Early Attachment and Later Development
Reframing the Questions

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How does the child foreshadow the adult-to-be? Philosophers, spiritualists, playwrights, and, most recently, behavioral scientists have sought to understand how early dispositions and influences provide a foundation for adult personality. Among the answers they have offered is the influence of early, close relationships. This view was eventually crystallized in Freud's (1940/1963, p. 45) famous dictum that the infant–mother relationship is "unique, without parallel, established unalterably for a whole lifetime as the first and strongest love-object and as the prototype of all later love-relations." Drawing on this psychoanalytic heritage, Bowlby (1969/1982, 1973, 1980) enlisted formulations from evolutionary biology, developmental psychology, and control systems theory to argue that a warm and continuous relationship with a caregiver promotes psychological health and well-being throughout life in a manner that accords with the adaptive requirements of the human species. In collaboration with Ainsworth (1967, 1973), he proposed that differences in the security of infant–mother attachment have significant long-term implications for later intimate relationships, self-understanding, and even risk for psychopathology. Bowlby's conceptual integration was provocative, and with the validation of reliable methods for assessing the security of attachment in infants and young children, it could be examined empirically.

There have been three stages to the research that followed on early attachment and later development. The first consisted of studies in the late 1970s, confirming that early attachment relationships *could* be stable over time and predict later aspects of psychosocial functioning, such as peer sociability, positive affect, and cooperativeness (e.g., Matas, Arend, & Sroufe, 1978). These studies were important because they provided initial support for the claims of attachment theory and distinguished this approach from earlier approaches, guided by social learning theory, in which researchers had found little consistency in attachment measures and little prediction of later behavior (see Masters & Wellman, 1974).

The second stage consisted of several decades of subsequent research exploring the breadth of later behavior that was associated with attachment security. Consistent with Bowlby's formulations, developmental researchers explored the association between early security and later relations with parents, peers, friends, and other social partners, as well as with self-concept, competence in preschool and kindergarten, personality development, social cognition, behavior problems, and indicators of emergent psychopathology. Moreover, guided by a general expectation that a secure attachment would predict better later functioning, researchers broadened their inquiry to explore how security predicted later cognitive and lan-

guage development, exploration and play, curiosity, ego resiliency, math achievement, and even political ideology, extending the range of predictive correlates far beyond what Bowlby originally envisioned. This breadth of documented sequelae was possible, in part, because of the availability of large longitudinal data sets, such as the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development (NICHD SECCYD), even though they had not really been designed to test the later outcomes of attachment security (Thompson, 2008a). Attachment theory was thus stretched to explain a variety of empirical associations between attachment and later behavior, some of which were theoretically unpredicted and may have resulted from unmeasured mediators as well as direct causal influences. To illustrate, a number of studies have documented an association between security of attachment and later measures of cognitive performance and IQ, but more carefully designed mediational studies show that this is because of differences in parental quality of assistance, peer relationships, and children's cooperativeness at school—mediators that are fully consistent with attachment theory (Drake, Belsky, & Fearon, 2014; West, Mathews, & Kerns, 2013).

This has led to a third stage of research characterized by broader analyses of what is reliably known about the consequences of attachment (through meta-analysis and other approaches) and the use of more incisive methodologies to examine direct and indirect outcomes of early security. These methodologies have included growth curve modeling, mediational analyses, and the use of biologically informed designs. In a sense, this third stage involves a thoughtful reconsideration of how and why early attachment security should be associated with later development, and exploration of alternative models for why security might predict later behavior in direct and indirect ways. These studies also draw on samples in which the security of attachment was not stable over time. The discussion of empirical studies that follows includes examples of these approaches to reframing the question of attachment and later behavior in more sophisticated ways.

This chapter begins, therefore, with consideration of alternative explanations for why a secure attachment should be associated with later behavior, with a focus on attachment security in the early years. Following this is a review of the research examining these associations in the developmental domains that have been best studied:

parent–child relationships, close relationships with peers and other partners, personality, emotion regulation, emotion understanding, social cognition, conscience, and self-concept. In a final section, these results are discussed in light of what we can conclude about how attachment security influences later development, which research approaches are most likely to elucidate this association in future studies, and future directions.

Conceptual Perspectives

To an observer, it might appear surprising that it is necessary to begin this discussion by sorting through the various conceptual explanations for why early attachment security should be associated with later development. After all, wasn't Bowlby clear on this issue?

The challenge facing contemporary attachment researchers is not only Bowlby's theory, but also its generativity. Attachment theory was formulated decades ago, at a time when scientific understanding of infancy and early childhood underestimated the cognitive and behavioral sophistication of the young child and the dynamics of early parent–child relationships. There have also been significant advances in behavioral genetics, evolutionary biology, and developmental neuroscience since Bowlby's time, as well as advances in research methodology. It is natural that Bowlby's heirs would update, elucidate, and expand his formulations in ways that he could not anticipate in their efforts to keep the theory current with advancing knowledge. Furthermore, as would be expected of a conceptually innovative approach, Bowlby's theory provides a conceptual umbrella for broad and narrow constructions of the developmental impact of attachment relationships. Grossmann (1999), for example, has identified at least two different conceptualizations of "internal working models" in Bowlby's theory (and two others are profiled below). The breadth of Bowlby's theory offers room for diverse explanations for the impact of early attachment based on the biologically adaptive qualities of attachment relationships, the quality of parent–child interaction, the dynamics of personality growth, emergent social representations, developing stress neurobiology, and other influences. Beyond theoretical breadth, of course, is the fact that subsequent attachment researchers have had their own ideas about the influence of early attachment security, which they have sought to harmonize with Bowlby's formulations.

These are all signs of a vibrant, generative theory. Indeed, it can be argued that today the proper role of Bowlby's theory is not as a source of orthodoxy for attachment theorists (much as Freud's theory was treated in the early decades of psychoanalysis), but rather as a foundation for new thinking about early parent–child relationships. The problem this presents for contemporary researchers, however, is the proliferation of conceptual explanations for why early attachment might be associated with later development. Beyond the casual post hoc explanations offered by researchers for unexpected empirical findings, in other words, there have grown from the foundation of Bowlby's theory various attachment minitheories, with somewhat different views of the nature of the developmental influences arising from secure or insecure early relationships.

In this section, therefore, the goal is to summarize and evaluate several alternative views of the developmental influence of attachment that have become significant in contemporary attachment research. Each approach is discussed with respect to certain key conceptual questions. For which developmental domains is early security likely to be most important, and at what ages? How much should the effects of early attachment be expected to endure, and what mediators might affect its continuing influence? What are the conditions in which attachment should most influence later development? Although most approaches do not provide clear answers to all of these conceptual questions, the purpose in posing them is to clarify our thinking about why early attachment should be developmentally provocative.

