

Attachment Theory as an Organizing Framework: A View From Different Levels of Analysis

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In recognition of the broad influence of attachment theory, the articles in this issue cut across diverse areas of psychology and multiple levels of analysis. T. R. Insel (2000) focuses on the molecular level, discussing the complex link between neurobiology and attachment behavior in nonhuman animals. The three articles by J. Cassidy (2000), R. C. Fraley and P. R. Shaver (2000), and P. R. Pietromonaco and L. Feldman Barrett (2000) present midlevel analyses, incorporating ideas about the links between mental representations and relationship thoughts, feelings, and behavior. C. Hazan and L. M. Diamond (2000) take a macro approach by applying a broad evolutionary perspective to understand the basis for attachment in adult pair bonds. The discussion focuses on unifying themes, including the interplay between attachment, caregiving, and sexual behavior; attachment functions in adult relationships; evolutionary processes; the operation of internal working models; and continuity in attachment across the life span.

Attachment theory, originally developed by John Bowlby, offers a set of organizing principles for understanding many aspects of relationships. Because the theory is broad and comprehensive, it has served as a guiding framework for researchers across diverse areas of psychology. Bowlby's roots in the psychoanalytic tradition gave the theory its clinical underpinnings, his focus on parent-child relationships naturally attracted the attention of developmental psychologists, and his assertion that attachment processes operate across the life span paved the way for social and personality psychologists to study attachment in adult relationships. Furthermore, the hypothesis that attachment mechanisms are innate has led to investigations of their neurobiological basis.

The first empirical studies, conducted within developmental psychology (e.g., Ainsworth, Blehar, Waters, & Wall, 1978), investigated the behavioral patterns that emerge from different kinds of attachment experiences. Although developmental psychologists have been conduct-

ing attachment research for many years, the focus was (not surprisingly) on parent-child attachment, and little attention was paid to attachment processes as they might unfold in adult relationships. This was true despite Bowlby's (1979) proposal that attachment occurred across the life span and within the context of adult close relationships. In 1987, Hazan and Shaver published an article in which they proposed that adult love relationships share similarities with the attachment relationships observed earlier in life. They suggested that Ainsworth's three attachment behavioral patterns (secure, anxious-ambivalent, and avoidant) also might characterize adults' feelings about their romantic relationships, and they provided evidence documenting similar patterns in adults. Since their influential article, the number of studies investigating attachment in adult relationships has grown exponentially. Some work has focused on romantic relationships (Carnelley, Pietromonaco, & Jaffe, 1994; Collins & Read, 1990; Hazan & Shaver, 1987; Simpson, 1990), other work has focused on peer and family relationships (Bartholomew & Horowitz, 1991), and still other work has focused on relationships ranging from close to casual (Kirkpatrick & Shaver, 1992; Mikulincer & Nachshon, 1991; Pietromonaco & Feldman Barrett, 1997). At the same time, but separately from the research emerging within social and personality psychology, developmental researchers began

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considering the role of attachment in adulthood (e.g., Ainsworth, 1989; Main, Kaplan, & Cassidy, 1985). In addition, more recent work has investigated the role of neurobiological processes in maternal attachment behavior and pair bonding in nonhuman animals (e.g., Insel, 1990; Insel & Hulihan, 1995; Numan & Sheehan, 1997).

In recognition of the pervasive impact of attachment theory, the articles appearing in this special issue cut across different areas of psychology and cover multiple levels of analysis. The article by Insel (2000) focuses on the molecular level, discussing the complex link between neurobiology and attachment behavior in nonhuman animals. The three articles by Cassidy (2000), Fraley and Shaver (2000), and Pietromonaco and Feldman Barrett (2000) present more mid-level analyses, incorporating ideas about the links between mental representations and relationship thoughts, feelings, and behavior. The article by Hazan and Diamond (2000) takes a macro approach by applying a broad evolutionary perspective to understand the basis of attachment in adult pair bonds.

Each article provides insights into distinct aspects of attachment. The special issue begins with Cassidy's (2000) article, which addresses attachment processes in adults from a developmental perspective. She focuses on the developmental trajectory of individual differences in attachment and caregiving behavior and how mental representations and environmental features may lead to both continuity and change in these sets of behaviors. Fraley and Shaver (2000) consider the strengths and limitations of multiple components of adult romantic attachment theory and offer several theoretical revisions to address limitations of the original formulation. Pietromonaco and Feldman Barrett (2000) focus specifically on evaluating the concept of internal working models of attachment as it has been applied to the study of adult close relationships and propose several theoretical refinements to clarify the structure, function, and operation of adults' working models. Insel (2000) highlights the critical role of oxytocin in evoking maternal behavior and in the development of adult pair bonds in the prairie vole, and he discusses possible neural mechanisms underlying the operation of oxytocin. Finally, Hazan and Diamond (2000) propose an alternative to the standard evolutionary model of human mat-

ing that can account for longer term pair bonds in humans. They suggest that attachment mechanisms, which originally evolved to keep infants close to their caregivers, were adapted for a new purpose: to promote enduring bonds between reproductive partners and, thereby, to increase the likelihood that immature offspring would survive.

