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**Concluding Commentary**

**Assembling the Puzzle: Interlocking Pieces, Missing Pieces, and the Emerging Picture**

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A recent comprehensive exam given by a prominent attachment scholar posed this question: *Attachment theory has been influential for a longer period than most other psychological theories, now more than 50 years, and it shows no signs of diminishing importance. What can account for its enduring influence?* Although we might sympathize with the student taking this exam, the chapters of this volume answer the professor's query well. The continuing generativity of attachment theory derives from the breadth of its relevance to issues in developmental, social, and personality psychology, its broad applications to clinical and social policy concerns, and its capacity to address classic questions in psychology. Moreover, the theory has life-span applications, connects behavioral with representational processes, and has introduced new measurement approaches. Finally, no small reason for the theory's endurance has been the capacity of attachment researchers to pose new, interesting questions that expand the reach of both theoretical and empirical inquiry. Each of these aspects of attachment theory is reflected in the pages of this volume. These chapters also illustrate some of the contradictions, inconsistencies, limitations, and unanswered questions that will be important for the next generation of attachment scholars to address.

In this concluding commentary, we reflect on the chapters that addressed each of the nine fundamental questions that organize this volume. Our primary purpose is to note points of convergence and divergence, describe what we can (and cannot) conclude about each question, and identify future directions for theory and research. Like assembling a jigsaw puzzle, our goal is to identify the emerging picture created collectively by these contributors and also to consider what is still missing. In the final section, we offer our own proposals for what will significantly advance the field by discussing the need for a truly life-span theory of attachment with a focus on the development of internal working models.

**Defining Attachment and Attachment Security**

Few questions are more central to attachment theory than the two that introduce the opening section of this book: *What kinds of relationships "qualify" as attachment relationships? What are the origins and/or nature of security?* The authors who addressed these questions represent different areas of psychology and examine different types of attachment relationships at different stages of life.

In the first chapter, Sroufe initiates a through-line of this collection of essays as a whole. He describes the unique features that define attachment relationships in both children and adults, reminding us that Bowlby viewed infant-caregiver attachments as prototypical, a view that strongly influenced the developmental study of attachment. Sroufe also emphasizes that attachments involve specific relationships and that we need to discover how early attachment experiences are combined with later ones to shape secure or insecure attachment orientations in adulthood. Fearon and Schuengel discuss intersections between Hinde’s (1997) conceptualization of relationships and Ainsworth’s (1991) view of attachment as a specific kind of affectional bond. They also note that the presence of attachment behavior does not necessarily imply the presence of a deep affectional bond. Likewise Sroufe and Shaver and Mikulincer note that there can be strong emotional ties between individuals that are not attachments. Ahnert focuses on patterns of attachment between children and child care providers (caregivers), how these attachments may develop differently than child-parent attachments, and how the quality of child-caregiver attachment (or child-teacher closeness) is associated with children’s cognitive performance, behavioral adjustment, and stress management in educational settings. Shaver and Mikulincer discuss the criteria for attachment figures and attachment relationships in adulthood and summarize the signature cognitive and emotional features of security in adults. Focusing primarily on adult patterns of attachment based on the Adult Attachment Interview (AAI), Jacobvitz and Hazan review the developmental origins of attachment security in adults, the kinds of relationships that represent bona fide attachments, and how early attachment patterns may change as individuals move toward adulthood. Aviles and Zeifman encourage future attachment scholars to investigate a wider range of close relationships, particularly platonic friendships, which might fulfill attachment functions in adulthood similar to those fulfilled by romantic pair-bonded relationships.

Several core themes reverberate across the chapters in this section. To begin with, regardless of relationship type (e.g., child-parent, child-caregiver, adult romantic partners, close friends), all of the authors tend to define attachment relationships as well as their basic functions similarly. Early in life, attachments between children and their primary caregivers are viewed as a relationship-specific construct (Sroufe) that becomes a more trait-like orientation by adulthood. Attachments are also conceptualized as a special type of relationship that serves the primary attachment functions of safe haven and secure base provision. Additionally, most adult attachment scholars emphasize proximity maintenance as a key attachment function (Simpson, Rholes, Eller & Paetzold, 2021). Attachment relationships are also defined by the preference for specific attachment figure(s) in certain situations, particularly when an individual is distressed, is separated from, or loses an attachment figure. Finally, attachments patterns (in children) and orientations (in adults) differ in their quality (i.e., whether they are secure or insecure, including whether they are higher/lower on attachment avoidance and/or anxiety), but not necessarily in their strength. Thus, for both children and adults, there is reasonably good consensus regarding what constitutes an attachment relationship and what promotes a sense of security.

There is some divergence, however, in how the authors conceptualize and measure attachment. Developmental and clinical scholars, for example, most frequently use “indirect” measures (e.g., the AAI) to examine how adults reflect on their childhood relationships with their parents, whereas most social/personality scholars investigate how adults directly perceive and report on the nature of their prior or current adult romantic relationships. These differences may partly explain why these different measures (e.g., the AAI and the adult romantic attachment measures) correlate rather weakly (topic 2), an issue we discuss at greater length in the next section. There is also variability in how the authors portray development and change in attachment over the life course, ranging from models that emphasize the formative influences of infant-caregiver attachment (Sroufe) to those emphasizing that life stress, therapy, and other experiences can modify adult attachment representations (Jacobvitz & Hazan) to the view that adults acquire multiple representations of relationships that shape their overall attachment orientation (Shaver & Mikulincer; see Collins, Guichard, Ford, & Feeney, 2004). These are significant differences important to attachment theory.