Internal Working Models

One of Bowlby's most heuristically powerful formulations is the view that attachment security influences psychological growth through children's developing mental representations, or *internal working models* (IWMs), of the social world. IWMs are based on infants' expectations for the accessibility and responsiveness of their caregivers. These expectations develop into broader representations of their attachment figures, interpretations of their relational experiences, guidelines about how to interact with others, and even beliefs about themselves as relational partners. These mental representations initially enable immediate forecasts of the caregiver's responsiveness, and they expand into broader interpretive filters through which children and adults reconstruct their experience

of new relationships in ways that are consistent with past experiences and the expectations arising from secure or insecure attachments. As a consequence, children choose new partners and behave with them in ways that are consistent with, and thus help to confirm, the expectations created from earlier attachments. IWMs therefore constitute the bridge between an infant's experience of sensitive or insensitive care and the development of beliefs and expectations that affect subsequent experience in close relationships. This concept has been theoretically generative: Bretherton and Munholland (Chapter 4, this volume), Crittenden (1990), Main (1991), Sroufe and Fleeson (1988), Thompson (2006), and Dykas and Cassidy (2011) have each offered contemporary extensions of Bowlby's concept of IWMs.

In Bowlby's formulation, therefore, IWMs would be expected to be most directly associated with the child's capacities to create and maintain successful close relationships (with parents, peers, teachers, and others), establish a positive self-image, and develop constructive social representations of people and of relationships. However, because Bowlby used the IWM concept as a kind of conceptual metaphor rather than creating a rigorously defined theoretical construct, its abstraction has enabled this concept to assume wide-ranging explanatory breadth in attachment research. IWMs have been enlisted to "explain" the association between attachment security and a wide range of correlates, causing some to question whether IWMs constitute a "catch-all, post-hoc explanation" for almost anything to which a secure attachment is found to be associated (Belsky & Cassidy, 1994, p. 384). At the least, this use of the IWM concept has led to considerable uncertainty about its defining features, functioning, and measurement.

One solution to this problem of underspecificity is to clarify what IWMs are and how they develop. Unfortunately, theoretical views diverge among attachment researchers. While some researchers view IWMs as primarily unconscious, prelinguistic perceptual–affective processes akin to the Freudian dynamic unconscious, others regard IWMs as consciously accessible cognitive representations (Grossmann, 1999). Attachment researchers also differ in how IWMs function (Thompson, 2008b). To Dykas and Cassidy (2011), for example, IWMs govern information processing, and individuals with secure attachment histories are more likely to process, in an open manner, a broad range of positive and nega-

tive information related to attachment concerns in a positively biased manner. By contrast, insecure individuals are more likely to defensively exclude information that is likely to lead to psychological pain, such as the child who "forgets" being abandoned in childhood, but if information does not risk psychological pain, they will process this information in a negatively biased fashion. Thompson (2006, 2010) focuses instead on the content of IWMs, arguing that secure individuals are likely to have more constructive representations of other people, more positive expectations for social interaction, greater social and emotional understanding, more positive self-concept, and more advanced conscience development compared to insecurely attached individuals. In this view, IWMs develop in concert with other allied advances in event representation, social expectations, autobiographical memory, self-awareness, and a variety of other social-cognitive skills. In this view, moreover, IWMs are shaped by not only the child's direct relational experience but also secondary representations through conversational discourse with adult caregivers, reflecting the significance of language for providing young children with insight into others' motivations, thoughts, and feelings, relationships, and the self. Rich, supportive conversational discourse, especially about difficult issues, thus becomes another manner by which parental sensitivity is manifested and contributes to the intergenerational transmission of attachment working models (Thompson, 2010).

These alternative formulations are not necessarily mutually exclusive, although they have different implications for how IWMs influence social behavior, their accessibility, and the factors influencing consistency and change in IWMs over time. However, these alternative views share in common the expectation that IWMs change developmentally with the child's conceptual advances and that social experience is formative to the development and potential revision of early IWMs. The field needs greater theoretical development of the IWM construct, building on Bowlby's theory and subsequent advances in developmental science, to guide thinking about their development, behavioral influences, and measurement.

Emergent Personality Organization

Another conceptualization of the influence of early attachment on later development is that attachment security shapes emergent personality processes in infancy and early childhood which,

as they mature and become consolidated, exert a continuing influence on subsequent personality growth. Early attachment is important because it inaugurates adaptive or maladaptive organizational processes in personality that render young children more or less competent in facing subsequent challenges in personality growth.

This view is best articulated in the "organizational perspective" that has been advanced by Sroufe (2005; Sroufe, Egeland, Carlson, & Collins, 2005) and others (e.g., Cicchetti, 2006). This neo-Eriksonian perspective portrays personality growth as a succession of developmental challenges around which critical aspects of personality development are organized. During the first year, of course, the development of a secure attachment is central. In successive years, relevant developmental issues include the growth of an autonomous self in toddlerhood, the acquisition of effective peer relationships in preschool, successful adaptation to school, coordination of friendship and group membership in middle childhood, and identity and self-reflection in adolescence. The successful mastery of earlier developmental challenges is believed to provide a stronger psychological foundation for subsequent challenges because of the internal resources in personality organization that have developed and the supportive relationships on which the child can rely. In this view, therefore, the sequelae of early attachment security vary depending on the salient developmental challenges facing the child at subsequent ages, but in each case a secure attachment provides a better foundation for successful adaptation.

The organizational view is an influential and powerful model for attachment researchers, especially its description of the developmental challenges characterizing each stage of life. Moreover, the fact that these challenges tend to be broadly conceived permits attachment researchers to examine a wide variety of potential outcomes during each subsequent period of development. However, research from this perspective sometimes overlooks the continuing influence of supportive parental care, which may also contribute to the child's developmental adaptation at each stage and its association with early attachment security, as described next.