Several unifying themes emerge across the set of articles. First, all of the articles consider the connections among attachment, caregiving, and sexual behavior in adult relationships. The two articles by Insel (2000) and by Hazan and Diamond (2000) point out that oxytocin is implicated in both maternal caregiving and in sexual behavior and pair bonding, suggesting a biological link between caregiving, sex, and attachment. This biological link, however, does not necessarily mean that the three systems are equally influential in romantic couple functioning. In Cassidy's (2000) view, couples are likely to differ in the relative importance they assign to attachment, caregiving, and sexual systems and in their competence within each system; such differences also may change within couples over time. Fraley and Shaver (2000) emphasize the integration of the three behavioral systems in adults, and Pietromonaco and Feldman Barrett (2000) similarly suggest that the three systems work together to help adults achieve felt security. The importance of both caregiving and sexual behavior in adult relationships raises questions about how attachment relationships might differ in parent-child and adult-to-adult pairs. For children, attachment behavior is directed to a primary adult caregiver, and the adult provides care. Nevertheless, children learn about how to give care by observing their adult models. In adulthood, the operation of attachment and caregiving is intertwined with sexual behavior, and the roles of each partner are reciprocal.

A second theme focuses on the ways in which adult relationships serve attachment functions and how to define those functions (e.g., achieving felt security) for adults. Hazan and Diamond (2000) suggest that adult attachment relationships can be identified by the kinds of behaviors (i.e., maintaining proximity, seeking comfort during distress, experiencing separation distress, and using the partner as a secure base) that people direct toward their partner. Fraley and Shaver (2000) aptly point out that attachment

relationships may be defined by both positive (e.g., providing comfort) and negative (e.g., prolonged distress when a breakup occurs) behaviors and that methodologies for identifying an attachment relationship must disentangle positive and negative responses from attachment security and insecurity. Pietromonaco and Feldman Barrett (2000) propose that felt security is intimately tied to maintaining a sense of self-esteem and protection from threat. All of these articles suggest that, at both theoretical and empirical levels, greater specificity is needed in defining the nature of attachment relationships in adulthood.

A third theme focuses on the role of evolutionary processes in the development and functioning of the attachment system. At a micro level, Insel (2000) suggests that particular environments may have selected for genetic and related neurochemical processes that promote attachment to a specific partner. This idea is echoed at a more macro level by Hazan and Diamond (2000), who discuss how and why attachment to a specific partner might have evolved as an adaptive response to environmental demands. Whereas both of these articles recognize the ways in which an evolutionary perspective helps to explain attachment processes, Fraley and Shaver (2000) address the limits of the evolutionary hypothesis, noting the low frequency with which pair bonding occurs in mammalian species and the diversity in the nature of pair bonds across different species. As Fraley and Shaver suggest, the evolutionary hypothesis will require further elaboration and investigation (e.g., via comparative and phylogenetic studies).

A fourth theme concerns the nature and function of working models as the psychological mechanism underlying attachment processes. Cassidy's (2000) article focuses on the development of and possibilities for continuity and change in working models from childhood to adulthood. Two other articles (Fraley & Shaver, 2000; Pietromonaco & Feldman Barrett, 2000) elaborate on the underlying components and organization of working models and offer new perspectives that highlight the role of affect in organizing and maintaining relationship knowledge.

A fifth theme arising in all of the articles concerns the degree to which attachment processes show continuity across the life span.

Whether working models built around the parent-child relationship transfer to adult close relationships remains controversial. Furthermore, the evidence so far suggests that continuity is limited (Fraley & Shaver, 2000) and can fluctuate in the face of environmental change (Cassidy, 2000). In addition, Pietromonaco and Feldman Barrett (2000) discuss conceptual caveats to the concept of continuity. Considerable consensus exists on one point: Longitudinal data are needed to adequately answer the continuity question.

Taken together, these themes identify the aspects of attachment theory that have demonstrated construct validity as well as highlight critical issues for future work on adult attachment. For example, the hormonal biology common to both maternal and sexual behavior suggests that various attachment behaviors in humans may be mediated by a common biological system. Insel's (2000) argument is supported by evidence in humans showing that oxytocin is secreted during labor and nursing, and it is released during sexual orgasm for both men and women (e.g., Carter & DeVries, 1999; Uvnas-Moberg, 1998; for a discussion, see Angier, 1999). Although we must be cautious about inferring explanations for human behavior from nonhuman animals, the evidence is consistent with the view that oxytocin plays a role in human maternal and sexual behavior and may facilitate the operation of attachment in both parental and adult love relationships. This observation gives rise to new hypotheses. For example, what is the role of sex in fostering attachment in adults? If felt security is linked to feeling good about the self, as we suggest in our article, then sexual behavior may lead to an immediate positive reaction and thus promote felt security. George Klein (1976) said as much in his reinterpretation of psychoanalytic theory.

This special issue clearly demonstrates that attachment theory offers a broad, comprehensive theoretical paradigm for understanding human relationships. Of course, as with any highly visible theory, the attachment framework has received its share of criticism. The articles in this special issue review some of those criticisms. For example, research within social and personality psychology is limited by its reliance on self-report. In addition, much of the work to date has been descriptive rather than explanatory, with researchers focusing on outcomes

rather than process. Despite these limitations, however, the articles in this issue clearly show convergence in findings across biological, developmental, and social personality areas of research. More important, they actively address current problems with the theory and make recommendations for future research to ensure that attachment theory will remain a guiding force in understanding human relationships in years to come.

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