A final theme touches on the evolutionary origins of attachment theory (Bowlby, 1969/1982; Simpson & Belsky, 2016). Most attachment theorists acknowledge that the attachment system evolved because it helped infants and young children survive the many perils of childhood (Ainsworth, 1991; Bowlby, 1969/1982). Simply surviving childhood, however, means nothing in terms of reproductive fitness unless individuals also reproduce and successfully raise their own children to reproductive age. Given the numerous challenges and demands of our ancestral environments, sustained biparental care (Fletcher, Simpson, Campbell & Overall, 2015; Zeifman, 2019) along with alloparental care (Hrdy, 2009) was almost certainly needed to raise children to reproductive age. Thus, the cognitive, affective, and behavioral features of the attachment system, which initially evolved to increase survival during childhood, may have been exapted (i.e., “borrowed” for another purpose) to facilitate other attachment bonds later in life, particularly those between mates who needed to remain together long enough to rear their children successfully. Although neither Bowlby nor Ainsworth discussed this possible additional evolutionary force, it most likely undergirds adult romantic attachment bonds. This supposition is supported by recent evidence indicating that adult romantic relationships and childhood attachments involving parents share similar neurochemical processes (e.g., Feldman, 2017).

Collectively, the authors of this section pose a variety of insightful questions that deserve closer theoretical and empirical attention. Chief among these is the question of how do early attachment experience “combine” with later attachment experiences to form attachment orientations in adulthood. How, for instance, are attachment experiences beyond elementary school incorporated into working models, which then shape adult attachment security, avoidance, and anxiety? How, and in what contexts, do these adult orientations guide a person’s behavior? Additional questions raised by the chapters in this section are also worthy of further scrutiny. For example, if attachment behaviors do not always reflect or result in the development of strong affectional bonds, why do some relationships become deep affectional bonds whereas others do not? What are the critical conditions needed for attachment bonds to form in children, adolescents, and adults, especially given the varied conditions in which these relationships develop, including orphanage care, foster care, child care, and parental care? How do different motivational systems, such as attachment, mating, and caregiving, independently and/or jointly influence how people relate to their romantic partners, their children, and other significant people in their lives? How do attachment bonds form between close, platonic friends? Are the neurochemical processes underlying these relationships the same as those for romantic pair-bonded relationships? Addressing these questions will advance multiple aspects of attachment theory and research.

**Measuring the Security of Attachment**

From its inception, methodological advances have propelled the attachment field. Bowlby's theory was influential before Ainsworth's Strange Situation, but the significance of attachment theory was certainly magnified by the development of this procedure and the organizational view of attachment it instantiated. So important is the Strange Situation to attachment research that, for many, it is the gold standard for developmental research, with subsequent measures of attachment being convergently validated by their concordance with attachment classifications derived from it. Hazan and Shaver's (1987) development of an adult romantic attachment questionnaire and the creation of the Adult Attachment Interview (Main, Kaplan, & Cassidy, 1985) both inaugurated profound advances in attachment research in adulthood. Indeed, the history of attachment research is written by advances in the measurement of attachment, in part because advances in assessment have benchmarked developing conceptions of attachment and its behavioral manifestations.

The chapters in this section do not profile all of the available attachment measures, but rather survey the range of measurement approaches sufficiently to frame some of the important issues of this field. The authors were asked to discuss: *How should attachment security be assessed?* and *What are the advantages and challenges of alternative measurement approaches?* We were also interested in whether there is a central element of attachment relationships captured by each of these diverse approaches. Contributors to this section profiled narrative assessments and self-report questionnaires (Crowell), representational measures (Waters), and priming methods (Gillath and Ai), with broader reflections on the strengths and limitations of categorical (Steele and Steele) and dimensional (Raby, Fraley, and Roisman) assessments of attachment.

One clear conclusion that frames the discussion of attachment methodology is that different assessments are not highly correlated, either concurrently or across time. Crowell states the matter directly with respect to the Adult Attachment Interview [AAI] and the Experiences in Close Relationships [ECR] Scale: "[al]though both measures predict important aspects of close relationship functioning in adulthood, they do not predict the same outcomes in the same ways." Waters offers a similar conclusion with respect to the AAI and secure base script methods, even though they are significantly but modestly correlated (see also Mikulincer & Shaver, 2016, for a broader review). Viewed longitudinally, there is a weak and often nonsignificant association between different attachment assessments across developmental periods (Booth-Laforce & Roisman; Fraley & Dugan), even though this confounds measurement consistency with the stability of attachment over time. Thus, attachment quality indexed by one well-validated measure is not necessarily highly convergent with attachment quality indexed by another.

This conclusion is unsurprising in some respects. After all, the measures profiled in this section differ significantly in measurement approach (e.g., behavioral vs. self-report vs. narrative interview vs. semiprojective probes) and thus in the criteria that distinguish different attachment patterns or orientations. Attachment is behavioral, representational, and intrapsychic, and current measures differentially index these different features of attachment functioning. It is also true that existing measures were created for different purposes, such as studying attachment in infants, children, or adults, in typical versus at-risk samples, or to broaden inquiry by activating security through priming. Finally, different measures sometimes assess different attachment relationships using different conceptualizations of the internal working models associated with these relationships.

The conclusion that different attachment measures do not necessarily share considerable common variance is consequential, however, for at least two reasons. First, conclusions concerning some issues that are central to attachment theory, such as stability and change in the security of attachment (topic 4) and the continuing influence of early attachment (topic 5), both discussed in more depth below, must be qualified by the particular measure(s) of attachment on which research conclusions are based. As we note in our discussion of stability and change, for example, the strongest conclusions concerning the consistency of attachment across relationships and time are those that are based on the same attachment measure assessing the same relationships (or the same type of relationship) on each measurement occasion. Second, different measures of attachment are also likely to have somewhat different correlates because they capture different (as well as common) sources of variance. Taken together, generalizations across different measures about the nature of attachment security must be made cautiously.