Consistency and Change in Parent–Child Relationships

In infancy and early childhood, parent–child relationships are described as secure or insecure. By

adulthood, security is often viewed as an attribute of the person. Attachment theory seeks to explain how characteristics of relationships become incorporated into personality. In the developmental transition from attachment-as-relationship to attachment-as-personal attribute, however, the continuing importance of the quality of parent–child relationships should not be overlooked. Stated simply, an early secure attachment provides a stronger foundation for subsequent psychosocial achievements if the sensitive, supportive parental care initially contributing to attachment security is maintained over time (Lamb, Thompson, Gardner, & Charnov, 1985). In that ongoing relationship of parental support, young children continue to enjoy the benefits of parental sensitivity in the rich sharing of parent–child conversation, their cooperative activity in learning and exploration, the emotional understanding and coaching that parents can provide, and in other ways. Children respond to parental support in these ways by becoming increasingly receptive to their parents' influences and socialization incentives as they identify with the adults' goals and behavior (Kochanska, 2002; Waters, Kondo-Ikemura, Posada, & Richters, 1991). However, if the earlier sensitive care that initially inspired a secure attachment is not maintained, there is less reason to anticipate that early attachment security would be associated with later positive behavior. In this view, therefore, the significance of early attachment for later development is contingent, to some extent, on the continuing sensitivity of parental care, especially in a child's early years.

In an empirical assessment of this formulation, Belsky and Fearon (2002) used data from the NICHD SECCYD. Analyzing attachment classifications in the Strange Situation at 15 months and subsequent measures of maternal sensitivity at 24 months, they reported that the children who obtained the highest scores on a broad range of social and cognitive measures at 36 months were those who were securely attached and who subsequently experienced sensitive care. Those performing most poorly at 36 months were insecurely attached in infancy and experienced later insensitive care. Of the two intermediate groups, children who were initially insecurely attached but who subsequently experienced sensitive care scored higher on all outcome measures than did children who were initially secure but later experienced insensitive care. These researchers also found that maternal reports of life stress, depression, social support, and family resources at infant age 24 months helped

to explain why some securely attached infants subsequently experienced insensitive maternal care, and why some initially insecure infants later experienced sensitive care. In each case, declines in maternal sensitivity were associated with the number of negative life events and lack of support that mothers experienced when children were age 2, which were likely to affect children as well as their mothers.

These findings are consistent with those reported by other researchers (e.g., Beijersbergen, Juffer, Bakermans-Kranenburg, & Van IJzendoorn, 2012; Sroufe, Egeland, & Kreutzer, 1990), and with the literature concerning the correlates of stability and change in the security of attachment (see Thompson, 2006, for a review). Taken together, they indicate that early security of attachment interacts with the quality of subsequent experience (particularly sensitive parental care and broader life stresses) in predicting developmental outcomes. Indeed, these findings suggest that later quality of care may be at least as important as early security in predicting later development. The continuing sensitivity of parental care may be especially important in the early years, when IWMs are still rudimentary and personality is taking shape. In this respect, the continuing harmony of the parent–child relationship may constitute a bridge between a secure attachment in infancy and the development of later personality and working models of relationships.

Biological Processes

Biological processes can mediate the association of early attachment with later developmental outcomes. There are three ways this may occur: through species-typical reproductive strategies, the effects of early experience on stress neurobiology, and genetic and epigenetic processes.

First, attachment was viewed by Bowlby (1969/1982) and his followers as an evolved behavioral system to promote the inclusive fitness of the human species. When infants seek the protective proximity of adults, especially when offspring are distressed, alarmed, or in danger, this behavior promotes survival to maturity and eventual reproductive success. This is most likely to occur when adults are sensitively responsive to the infant's cues and secure attachment develops. But patterns of insecure attachment can also be regarded as evolved adaptations to alternative forms of parental care to enable offspring survival, such as avoidance (and potential search for alternative

attachment figures) when the adult is consistently unresponsive, and resistance (and demand for support) when the adult is unreliably responsive (Chisholm, 1999). Viewed in this light, early attachment patterns can be regarded as *ontogenetic adaptations* that function to help individuals to reach maturity but have no necessarily enduring significance.

However, early attachments may instead be *deferred adaptations* that facilitate growth to maturity and also provide a foundation for lifelong behavioral patterns related to reproductive success (Bjorklund, 1997). This view is consistent with life history theory (Chisholm, 1999; Stearns, 1992). In an influential application of life history theory to attachment, Belsky, Steinberg, and Draper (1991) argued that the quality of parental care sensitizes young organisms to the supportiveness or aversiveness of the environment into which the children have been born, and this early experience thus affects not only the security of attachment but other behavioral adaptations related to reproductive success, such as the timing of pubertal maturation, the onset of sexual activity, preferences in pair bonding, and eventual parental investment in their own offspring (see also Simpson & Belsky, Chapter 5, this volume). In essence, children whose early family experiences are characterized by high stress (and consequent insecurity) are likely to develop reproductive strategies that are low-investment and opportunistic, whereas children in low-stress, secure families develop in the opposite manner. This formulation is important, therefore, for defining a somewhat wider range of later outcomes that are affected by early attachment and the quality of parental care. The range of outcomes depends, however, on whether attachment is viewed as an ontogenetic or a deferred adaptation.

Second, whether or not early attachment is viewed in the context of species-typical reproductive strategies, the stress or support of early experiences can have significant biological and behavioral consequences for young children. Several research literatures underscore how early experiences of chronic stress can alter the neurocircuitry of developing stress reactivity and other neurobiological systems, causing children to develop dysregulated patterns of stress responding that can undermine self-regulation, heighten threat vigilance, and blunt attentional focus and cognitive functioning (see review by Thompson, 2015). These early experiences of chronic stress can include enduring maternal depression and an adult's emo-

tional inaccessibility, as well as abusive events, underscoring the reliance of young children on adult solicitude. Consistent with this view, this research literature also shows that social support buffers the effects of stress, and an important manifestation of social support in early childhood is sensitive parental care. Thus one reason that early security or insecurity may be associated with later behavior is that the stress-buffering consequences of a secure attachment, especially for young children in difficult circumstances, enable better emotion regulation, socioemotional, and cognitive functioning. Although there is some evidence that securely attached infants show diminished biological markers of stress responding in the company of their mothers compared to insecurely attached infants (Nachmias, Gunnar, Mangelsdorf, Parritz, & Buss, 1996; Spangler & Grossmann, 1993), more research is needed to determine the broader stress-buffering effects of secure attachment.

Third, genetic characteristics that contribute to a secure or insecure attachment may help to account for the later consequences of that attachment. Thus, for example, a child with a genetic polymorphism associated with impulsive behavior (i.e., the dopamine D4 receptor [*DRD4*] 7-repeat polymorphism) may be more likely to develop an insecure attachment in early childhood and also have later conduct problems. This has, however, proven to be a challenging formulation to study, even in the context of rapid advances in molecular genetics because large samples (typically much larger than those common to attachment research) are required to yield reliable conclusions concerning the association of specific polymorphisms with behavior (Roisman, Booth-LaForce, Belsky, Burt, & Groh, 2013). In light of the failure to confirm significant associations of hypothesized polymorphisms with attachment in at least one large data set (Roisman et al., 2013), and the finding of behavioral genetics research that the genetic component of variability in early attachment is negligible (Roisman & Fraley, 2008), further study is needed to determine whether early attachment is directly associated with specific polymorphisms and, if so, their association with later outcomes.

