *secure base* from which to explore the world. As we explain in the chapter: What Is an Attachment Relationship?, these features represent the hallmarks of an attachment relationship, whether that relationship exists in childhood or in adulthood. The presence of a secure base is what enables a sense of autonomy, facilitates the consideration of alternative points of view, and enables people to explore new opportunities (eg, careers).

Many disorders of psychological functioning can be viewed as the breakdown of safe haven and secure base dynamics. For example, the experience of social anxiety can be viewed as uncertainty about the whereabouts of one's attachment figures. This is true, of course, in the short-term (ie, people feel a sense of anxiety and distress when separated from their primary attachment figures or when they are uncertain about their safety or availability). But Bowlby also believed disruptions in attachment relationships can create a more persistent form of uncertainty, which could manifest in a number of ways. Thus, at least in some cases, general patterns of maladaptive functioning may have their origins in specific attachment experiences.

We should be clear that Bowlby did not believe that *all* forms of psychopathology had their origins in attachment-related experiences. It is unlikely, for example, that people who are suffering from posttraumatic stress disorder after serving in combat are symptomatic because of disruptions in early attachment experiences. But, it is possible that those attachment experiences can function as either protective or vulnerability factors, impacting the severity or expression of disorders that have etiologies outside the realm of attachment (see chapter: What Are the Implications of Attachment Processes for Psychopathology and Therapy?).