In light of this, how should attachment researchers decide on their measurement approach? One answer is that it depends on which aspects of attachment functioning are of greatest interest. Priming is an obvious example of a methodology uniquely suited to eliciting secure or insecure representations, but priming may not be as useful to those who are interested a person's characteristic attachment orientation, and it is not suitable for studying infants and young children. Representational measures differ in the depth of their assessment, ranging from self-reports to script methodology to interview protocols designed to "surprise the unconscious" (Main & Goldwyn, 1984). Moreover, measures of attachment differ in whether they are designed to assess partner-specific attachment functioning or a person's generalized attachment orientation. Crowell's conclusion concerning the AAI and the ECR—that these are different measures and do not predict the same outcomes in the same ways—generalizes to the full range of attachment assessments.

A broader answer is that the psychometric characteristics of attachment measures should guide researchers' choices. As Raby, Fraley, and Roisman note, dimensional approaches have advantages over the traditional categorical orientation of developmental attachment research because they maximize variance and enable enhanced statistical power. On this basis, citing the field's "reliance on evidence drawn from underpowered studies," Roisman and Groh urge a revisiting of fundamental methodological commitments such as the categorical classification system. At the same time, while acknowledging the psychometric benefits of dimensional measures, Steele and Steele argue, consistent with the organizational view (Sroufe & Waters, 1977), that differences in attachment are fundamentally differences in quality rather than quantity. To illustrate, they point to infant disorganization and adult unresolved loss and trauma, which are not easily captured by current dimensional approaches. According to them, a categorical approach will always be part of thinking about variation in attachment. An important subtext to this colloquy is the question of whether attachment studies are primarily modeling typical variations in attachment functioning or clinically-relevant variations because, for the latter, variability in the origins and consequences of attachment organization is especially multidimensional and complex. Thus here, again, the choice of measurement strategy may depend on the goals of study.

An additional appeal to the use of dimensional measures of attachment is that they permit comparability of measurement across different stages of life by establishing a two-factor structure to variability in attachment -- one dimension tapping attachment anxiety and a second dimension tapping attachment avoidance -- from infancy through adulthood. However, Waters’ script methodology can also be used across a wide developmental range. He proposes that secure-base scripts develop through dual processes of elaboration and generalization, with the result that early individual differences in secure base script knowledge are categorical in nature (secure vs. insecure), but then develop into more continuous dimensions (reflecting different degrees of security). Testing this view in future research will help inform the largest issue raised collectively by the chapters of this book: the need for a model outlining how internal working models develop and change across the life-course. In addition, we urge attachment researchers to make explicit the theoretical assumptions underlying the design and use of attachment measures. These assumptions are central to how measures are designed and interpreted, and should be of fundamental importance to attachment researchers.

**The Nature and Function of Internal Working Models**

We asked the authors of chapters for this section to consider these key questions: *What are internal working models?* and *How do they operate?* Our goal was to determine whether there are common elements to diverse conceptualizations that might lead us toward a more theoretically consistent portrayal of working models. Doing so could help us identify the most interesting and important issues that could inform a lifespan understanding of internal working models.

The five chapters on this topic -- as well as other chapters in the volume -- attest to the diverse portrayals of internal working models (IWMs) in attachment theory. According to some views (e.g., Waters, Waters, & Waters), IWMs are representations that are generalized across a person's experience of relationships, whereas to others (e.g., Girme & Overall), IWMs are relationship-specific and hierarchically organized. Mikulincer and Shaver refer to "a person's network of attachment-related memories and working models," and Gillath and Ai describe how this characterization is enlisted into priming methods in adult attachment research. To Cassidy, IWMs develop primarily to ensure safety in the context of threat, whereas Thompson emphasizes much broader functions of IWMs for self-understanding and relational interactions. Some descriptions of IWMs connect their development to other cognitive and social-cognitive processes, particularly cognitive scripts (Waters, Waters, & Waters; Cassidy) and autobiographical memory and emotion understanding (Oppenheim & Koren-Karie; Thompson), but others do not. There is also variability in whether IWMs are viewed as functioning primarily in a nonconscious or preconscious manner (Cassidy; Dykas & Cassidy, 2011; Oppenheim & Koren-Karie) or as operating primarily consciously to influence social information processing (Thompson).

Are all these attachment researchers referencing the same construct? As noted in several chapters, Bowlby's concept of the internal working model was not well developed, leaving considerable uncertainty concerning his views of its defining characteristics, development, and proneness to stability over time. With researchers drawing on different aspects of Bowlby's theory to flesh out a portrayal of IWMs suitable to their work, it is easy to see how one's conception of mental working models can be much different from another's (Duschinsky, Bakkum, Mannes, Skinner et al., in press).

We might ask, therefore, what features each of these different formulations hold in common. Three come to mind. First, attachment researchers agree that IWMs arise from relationships with attachment figures and guide interactions with them. Furthermore, mental representations concerning an attachment figure's (a) availability as a secure base for exploration and (b) safe haven when threatened are prominent in working models based on attachment relationships, with some adding to these (c) mental representations of the attachment figure's proximity. Throughout life, these seem to be core elements of how individuals represent what they can expect from their attachment figures. Although attachment relationships extend representationally beyond these core features and IWMs are likely to become more complex, these features of internal working models are fundamental.