It is likely, however, that more complex gene × gene and gene × environment interactions characterize the development of attachment security. Moreover, emerging work in behavioral epigenetics suggests that experiential influences may be important to gene expression as they alter the biochemical regulatory system that activates, silences, or changes the transcriptional activity of

genes without altering structural DNA (see Bak-ermans-Kranenburg & Van IJzendoorn, Chapter 8, this volume). As the elegant rat pups studies of Meaney (2010) and his colleagues illustrate, the quality of maternal care is a major influence of early experience associated with gene expression (see Thompson, 2015, for a review). It is there-fore possible to hypothesize that one of the con-sequences of a secure or insecure attachment is its epigenetic effects on gene expression, particularly genes associated with stress reactivity. It remains to be seen whether this is a promising means of understanding the behavioral correlates of early attachment security.

Interim Conclusion

It is apparent, therefore, that attachment research-ers have a variety of conceptual approaches to guide their inquiry into the developmental out-comes of early security. Moreover, these formu-lations differ in important and meaningful ways. They emphasize different outcomes, for example: Some approaches highlight the relational conse-quences of early secure or insecure relationships; others, the representational consequences of at-tachment security; some highlight the influence of attachment on stages of personality growth, whereas others focus on reproductively adaptive strategies. Although some formulations view the continuing influence of parenting practices in childhood as a mediator of the enduring effects of early security, others make no such claim. In sev-eral approaches, the consequences of attachment security are developmentally graded—that is, the effects of attachment depend on when security is assessed and when outcomes are evaluated—but others offer more general predictions. Most of these approaches also expect stronger associations between attachment security and its contempora-neous correlates than those in long-term predic-tive relations, but they differ in the reasons why.

These conceptual differences are important because they have implications for research design (Thompson, 2000; Thompson & Raikes, 2003). If, for example, researchers expect that later be-havior arises from an interaction between early security and the continuing quality of parental care, it is important to measure each of these fac-tors in follow-up studies. Likewise, other potential moderators of this association should also be as-sessed, such as family stress or the child's biologi-cal individuality. Furthermore, the association of

attachment with the *rate of change* in psychosocial outcomes is a potentially important but underex-plored implication of several of the formulations discussed earlier. In the research review that fol-lows, promising examples of research designs such as these are highlighted. Unfortunately, most of the research uses a straightforward pre–post design in which early attachment is associated with out-comes measured later (and sometimes attachment and outcomes are measured contemporaneously) in which potential mediators are unmeasured and causal associations are sometimes obscured. With the current effort to better understand the pro-cesses underlying direct and indirect consequenc-es of attachment security, informed by ideas from developmental neurobiology, life history theory, personality theory, and new ideas about the devel-opment of representation and relationships from developmental science, we can hope that there will be further advances in the use of research de-signs that are equal to the conceptual richness of this field.

Empirical Perspectives

Consistent with these conceptual perspectives, this review of research is organized according to the various outcome domains to which attach-ment security has been theoretically and empiri-cally associated most strongly. The review begins with the relational outcomes anticipated from a secure attachment (warmer subsequent par-ent–child relationships, closer relationships with peers and other partners); then moves on to per-sonality outcomes and emotion regulation. It then examines work on the representational correlates and outcomes of a secure attachment—emotion understanding, social cognition, conscience, and finally self-concept. The biological processes asso-ciated with attachment security have been stud-ied most recently and this chapter touches on the more limited findings that this work has yielded. The prediction of early attachment relative to risk for psychopathology is also an important outcome domain, but it is not considered in this chapter be-cause it is discussed extensively elsewhere in this handbook (see DeKlyen & Greenberg, Chapter 28, and Lyons-Ruth & Jacobvitz, Chapter 29). In light of the enormous empirical literature in this area, this review should be viewed as a selective, not an exhaustive, overview of the major findings and important new directions for research.

Parent–Child Relationship

The strongest and most direct outcome of a secure attachment should be more positive parent–child interaction in follow-up assessments. This expectation has been partially confirmed in a series of short-term longitudinal studies in which securely attached children showed greater enthusiasm, compliance, and positive affect—and less frustration and aggression—during shared tasks with their mothers during the second year (e.g., Frankel & Bates, 1990; Matas et al., 1978), although longer-term associations between infant security and parent–child interaction at ages 3 (Youngblade & Belsky, 1992) and 5 (Van IJzendoorn, van der Verr, & van Vliet-Visser, 1987) were inconsistent. These and other studies suggest that securely attached infants tend to maintain more harmonious relations with their mothers, but (as discussed earlier) this likely depends on consistency over time in the quality of mother–child interaction. Consistency in the quality of parent–child interaction over time is often mediated by intervening events, such as family stress, significant changes in family circumstances (such as parental separation or divorce), or other conditions affecting relational harmony (Thompson, 2006). Viewed more broadly, early security seems to inaugurate what Kochanska (2002) describes as a "mutually responsive orientation" between parent and child that, if maintained, contributes to shared cooperation, the socialization of behavior and values, and the child's enthusiastic responsiveness to the parent's incentives.

If this is so, it suggests that the security of attachment is not only a direct predictor of developmental outcomes but also a moderator of other aspects of parent–child relationships that contribute to those outcomes. Parenting stress may, for example, more strongly predict later problem behavior for children who are in insecure relationships with their parents than for secure children (Tharner et al., 2012). Another example comes from a longitudinal study in which parents' observed power assertion with their 2- to 3-year-olds predicted a composite of measures of children's "resentful opposition to parents" at age 4½, which in turn predicted children's antisocial conduct at age 5½. These associations were observed only for children who had been insecurely attached in infancy, however, and they were absent for securely attached children (Kochanska, Barry, Stellern, & O'Bleness, 2009). Similar findings were reported by Kochanska and Kim (2012). In each study,

the direct associations between attachment and later outcomes were weak or nonexistent. Taken together, these findings suggest that early attachment can either contribute to or buffer the development of broader characteristics of the parent–child relationship—cooperativeness, negative reactivity, responsiveness—to which other child and parent characteristics also contribute.

Consistent with attachment theory, moreover, children's secure or insecure representations of their family relationships also mediate the effects of family processes on developmental outcomes. The research program of Cummings, Davies, and their colleagues illustrate these processes. In one longitudinal study, for example, first graders' insecure representations of their parents' marital relationship explained the association between interparental conflict observed 1 year earlier and children's emotional and classroom difficulties in second grade (Sturge-Apple, Davies, Winter, Cummings, & Schermerhorn, 2008). Heightened interparental conflict was associated with greater insecurity a year later, and with school difficulties a year after that. In a similar manner, the effects of parental depressive symptomatology on second graders' externalizing problems were mediated by children's insecure representations of family relationships assessed 1 year earlier (Cummings, Schermerhorn, Keller, & Davies, 2008). It is not easy to assess young children's representations of relationships, but further attention to these representations as mediating and moderating influences on developmental outcomes is clearly warranted, especially with evidence that these representations may emerge very early (at least when studied using visual expectancy paradigms in infancy; see Johnson, Dweck, & Chen, 2007). In therapeutic contexts, for example, it may not be enough to change the behavior of a parent who has been an inadequate or abusive caregiver without also altering the child's mental expectations for the behavior of that adult (see, e.g., Toth, Maughan, Manley, Spagnola, & Cicchetti, 2002).

Other Close Relationships

Another relational context in which the benefits of early security might be observed is peer relationships. In a meta-analysis, Groh and colleagues (2014) found a robust association between child–mother attachment and peer social competence: Avoidant, resistant, and disorganized children each showed comparably lower levels of peer competence relative to secure children. The

association of attachment and social competence with peers did not vary by children's age or the amount of time between attachment and peer assessments. Interestingly, and contrary to earlier meta-analytic findings, the association was *weaker* when social competence with friends was compared to competence with nonfriends (see Pallini, Baiocco, Schneider, Madigan, & Atkinson, 2014, for similar meta-analytic results). It appears, however, that attachment security is important both to the development of peer social competence and of friendships, although different developmental processes may be involved with each.

Building on these findings, attachment researchers have delved into why these associations exist. Raikes, Virmani, Thompson, and Hatton (2013), enlisting the NICHD SECCYD longitudinal sample, used growth curve modeling to show that children decreased in peer conflict from preschool to first grade, but securely attached children (assessed at 24 months) showed a steeper decline over this period and were lower in peer conflict in first grade. Also, children with greater social problem-solving skills and lower hostile attributions showed lower levels and greater declines in peer conflict. Raikes and Thompson (2008a), using the same NICHD SECCYD sample, showed further that children with early secure attachment showed enhanced social problem-solving skills and diminished hostile attribution bias at 54 months and in first grade. Securely attached children were also less lonely than insecure children, reflecting the self-referential elements of peer social competence (see also Berlin, Cassidy, & Belsky, 1995). These social representations may be shaped by aspects of mother–child interaction associated with a secure attachment. McElwain, Booth-LaForce, and Wu (2011) reported that talk about mental states during play with their 24-month-olds was more characteristic of the mothers of secure than insecure children, and that attachment indirectly influenced the quality of children's friendships at 54 months and first grade through maternal mental-state discourse. In another study with the NICHD SECCYD sample, mother–child affective mutuality at 54 months was one avenue by which early attachment security predicted friendship quality in third grade (McElwain, Booth-LaForce, Lansford, Wu, & Dyer, 2008). The emotional catalysts of mother–child interaction and discourse, children's constructive social representations, their social self-confidence, and greater social skills are among several developmental processes by which

early attachment security can influence later peer relationships. Others meriting further exploration include parents' coaching social skills and the opportunities provided by parents to socialize with other children (see Berlin, Cassidy, & Appleyard, 2008).

As young children's social worlds expand, they develop relationships with a broader range of adults and children, with some adults (e.g., care providers and early childhood teachers) assuming a caregiving role. Relationships with these adults are affected, as we would expect, both by the child's relational history (e.g., mother–child attachment security) and by the specific characteristics of that adult, such as his or her sensitivity and responsiveness (see reviews of this research by Ahnert, Pinquart, & Lamb, 2006; Berlin et al., 2008; Howes & Spieker, Chapter 15, and Williford, Carter, & Pianta, Chapter 41, this volume). Throughout these experiences, children with secure attachments are more competent at creating and maintaining more extensive and supportive social networks, and experiencing greater social support as a result (see, e.g., Anan & Barnett, 1999; Booth, Rubin, & Rose-Krasnor, 1998; Bost, Vaughn, Washington, Cielinski, & Bradbard, 1998). These social and emotional resources are likely to offer secure children many benefits in their interactions with others, further underscoring the indirect, as well as direct, avenues by which secure attachment contributes to psychological well-being.

Personality

The largest and most comprehensive study of early attachment and its developmental consequences is the Minnesota Study of Risk and Adaptation from Birth to Adulthood (Sroufe, 2005; Sroufe et al., 2005). This prospective longitudinal study of children and families in poverty focused on the association between attachment and personality, thus enlisting the "organizational perspective" described earlier. In this study, children were recruited in infancy with their families and followed through age 34 years. Strange Situation observations were conducted at 12 and 18 months; in the years that followed, personality characteristics were assessed regularly through behavioral observations, interviews, observer ratings, self-reports, and semiprojective instruments.

The reports based on this study revealed significant associations between early attachment se-

curity and personality characteristics throughout childhood and adolescence, including relations with measures of emotional health, self-esteem, agency and self-confidence, positive affect, ego resiliency, and social competence in interactions with peers, teachers, camp counselors, romantic partners, and others (see Sroufe et al. [2005] for a detailed discussion, including a list of citations to specific research reports). The researchers concluded that the association between attachment security in infancy and emergent personality owed primarily to the continuing quality of care—or, in the authors' words, "continuity at this age is still primarily at the level of the relationship" (Sroufe et al., 2005, p. 110).

As children matured, moreover, the continuing importance of early attachment was in the context of subsequent developmental influences. Sroufe and his colleagues found that the prediction of later personality was enhanced when early attachment measures were supplemented by other indicators of the quality of subsequent care, which could transform as well as sustain the effects of early security (see Carlson, Sroufe, & Egeland, 2004). Moreover, as time progressed between Strange Situation assessments and later personality outcomes, the effects of early security were more likely to be indirect—mediated and/or moderated by subsequent relational influences (Sroufe, Coffino, & Carlson, 2010). In recognizing that personality outcomes are multidetermined and that attachment security is only one of many constituent influences, in other words, these researchers emphasized that both developmental history and current experience are important in shaping personality growth.

The Minnesota study has been an important and provocative contribution to the research on the consequences of early attachment, and it is one of the most important studies to document long-term associations between attachment security and later personality outcomes. Few other studies have sought to replicate the findings reported from this study, however, but in view of some nonreplications (e.g., Bates, Maslin, & Frankel, 1985; Easterbrooks & Goldberg, 1990), continued efforts to confirm and extend these important findings are warranted. Equally important are future studies that are designed, as was the Minnesota study, to view the significance of early attachment security in the context of subsequent developmental influences on multidetermined personality outcomes (see Sroufe, Chapter 43, this volume).