Second, attachment researchers agree that IWMs change developmentally and with relational experience. This is not an inconsequential consensus. Bowlby's concept of mental working models draws on object relations theory and the Freudian dynamic unconscious. Thus, one aspect of his IWM construct is a very early developing, prelinguistic perceptual-affective representation of caregiving experience that remains influential throughout life (Grossmann, 1999). But Bowlby also recognized the changes that occur in working models with the development of language, conceptual growth, and experience. This recognition has predominated in attachment theory. In his chapter for topic 2, Waters elaborates this view to argue that Bowlby's concept of IWMs "contain multiple constructs that unfold in a particular developmental sequence, change in latent structure, and undergo extensive generalization and elaboration across development." A number of chapters describing developmental changes in IWMs (Allen; Ahnert; Thompson) and the evolution of IWMs based on relational experience (Fraley & Dugan; Arriaga & Kumashiro; Girme & Overall) attest to this dynamic quality.

Thus, in our view, one of the most interesting and important issue for further study concerns the multifaceted ways that relational experiences influence growth and change in IWMs. Some researchers emphasize the content and quality of parent-child discourse on developing IWMs (Bretherton & Munholland, 2016; Oppenheim & Koren-Karie; Thompson), while others underscore how new relational experiences lead to the creation, consolidation, or revision of working models (Paetzold, Rholes, & George; Arriaga & Kumashiro; Girme & Overall), and there are other views (e.g., Kerns & Brumariu, 2016). These perspectives would benefit from greater cross-fertilization, especially as they contribute to conceptually unpacking the influence of relational experiences on attachment-related mental representations. One of several themes cutting across the literature as well as many of the chapters in the book is that different communication patterns and/or attachment “strategies” (e.g., Main, 1990) characterize secure and insecure attachments, particularly in terms of their development (Cassidy; Thompson), in the way people respond to loss (Shaver & Mikulincer ), and in adult-based psychotherapy processes (Talia & Holmes). Also meriting further reflection are the interrelated questions of (a) how other aspects of the relationships that individuals share with their attachment figures (Fearon & Schuengel), especially those not associated with secure base and safe haven functions, affect attachment-related IWMs and (b) the potential impact of additional relational but non-attachment working models (e.g., Knee & Petty, 2013).

Third, attachment researchers agree that IWMs underlie a range of social, personality, and relational characteristics. They disagree, however, regarding the breadth of these associations -- or, more specifically, in the breadth of characteristics associated with attachment that can be attributed to the influence of IWMs. This has led to some of the more serious criticisms of the IWM construct, including Hinde's (1988) concern that IWMs can "too easily explain anything" and Belsky and Cassidy's (1994) charge that IWMs constitute a "catch-all, post-hoc explanation" for any research finding linking attachment to other behavior. As research evidence documents a wider variety of external correlates of attachment, the IWM construct has consequently also expanded to "explain" these associations.

It is important to recognize, therefore, that there are many ways that attachment may be associated with other behaviors, independently of the functioning of IWMs. Chapters in this volume draw attention, for example, to the influences of attachment on physical health (Ehrlich & Cassidy), developing neurobiology (van IJzendoorn, Tharner, & Bakermans-Kranenburg), and the effects of environmental challenge and stress (Szepsenwol & Simpson). Harsh or supportive parental relationships that shape attachment may also contribute to other characteristics of individuals (e.g., self-esteem), and attachment security may moderate the effects of these relational influences (e.g., Kochanska & Kim, 2012). Attachment relationships may also foster a range of capabilities -- social skills, sense of efficacy, cognitive competencies, self-regulation -- that influence behavior independently of working models. In this light, a recommendation for the future is that, whenever IWMs are enlisted to explain empirical findings, researchers should specify precisely the aspect or understanding of IWMs that forms the basis of their explanation.

Consideration of the multiple avenues through which attachment can be influential suggests that understanding the association of IWMs with other social and personality characteristics requires not only a clear theoretical conceptualization of IWMs, but also the consideration of alternative explanations. For example, a direct association between the security of attachment and reading achievement in children could be construed as reflecting a secure IWM of the self, but researchers must also measure alternative mediators -- such as parent involvement with schoolwork and positive child-teacher relationships -- that are consistent with attachment theory and may be influential independently of IWMs (Sroufe, Egeland, Carlson, & Collins, 2005). It is easy to enlist IWMs as explanations of attachment-related behavior because they are usually unmeasured and thus flexible in application. We applaud the fact that studies of attachment outcomes are increasingly examining not only the direct associations of attachment with other behaviors, but also carefully conceptualized and measured mediators and moderators (Thompson, 2016).

Including direct measures of IWMs in the research design would, of course, permit examination of their mediating influence most effectively. One reason why some contemporary attachment researchers are drawn so strongly to script theory is that it presents a straightforward way of measuring cognitive processes related to IWMs. However, the usefulness of these and other emergent measures depends on their association with a well-developed model of IWMs that specifies the inclusive and exclusive features of the construct being measured (see Waters, Waters, and Waters). Thus, the development of theory and measurement of IWMs must proceed in concert.

Finally, we draw attention to another cross-cutting theme concerning developmental change in attachment and the IWMs with which it is associated. Many social/personality attachment scholars believe that, compared to young children, adults possess a more extensive network of working models that reflect the unique types of attachment relationships they have experienced across life (Fraley, 2019; Girme & Overall, this volume). This raises the possibility that specific working models within adults’ more elaborate cognitive networks might become activated and guide their behavior in response to different attachment-relevant cues, events, or situations in adulthood. One major gap in the attachment literature involves understanding when (i.e., in response to what kinds of cues, events, or situations) certain types of working models uniquely predict certain attachment-relevant outcomes. For example, despite the fact that the AAI measures representations of how a person was treated by their parents during childhood -- rather than how they have been treated by their romantic partners -- greater security on the AAI uniquely predicts the quality of support that adults give to their romantic partners in stressful situations (e.g., Simpson, Rholes, Oriña & Grich, 2002). In less stressful contexts, however, adult romantic attachment measures are stronger predictors than the AAI of different attachment-relevant outcomes, such as overall marital satisfaction and the quality of daily relationship functioning (Feeney, 2016; Mikulincer & Shaver, 2016). These findings suggest that adults possess a richer and more differentiated network of working models that reflect different types of attachment relationships forged at different developmental periods. Understanding the developmental processes leading to this, and their implications for the functioning of IWMs, is a major task for the future. We return to this theme at the end of the chapter.