Emotion Regulation

One of the functions of attachment relationships is to assist in regulating children's emotions, especially emotions that are potentially disturbing or overwhelming (Cassidy, 1994; Thompson, 1994). This is most evident when parents respond sensitively to the distress of their infants, but it is also an ongoing feature of secure relationships, even as children mature and become more capable of emotion self-regulation. Moreover, through the parents' acceptance of children's emotions and willingness to communicate openly about them, parents in secure relationships foster children's developing emotional awareness and scaffold the growth of competent, flexible skills in emotion self-regulation. Thus children in secure relationships are stronger in emotion regulation than are children in insecure relationships, in which parents may be more dismissive, punitive, or critical of the children's emotional expressions (Thompson, 2015).

The relevance of a secure attachment to emotion regulation is apparent from infancy through adolescence, and is observed behaviorally and neurobiologically. In a study of the responses of 18-month-olds to moderate stressors, for example, Nachmias and colleagues (1996) reported that postsession cortisol elevations were found only for temperamentally inhibited toddlers who were in insecure relationships with their mothers. For inhibited toddlers in secure relationships, their mothers' presence helped to buffer the physiological effects of challenging events. Gilliom, Shaw, Beck, Schonberg, and Lukon (2002) reported that boys who were securely attached at age 1½ were observed to use more constructive anger management strategies at age 3½. Securely attached boys were more likely to use distraction, ask questions about the frustration task, and wait quietly than were insecurely attached boys. Contreras, Kerns, Weimer, Gentzler, and Tomich (2000) found that security in middle childhood was significantly associated with children's constructive coping with stress, and that the measure of coping mediated the association between attachment and children's peer competence.

A variety of influences can help to account for the association between secure attachment and more competent emotion regulation skills (Thompson, Virmani, Waters, Raikes, & Meyer, 2013). Securely attached infants can better enact behavioral strategies (e.g., proximity seeking) that

are likely to result in greater emotion management by the mother (Leerkes & Wong, 2012). Mothers in secure relationships are likely to perceive and interpret more sensitively their children's emotions as they arise (Waters et al., 2010), and they are more likely to talk with children about their emotion-related experiences in a richly elaborative manner (Laible & Thompson, 2000; Ontai & Thompson, 2002). Perhaps as a consequence, securely attached children have greater depth in their emotion understanding, including their appreciation of effective emotion regulation strategies (Waters & Thompson, 2014). These intervening influences contribute to an awareness of the multiple avenues by which secure and supportive caregiving relationships foster the growth of emotion regulation skills.

Emotion Understanding

Several attachment researchers have proposed and tested the hypothesis that owing to the greater psychological intimacy they share with the attachment figure, securely attached children should have deeper emotion understanding than insecure children. Several studies have confirmed this to be true in contemporaneous associations with preschoolers using the Attachment Q-Sort (AQS; Laible & Thompson, 1998; Ontai & Thompson, 2002), and in predictive associations with infant Strange Situation classifications (Steele, Steele, Croft, & Fonagy, 1999) or early childhood AQS ratings (Raikes & Thompson, 2006). Secure children are indeed more proficient at identifying emotions in others and, in some cases, empathizing with them (Murphy & Laible, 2013). These studies also indicate that securely attached children are especially skilled at understanding negative emotions and mixed feelings, which are conceptually more complex than positive emotions.

Several studies have sought to understand the relational catalysts of this enhanced emotion understanding. They have drawn on Bowlby's (1973) portrayal of the emotionally more open communication between securely attached children and their caregivers that enables more candid sharing and discussion—particularly of negative emotions, which may be more troubling, disturbing, or confusing to young children (see Bretherton & Munholland, Chapter 4, this volume). Ontai and Thompson (2002) and Laible (2004) found that more secure preschoolers had mothers who, in discussions with them of recent past events and in storybook reading, used a more descriptively rich,

elaborative style of conversation about emotion. These findings are consistent with others indicating that the mothers of secure children use a more elaborative conversation style with offspring, which has also been found to enhance young children's memory representations and autobiographical recall, as well as emotion understanding (Reese, 2002). Mothers in secure relationships have been found to provide greater validation and support of their child's viewpoint and to engage in greater coaching of emotion regulation (Raikes & Thompson, 2008b; Thompson et al., 2013). Indeed, Raikes and Thompson (2006) found that the quality of mother–child conversations about emotion mediated the association between attachment security and emotion understanding in 3-year-olds. In reciprocal fashion, preschool children in secure relationships spontaneously talk about emotions more often in their everyday conversations with their mothers (Raikes & Thompson, 2008b).

When talking about shared events in a rich, interactive, elaborative manner, the mothers of securely attached children are likely to provide them with enhanced understanding of the psychological dimensions of human interaction and of the influence of emotions and other mental phenomena in everyday events (Thompson, Laible, & Ontai, 2003). This is important for at least two reasons. First, as described below, it provides an avenue by which emotion understanding becomes enlisted into other developmental achievements, including social-cognitive understanding and conscience development, in which securely attached children are also more proficient. Second, it promotes in young children the capacity for mentalization that may be at the heart of secure relationships and their intergenerational transmission (see Fonagy Luyten, Allison, & Campbell, Chapter 34, this volume).

Social Cognition

Enhanced understanding of emotions may contribute to the greater social competence of secure children. In a study by Denham, Blair, Schmidt, and DeMulder (2002), multiple measures of attachment security were obtained when children were age 3, along with several measures of emotional competence (including assessments of emotion understanding, emotion regulation, and anger expression). Children were subsequently studied in their kindergarten classrooms to assess peer social competence. The researchers confirmed a direct pathway from early attachment security

to kindergarten social competence and also an indirect pathway through children's emotional competence. The greater emotion understanding of securely attached children benefits their social interactions with peers.

Secure attachment is also associated with other social-cognitive contributors to peer competence. In three studies, Cassidy, Kirsh, Scolton, and Parke (1996) examined the association between attachment and children's attributions concerning peer motivation. Infant attachment classifications were not strongly predictive of preschoolers' responses to story questions concerning the motivations of peer story characters when their negative behavior had ambiguous intent. But when attachment and attributional probes were assessed contemporaneously, securely attached kindergartners and first graders responded as predicted: Secure children were more likely to attribute benign motives to, and insecure children to infer hostile intent in, the story characters. Moreover, these attributions concerning peer motivation were found to mediate the association between attachment security and peer friendship nominations in a sociometric procedure. Ziv, Oppenheim, and Sagi-Schwartz (2004) examined differences in social information processing in Israeli middle schoolers on the basis of infant attachment classifications. Based on children's responses to interview questions after watching a filmed series of peer interaction vignettes, the researchers found that there were no differences on questions concerning the encoding or interpretation of social behavior or generation of alternative responses, but securely attached youth were more likely to believe that peers would respond positively and constructively to competent social initiatives.