**Stability and Change in the Security of Attachment**

Bowlby (1979, 1980) viewed both stability and change in attachment patterns (in children) and orientations (in adults) as basic processes that depended on continuity or changes in a person’s environment, particularly their interactions with attachment figures. According to Bowlby, assimilation processes sustain attachment patterns/orientations, whereas accommodation processes allow them to change, primarily when new, significant interpersonal experiences or events contradict existing working models.

The five authors in this section of the book addressed two questions: *Should we expect attachment security to remain consistent over time? Is there evidence for stability in attachment security?* Fraley and Dugan discuss how Bowlby and other attachment theorists conceptualize stability and change in attachment, the reasons why it is often difficult to draw clear inferences about attachment stability across social development and time, and what the best current evidence reveals. Booth-LaForce and Roisman focus on the key factors and variables that prospectively predict stability as well as change in attachment patterns/orientations from childhood into adulthood. Allen points out the numerous ways in which adolescents differ from young children, which challenges the search for patterns of continuity anticipated by attachment theory. Paetzold, Rholes, and George review recent research on the stability and change of adult romantic attachment orientations (i.e., anxiety and avoidance) during chronically stressful life events and discuss how stochastic models, which forecast the probability of various outcomes under different conditions using random variables, might shed light on when people’s attachment orientations change or remain stable. Arriaga and Kumashiro review a new model—the Attachment Security Enhancement Model (Arriaga, Kumashiro, Simpson, & Overall, 2018)—which outlines ways in which romantic partners can help their insecure partners become less anxious or less avoidant, including the specific types of experiences that ought to induce change toward greater security.

Several basic themes run through these chapters. One involves the many challenges of attempting to document stability (or “continuity,” as Allen prefers) versus change in attachment across development and over time. As several authors emphasize, secure and insecure working models as well as emotional and behavioral tendencies are manifest in different ways at different points of development, especially between birth and late adolescence (Allen). In addition, different attachment measures have been used to assess attachment security at different ages leading into adulthood, even when the quality of attachment to the same attachment figure (e.g., one’s mother or father) is assessed. Moreover, determining the degree of stability in different types of attachment relationships (e.g., with one’s parents, close friends, romantic partners) involves not only modeling different measures that often use different methods (e.g., behavioral observations, interviews, self-report, parent-report, or partner-report questionnaires), but also different attachment targets, which attenuates stability/continuity estimates (see Fraley & Dugan). Thus, it is fairly impressive that *any*systematic links—even rather weak ones—have been found between brief measures of early security with, or quality of caregiving from, parents and attachment patterns/orientations later in adulthood (see Booth-LaForce & Roisman). Not surprisingly, as we noted earlier, the best estimates of stability come from studies in which the same attachment assessment is used on more than one occasion with the same attachment figure.

Another major theme surrounds the relative emphasis on prototype versus revisionist views of attachment (Fraley & Dugan), which relates to the need for a lifespan model of how internal working models develop and change. Inspired by Bowlby, who was influenced by both psychoanalytic and ethological views of the enduring importance of early relationships, many developmental and clinical attachment scholars are influenced by the prototype hypothesis—the notion that early relationships with primary caregivers formatively shape how people think, feel, and behave in their later attachment relationships, including those that serve different functions than parent-child relationships, such as relationships with close friends and romantic partners. While there clearly are reliable empirical associations between early and later attachment patterns and behaviors, these effects tend to be small. Moreover, based both on Bowlby’s (1973) discussions of developmental canalization and on contemporary life history theory (Del Giudice, Gangestad & Kaplan, 2016; Simpson & Belsky, 2016), it makes sense for individuals to be influenced by adult experiences when determining whether they can or cannot form a secure relationship with new attachment figures. Recent empirical evidence indicates that adult attachment orientations change in systematic, predictable ways (Arriaga & Kumashiro; Fraley & Dugan; Paetzold et al.), such as when adults are chronically stressed or entered new life roles and either their own actions or their partner’s actions strongly conflict with (i.e., counteract) their current working models.

The chapters in this section also draw attention to different patterns of stability and change. For example, children, adolescents, and adults can: (1) remain stable in their attachment patterns/orientations across time, (2) change from being insecure to secure, or (3) change from being secure to insecure. Different factors/variables might be associated with each of these patterns of stability or change, and we are just beginning to learn from large, prospective studies which influences seem to promote stability or change in attachment. Reviewing findings from prospective studies involving children, Booth-LaForce and Roisman note that early maternal sensitivity and father presence are two salient variables that predict child security as well as its maintenance across time. Reviewing findings from studies of adults exposed to chronic stress, Paetzold and colleagues note that people who seek or give greater support to their romantic partners become less avoidant over time, whereas those who receive less support or more anger from their partners become more anxious. One core principle that underlies these findings is that people tend to maintain their current attachment orientations unless they have significant attachment-relevant experiences that strongly contradict their working models, which in turn launch accommodation processes (Arriaga & Kumashiro; Girme & Overall; Paetzold et al).

The authors of this section also propose several important questions for future research on stability and change in attachment. For example, what are the specific conditions under which attachment security and insecurity change? Do people have to experience chronic stressors or enter new life roles for long-term changes to occur? How strongly must earlier and later measures of attachment be associated in order to support theoretical expectations of developmental continuity? How is attachment stability related to consistency and variation in internal working models? Do children and adults move with equal probability from one attachment pattern or orientation to another? Put another way, is it less likely that security or insecurity will change over time? Are some children or adults simply unable to move from one orientation to another due to specific traumatic experiences (e.g., maltreatment, betrayal, or chronic neglect)? Are there some conditions or experiences that help formerly insecure people to remain secure for longer periods of time and/or across different contexts?

Finally, and especially relevant to the lifespan development of internal working models, are the origins of attachment security (versus insecurity) the same for children (in the context of child-parent relationships) as they are for adults (in the context of romantic pair-bonds)? Might the primary sources of attachment security in early childhood, such as the quality of care received, be different than the primary sources of security in adulthood? For instance, could certain pivotal events that take place *after* a person enters a new type of attachment relationship—such as exposure to high levels of life stress, betrayal, or romantic partners who are undependable or unresponsive—mold adult attachment orientations with respect to that type of relationship? Answers to these intriguing questions await the next generation of attachment scholars.

**The Continuing Influence of Early Attachment**

Among attachment theory’s most compelling questions are those pertaining to the enduring influence of early attachment quality on subsequent human development. The chapters that addressed this topic responded to these specific prompts: *What domains of later behavior should early attachment relationships predict, and why? For what domains should we not expect an association with early security? What are, in other words, the boundary conditions for the influence of early attachment?* Three chapters (Roisman & Groh; van IJzendoorn et al., Ehrlich & Cassidy) focus on the associations between early attachment and specific developmental outcomes, whereas one chapter (Mikulincer & Shaver) focuses predominantly on adult attachment orientations (assessed dimensionally) and one chapter (Szepsenwol & Simpson) examines the influence of attachment in the context of life history theory.

Roisman and Groh’s historical perspective emphasizes that more recent, large-scale and/or meta-analytic studies may require reevaluating earlier conclusions about the influence of early attachment quality along with the approaches used to analyze such effects. In particular, they characterize meta-analytic evidence linking early attachment security with greater social competence and fewer behavior problem symptoms as “modest.” Interestingly, the age at which outcomes were assessed did not significantly moderate these effects, suggesting that attachment security may exert equally strong effects on early and later (e.g., adolescent) development. Roisman and Groh also illustrate attachment disorganization as the insecure category most strongly predictive of externalizing symptoms. Citing among other concerns that indicators of attachment disorganization and insecure-ambivalence/resistance load onto a common latent factor, they argue for increased use of continuous (instead of categorical) measures of individual differences in attachment (see also Raby et al.).

Both van IJzendoorn et al. and Ehrlich and Cassidy discuss the influence of early attachment in two more recently explored areas: brain development and physical health. Van IJzendoorn et al. describe associations between attachment disorganization and precociously early developing hippocampal volume (Cortes Hidalgo et al., 2019). They also describe evidence of associations between early parental sensitivity and insensitivity and childhood outcomes, such as brain volume and cortical thickness of the precentral frontal gyri, a brain area thought to be related to the development of empathy (Kok et al., 2015). Given the importance of empathy to peer relationships, these findings raise the question of whether the effects of early caregiving on brain development may underlie the effects of attachment quality on social competence discussed by Roisman and Groh.

In a similar vein, Ehrlich and Cassidy provide striking descriptions of associations between early attachment and both childhood and adult physical health. Their discussion raises questions about the interplay among attachment-related health and socioemotional outcomes. For example, could attachment-sensitive aspects of children’s physical wellness affect the extent to which they participate more fully in activities that, in turn, promote the development of social skills and friendships? Another possibility discussed by Ehrlich and Cassidy is that attachment security affects individuals’ stress regulation and health-promotive behaviors, which in turn affect health outcomes. Finally, in considering boundary conditions pertaining to attachment influences, both van IJzendoorn et al. and Ehrlich and Cassidy acknowledge the role of genetic predispositions that may interact with attachment experiences in ways that might both attenuate and intensify their effects.

Mikulincer and Shaver discuss a large body of evidence that adults’ attachment orientations are forged not only in early caregiving experiences, but are also predictive of their functioning in three life domains: (a) close relationships, (b) emotion regulation and mental health, and (c) other behavioral systems, such as learning. They note that experiences in each of these life domains can also affect—and change—attachment orientations in adults. Thus, bidirectional associations between attachment and other developmental phenomena are important to acknowledge and assess.

Szepsenwol and Simpson argue that evidence of the influence of early attachment on (a) mating strategies, (b) parenting attitudes and behavior, (c) pubertal timing, and (d) health reflect multiply mediated pathways in a causal chain linking early caregiving to reproductive fitness outcomes. They also carefully exclude attachment-related outcomes that are not relevant to reproductive fitness. Rather, they link early attachment security to a “slow” life history strategy defined by delayed puberty, a longer-term mating strategy, higher parental investment, and a longer, healthier life. A conversely “fast” life history strategy enacted in response to a harsh early environment may help to explain precocious developmental phenomena such as the association between attachment disorganization and hippocampal volume described above by van IJzendoorn et al.

Mikulincer and Shaver provide important theoretical context for considering the cross-cutting issues raised by this group of chapters. They emphasize that individuals’ attachment representations evolve in response to early *and* later attachment experiences, reflecting both early prototypes and later relational inputs. In this regard, similar to the evidence of stability in attachment patterns, it is impressive that there are, in aggregate, even “modest” links between early attachment patterns and important socioemotional outcomes.  At the same time, again paralleling our preceding discussion of stability, we recognize the need for the field to define precisely the strength of the evidence necessary to demonstrate a theoretically meaningful effect of early attachment on later behavior. Complicating this issue is that many studies of the influence of early attachment loosely interchange predictions from attachment quality with predictions from its major precursor, parental sensitivity.  The question thus arises as to when the effects of attachment are due "just" to prior or concurrent parenting and when they reflect a unique contribution of attachment quality per se (Fearon & Roisman, 2017).  Studies of the outcomes of early attachment should attend rigorously to both influences (e.g., Raikes & Thompson, 2008) but rarely do.  Another complication is that in some domains (e.g., brain development), attachment organization/disorganization is a stronger predictor than attachment security/insecurity. Recognizing that developmental outcomes derive from a complex combination of predictors among which early attachment is only one, it is incumbent on attachment researchers to seriously consider, from carefully designed studies, the strength of the influence derived from attachment quality in relation to theoretical expectations concerning its formative effects.