Analyzing data from the NICHD SECCYD, Raikes and Thompson (2008a) examined the association between early attachment security (at 15 months in the Strange Situation, 24 months based on the AQS, and 36 months in the modified Strange Situation for preschoolers) and several measures of social cognition when children were 54 months and in first grade. They found that children deemed resistantly attached at 36 months were more likely to make negative motivational attributions to peers as first graders than were secure children (replicating Cassidy et al., 1996). Securely attached children at 24 and 36 months were more likely to identify socially competent and relevant solutions to social problem-solving tasks than were insecure children. This study is noteworthy for several reasons. First, in each of

these predictive outcomes from attachment security, researchers controlled for the influence of parenting (including maternal sensitivity and depressive symptomatology) at multiple assessments to ensure that these were outcomes of early security rather than of continuity in parenting practices. Second, the prediction of these social-cognitive variables was especially strong when children were securely attached at more than one assessment. Finally, infant Strange Situation classifications never predicted later social cognition, perhaps because of the more rudimentary IWMs underlying infant attachments compared to attachments at 24 and 36 months of age (Thompson, 2000).

Taken together, these findings suggest that the enhanced peer social competence of securely attached children derives from a variety of social-cognitive skills related to emotion understanding, attributional tendencies, social problem-solving skills, and social expectations, consistent with Bowlby's IWM construct. But what about social cognition in relation to partners other than peers? There has been much less research on this topic, and existing studies are less clear. With respect to theory of mind, for example, studies of false-belief understanding have yielded a mixed pattern of results, and even when methods were adapted to characteristics of the mother–child relationship, securely attached children have shown no consistent advantage (e.g., Meins, Fernyhough, Russell, & Clark-Carter, 1998; Meins et al., 2002; Ontai & Thompson, 2008). But other social-cognitive capacities may be more relevant to attachment security. In an intriguing study, Corriveau and colleagues (2009) asked whether the security of attachment in infancy would predict children's judgments of the credibility of information provided by the mother compared to an adult stranger more than 3 years later. Three tasks involving ambiguous stimuli were used in which the mother and the stranger offered different interpretations of the stimuli. In two tasks, either adult could plausibly be correct, but in the third task, the stranger was more clearly correct than mother. Securely attached children accepted the mother's judgment when she was plausibly correct but used the stranger's information when it was apparent that the stranger was correct. By contrast, insecure-resistant children relied on the mother's information in all tasks, and insecure-avoidant children did not use the mother's judgments even when she might be accurate. Studies like this underscore the value of further studying both person-specific and generalized social understanding derived from

mother–child relationships and the influence of attachment security on this understanding.

Conscience

Conscience concerns the young child's development and application of generalizable standards of conduct, and is thus viewed as an early foundation of moral development. Kochanska (2002) has argued that one of the motivators of conscience development is the young child's commitment to maintaining a relationship of warm, mutual responsiveness with the caregiver. In this respect, a secure attachment might be expected to be associated with greater compliance and cooperation, and this association has been confirmed (Kochanska, Aksan, & Carlson, 2005; Laible & Thompson, 2000). Kochanska (1995) has also shown that a secure attachment is especially influential for children who are temperamentally relatively fearless; for these children, the emotional incentives of the mother–child relationship (rather than the anxiety provoked by discipline practices) motivate conscience development.

As in research on emotion understanding, researchers have also sought to understand in more depth the role of attachment, in relation to other developmental influences, in the growth of conscience. Kochanska, Aksan, Knaack, and Rhines (2004) reported that for securely attached children (assessed in the Strange Situation at 14 months), the parents' responsiveness and use of gentle discipline (from 14 to 45 months) predicted later conscience (assessed at 56 months in assessments of morally relevant behavior and thinking), but that for insecure children, there was no such association. These findings complement other studies, reviewed earlier, documenting a negative developmental trajectory from parental power assertion to child noncompliance that was observed only for insecurely attached children, and suggest that parental practices have differential emotional impact depending on the security of child–parent attachment. Indeed, there is further longitudinal evidence that a secure attachment helps to amplify the benefits of early, positive parent–child influences for later conscience development (Kochanska et al., 2010). Other research shows that mothers of secure preschoolers are more likely to use justifications and compromise and less likely to aggravate conflict during disputes with their children (Laible, Panfile, & Makariev, 2008).

These findings offer a new perspective on early moral development. Contrary to the traditional view that young children comply with their parents to avoid negative sanctions, these studies suggest that the positive incentives of mutually cooperative, secure parent–child relationships are motivationally very important in conscience development. Moreover, several studies suggest that when mothers focus attention on people's feelings and needs, rather than rules and the consequences of breaking them, conscience development is enhanced because it enlists young children's capacities for emotion understanding (Laible & Thompson, 2000, 2002; also see Thompson & Winer, 2014). Taken together, these findings suggest that a new approach to early moral development is needed to better recognize the humanistic, relational foundations of early conscience (Thompson, 2012).

Self-Concept

Bowlby's (1969/1982, 1973, 1980) argument that attachment security influences young children's self-concept, particularly their conceptions of themselves as loved and lovable, has guided several research inquiries into attachment and self-concept. Cassidy (1988) found that securely attached 6-year-olds described themselves in generally positive terms in a puppet interview but were capable of admitting that they were imperfect (i.e., they were flexible or "open"). Insecurely attached children either revealed a more negative self-image or resisted admitting flaws, and similar results were reported by Verschueren, Marcoen, and Schoefs (1996). Clark and Symons (2000) also found that attachment at age 5 (on the AQS) was significantly associated with the positivity and openness of children's responses to a contemporaneous puppet interview, but not with self-esteem, although a previous assessment of attachment at age 2 (also using the AQS) was not associated with either measure. Goodvin, Meyer, Thompson, and Hayes (2008) found that AQS attachment at age 4 predicted the positivity of young children's self-concept at age 5, even when they controlled for contemporaneous attachment security. Secure children also viewed themselves as more agreeable and as expressing less negative affect. Doyle, Markiewicz, Brendgen, Lieberman, and Voss (2000) found that secure attachment was associated with a more positive self-concept in young adolescents.

Each of these studies measured explicit self-concept in young children. Only two studies have measured implicit self-concept. One was by Colman and Thompson (2002), who presented

5-year-olds with both manageable and difficult puzzle tasks. Children with lower AQS security scores spontaneously expressed more self-doubt about their abilities or negative self-appraisals during *both* tasks, such as saying, "This is too hard for me." The second study was by Cassidy, Ziv, Mehta, and Feeney (2003) who examined the association between security and children's preferences for receiving positive or negative feedback about the self. They found that a more secure attachment was associated with seeking more positive feedback about the self, and that this association was mediated by global self-worth.

Thus, research on implicit self-concept is consistent with the findings of young children's explicit self-descriptions in highlighting the more positive self-representations of securely attached children. More research is needed into *why* attachment has these associations with self-concept. One clue comes from the previously described study by Goodvin and colleagues (2008). In this sample, a composite measure of the mother's emotional stress was negatively associated with her child's positive self-concept. In another longitudinal clinical study, maternal depression when children were 20 months old was associated with young children's concurrent attachment insecurity and their insecurity at 36 months, which in turn predicted negative representations of the self at 48 months (Toth, Rogosch, Sturge-Apple, & Cicchetti, 2009). Each study supports a view of more supportive parent–child relationships (and better parental functioning) contributing to more positive self-representations by young children.

Conclusion

This review does not exhaust the range of correlates and outcomes of early attachment security that have been studied. But by focusing on these, it is possible to evaluate the outcomes most germane to Bowlby's theory and to derive lessons for the future of attachment research.

What Have We Learned?

In the broadest sense, the picture that this vast empirical literature yields is both encouraging and daunting. On the one hand, there is a broader, more coherent network of correlates and outcomes of early attachment security than has ever before been revealed. This literature indicates, usually in replicated findings, that children with a secure attachment history are capable of developing and maintaining more supportive relationships, especially with their parents and with peers, than are insecure children; they develop a variety of desirable personality qualities in childhood and adolescence; they are more likely to exhibit constructive forms of emotionality and emotion self-regulation; and they exhibit more positive self-regard in both explicit and implicit assessments of self-concept. Some of the more interesting recent findings come from studies of the representational correlates and outcomes of attachment security. Securely attached children exhibit greater emotion understanding, demonstrate more competent social problem-solving skills, assume more benign attributions for peers' motivations in ambiguous situations, are more advanced in conscience development, and are less lonely than are insecurely attached children.

Early security clearly makes a significant difference for psychological development, but more progress is needed in the design of research to elucidate *why* this difference occurs. There are clues. Early security is more strongly associated with psychological sequelae when children continue to experience sensitive parental care, and security is maintained over time. The content and quality of mother–child conversation may be part of that sensitive parental care, with the mothers of secure children conversing with their offspring in more elaborative and psychologically supportive and informative ways. Attachment security may also mediate the effects of other parenting practices on early psychological development and contribute to trajectories of positive or negative parent–child interaction and child well-being over time. Early secure or insecure attachment may thus be especially predictive of later psychological outcomes when it is considered in the context of broader aspects of parental care and family life. The social-cognitive advantages of children with a secure attachment history are important mediators of their social competence, especially with peers and other relational partners. In addition, how secure and insecure children perceive themselves and their own characteristics may be another significant contributor to their better psychological functioning. Attachment security may be important not only for how young children think but also how they attend to, process, and remember events related to their relational experiences. Finally, research in this field is increasingly examining three potentially important mediators of the influence of attachment on

psychological development: the effects of attachment security as a biological buffer of stress, the influence of supportive parental care on the development of self-regulatory capacities, and the value of a secure attachment for the growth of psychological understanding and mentalizing ability.

Future Directions

These important clues to how early attachment influences later psychological functioning constitute an agenda for future study. Future advances in understanding the association between early attachment and psychological growth will occur as studies are designed to examine more incisively the intervening processes that connect them, consistent with this third stage of research on early attachment and its sequelae. Carefully designed longitudinal research and analytical designs that enable the detection of direct and mediated associations between attachment and later outcomes are likely to be important contributions to that productive future research literature. In addition, consistent with some of the more exciting research insights of this field, exploration of continuing parental influences (e.g., conversational fluency, discipline practices), contextual demands (e.g., family stress and disruption), biological processes (e.g., stress reactivity, genetic and epigenetic influences), representational processes (e.g., self-referential beliefs, motivational influences), and self-regulatory processes mediating attachment and its outcomes will be especially informative. Moreover, the one study that has used growth curve modeling to examine the association of attachment security with the *rate of change* in psychosocial functioning (Raikes et al., 2013) offers a model for how other researchers can exploit the benefits of longitudinal research to elucidate the impact of attachment on psychological development.

Further understanding of these developmental processes will benefit from continued use of meta-analysis to elucidate the strength of the associations between attachment and developmental outcomes, and the various influences that can mediate these associations. Moreover, research in this field will continue to benefit significantly from the secondary analysis of large-sample longitudinal data sets in which attachment measures have been included. Along with this benefit, however, there are two cautions. The first is that the availability of these data sets further encourages attachment researchers to examine atheoretically the predictive association of attachment with any and all possible outcomes (after all, the data are available

for doing so), then to devise post hoc explanations for the significant associations that emerge, often without consideration of whether direct or mediated explanations are best warranted. This data-driven approach is problematic for the construction and clarity of attachment theory. The second caution is that researchers' strong reliance on the NICHD SECCYD data set compels greater attention to replication and confirmation of findings yielded by a single, albeit uniquely informative, data set.

This chapter has devoted comparable attention to theoretical and empirical perspectives because their integration has been generative for attachment research. Theory development remains, therefore, another important future goal. "All good things go together" is not a sophisticated developmental theory, but the ever-widening network of outcomes to which attachment security has become associated and the failure to attend to discriminant validity of the attachment construct combine to undermine the clarity of what a secure attachment means and contributes to early development. If attachment theory does not have a coherent explanation for this variety of outcomes, and cannot provide a clear account of what outcomes should *and should not* be related to early security, the integrity of the attachment construct is in doubt because theory development cannot be bootstrapped by findings of empirical research alone without potentially holding attachment theory accountable for formulations it should not and perhaps cannot embrace. Future research must be designed to examine, therefore, in a theory-driven manner, both the convergent and the discriminant validity of the attachment construct, and the extent to which the associations between attachment and other behaviors derive from theoretically predicted mediators (see also Sroufe, Chapter 43, this volume).

Attachment research continues to be vigorous and exciting decades after Bowlby's theory (Cassidy, Jones, & Shaver, 2013). These new avenues to explore are one reason why.

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