On a related note, as discussed above, individual differences in attachment can be conceptualized and measured categorically, dimensionally, or in terms of attachment strategies (i.e., hyper-activating or “maximizing,” and deactivating or “minimizing” strategies [Szepsenwol and Simpson; Main, 1990]). Reconciling which approach(es) might be best suited for which research question(s) could help clarify the influence of early attachment patterns. Finally, it is important to define precisely not only which developmental phenomena are expected to derive from early attachment, but also which are considered adaptive in both the short-term and long- term. An improved understanding of the influence of early attachment can then be applied to services and systems for children and families with a long-term goal of promoting not only reproductive fitness, but also physical and mental health, writ large.

**Culture and Attachment**

Attachment theory and culture have been connected from the time of Ainsworth's (1967) pioneering studies in Uganda, but their association is complex. Bowlby's (1969) theory described attachment in terms of evolutionarily adaptive processes that he believed were universal for humans. Although Bowlby's adaptational model has been critiqued and updated (Simpson & Belsky, 2016), the view that inclusive fitness requires species-typical behavioral adaptations has remained. But when it comes to understanding specifically what those behavioral adaptations constitute, critics from outside and within the attachment community have questioned the importance of caregiver sensitivity, the centrality of emotional security, and the model of caregiver-child interaction in which these processes occur. Thus as attachment researchers widen the scope of their studies to encompass more diverse cultural contexts, the gulf between them and culturally-oriented developmental researchers seems to widen.

The four chapters in this section exemplify this gulf, but also suggest potential ways of bridging it. The authors were asked to consider: *How are attachment processes manifested in different cultures?* and *How does culture manifest itself in attachment processes?* Keller's chapter illustrates many of the criticisms of cultural researchers in arguing that (a) attachment researchers assume a specific type of caregiver-child relationship that is inapplicable to a large variety of cultural settings involving group care, (b) the methods of attachment research are relevant primarily to the experience of Western middle-class families and are less applicable to families in low- and middle-income agrarian communities, and (c) evolutionarily adaptive processes are context-sensitive and thus are not necessarily behaviorally universal. Keller also argues that attachment ideas have sometimes led to harmful interventions when applied to the practices of families from non-Western cultures. Morelli and Lu provide substantive illustrations of Keller's points from their observations of the cooperative social networks of early care by the Efe. As they describe, young children (as well as adults) "nimbly manage" these relational networks based on children's expectations concerning the solicitude of those who care for them because the child's survival depends on the continued reliability of others' care. Thus the biobehavioral synchrony of affect and behavior underlying attachment within the Efe is, in this view, a group rather than dyadic phenomenon.

In response to views like these, Mesman calls for greater modesty by attachment researchers in their claims about cross-cultural validity, urging their greater willingness to entertain uncomfortable questions arising from research findings, as well as resistance to the confirmation bias that can beset theory-driven researchers. Mesman goes as far as encouraging attachment scholars to search for the "black swans" in findings -- those that would pose a genuine challenge to the theory. As the primary author of the chapter on culture in the most recent edition of the *Handbook of Attachment* (Mesman, van IJzendoorn, & Sagi-Schwartz, 2016)*,* Mesman qualifies the conclusion of that review -- that attachment theory can claim cross-cultural validity -- by indicating that more difficult questions need to be asked before cross-cultural validity can be asserted.

In considering how the field can move forward, we begin by observing that there is considerable agreement on many issues between attachment researchers and their cultural critics. All agree that early relationships are important to children's survival and development. Most agree with Morelli and Lu that children form attachment relationships in all but the harshest circumstances, although other relationships are also developmentally important. As the first section of this book illustrates, attachment researchers have moved considerably beyond their early focus on maternal care to recognize, and study, the close relationships that young children develop with multiple caregivers (e.g., Ahnert and contributors to topic 9). With respect to the sensitivity construct, Mesman and her colleagues (Mesman et al., 2017) have shown that when sensitivity is measured in a manner that provides latitude for culturally-specific manifestations, sensitive responsiveness is observed in a range of low- and middle-income agrarian communities, although this conclusion has been disputed (Keller et al., 2018). Finally, when Morelli and Lu describe how Efe infants learn to manage their changing relational networks to obtain what they need given variability in the reliability and responsiveness of their adult caregivers, developing attachments to those they have learned to trust -- especially when caregivers help to regulate infant distress and hunger -- the process sounds similar to the influence of internal working models in attachment theory. Thus, the claims of attachment researchers and those who study development in the context of culture have more in common than some have suggested.

The Morelli and Lu findings also illustrate, however, that new questions should guide future studies to achieve a deeper understanding and intermingling of attachment and culture research. The challenge of defining what constitute attachment relationships (topic 1) arises again: how do we determine which people in a young child's relational network are—or become—attachment figures? Meehan and Hawks (2013) documented that children in the Aka in the Congo Basin Rain Forest were cared for by more than 20 different people each day, as Mesman notes. But when they examined the children's differential display of attachment behaviors (such as proximity- and contact-seeking) toward these adults, the number of attachment figures thus identified was a much smaller subset of their relational network. Identifying the range of care providers, in other words, does not necessarily identify the number of attachment figures from the child's perspective. This observation illustrates that the gap between the questions posed by attachment researchers and the inquiries of culturally-oriented developmentalists can be quite different, resulting in research findings that are not as mutually informative as they could be. As Thompson (2017, p. 318, italics in original) wryly observed, "While culturally oriented researchers ask for greater *culturally informed attachment research,* attachment researchers sometimes wonder where they can find greater *attachment-informed cultural studies*." Advancing research that more deeply integrates the questions posed by researchers in each community of scholars will also require methodological innovation that can benefit each field, such as considering the sensitivity of care at a group rather than a dyadic level (Morelli; Ahnert).

It may also be true that reframing the issue of culture and attachment is necessary. Establishing or refuting universality claims can become sterile and uninformative disputes over evidence. By contrast, the kinds of questions that might inspire more productive future thinking may need to consider Chisholm's claim that "no manifestation of culture could long exist that failed to meet infants' innate mammalian attachment needs." As Bowlby (1969/1982) originally proposed, we should ask how each culture solves the problem that *all* cultures must universally address: how to ensure that young survive to reproductive maturity and that their offspring do also (Thompson, 2020). Cultures must ensure infant survival to be viable, but how they accomplish this can encompass different normative practices of early care, different numbers of caregivers, different resources, different developmental goals for offspring, and so forth. What cultures *cannot* do is chronically ignore infant needs, regularly expose them to danger, or render them incapable of developing competencies relevant to their adult functioning. Viewed in this light, attachment is one of the universal developmental tasks that cultures must address (Keller & Kärtner, 2013). How they do so in diverse cultural contexts -- and what practices they share in common -- is a fundamental question that needs to be answered. The view that *we cannot understand attachment apart from an appreciation of culture* might offer new, provocative ways of understanding diverse human solutions to this universal cultural problem.

Chisholm's chapter provides an alternative reframing of the issue of culture and attachment by drawing on the "deep history" movement to propose that attachment both permeates and constrains culture. In this view, attachment is the evolved foundation for human fealty (or "we-ness") of all kinds, ranging from caregiving relationships to pair bonds to political allegiances. Viewed in this light, *we cannot understand culture apart from an appreciation of attachment*. Moreover, a view of attachment in this manner might contribute to a broader view of the influence of attachment in contemporary culture, focusing more attention on the significance of early relationships and the quality of care, and less attention (as Keller urges) on whether the specific constellation of caregiving relationships is consistent with the norms of one society or another. In this respect, the best applications of attachment theory and research to intervention, as illustrated by the contributions to topics 8 and 9, are those that embrace the aspects of early relationships shared by different cultural systems, and, in doing so, enlist members of these cultural systems to help define and support appropriate patterns of care.

**Separation and Loss**

Separation (Bowlby, 1973) and loss (Bowlby, 1980) are twin pillars of attachment theory. Moreover, as Shaver and Mikulincer note, the sheer intensity of reactions to the separation or loss of an attachment figure provides some of the clearest evidence for the unquestionable power of attachment processes. Bowlby (1969/1982) began to realize that he was studying an important, evolved behavioral system when he observed the same basic sequence of reactions to separation and loss of attachment figures—protest, despair, detachment, and eventual reorganization (Bowlby, 1979)—in multiple species. Indeed, from an evolutionary standpoint, each stage of this sequence is an adaptive response to a “lost” attachment figure (Simpson & Belsky, 2016).

The authors for this section of the book were asked to address two questions: *How do people respond to the loss of an attachment figure? And what are the key processes and mechanisms involved?* They focus on different forms of separation and loss, ranging from the child's traumatic loss of a primary caregiver (Chu & Lieberman), to the breakup of romantic (Sbarra & Manvelian) and marital (Feeney & Monin) relationships, to normal (Shaver & Mikulincer) as well as pathological bereavement (Maccallum) in adults. Each chapter, in other words, addresses fundamental attachment processes associated with separation and loss at different stages of life and within different types of relationships, typically considering the attachment patterns/orientations of the bereaved person.

Chu and Lieberman focus on traumatic bereavement in young children following the prolonged separation or loss of their primary caregivers. Shaver and Mikulincer discuss the role of attachment hyperactivation and deactivation processes in normal as well as pathological grief and mourning. Sbarra and Manvelian review the psychological and biological ties that bind romantic partners together, focusing on various coregulation processes. Feeney and Moin address how the process and outcomes of divorce can be understood from an attachment perspective, emphasizing the persistence of attachment bonds that often remain following divorce. Maccallum examines how attachment theory informs our understanding of normal and especially pathological mourning processes, primarily in long-term romantic relationships.

A few prominent themes run across most or all of the chapters in this section. One salient theme is that variation in how people respond to separation and loss in relation to attachment has been well documented in adults, but less so in young children (see Chu and Lieberman). This disparity could be attributable to: (1) the severity of physical and psychological threat that young child experience when they lose a parent compared to when adults lose a romantic partner, (2) the “suddenness” with which separation or loss occurs in the minds of young children compared to adults, (3) the cognitive inability of young children to understand and make sense of why separation and loss has occurred, or (4) the fact that young children do not have the same knowledge, skills, or ability to find suitable replacement attachment figures as many adults do. Nevertheless, some variation in responses to separation and loss in relation to attachment does exist in young children beyond infancy, which remains a domain ripe for future inquiry.

Another salient theme highlighted by these chapters concerns detachment and reorganization processes (Bowlby, 1979). Neither construct has received sufficient theoretical or empirical attention, particularly given the paramount roles they assume in affecting grief and mourning outcomes. Moreover, this is an area within attachment theory where a fundamental normative (species-typical) process intersects with attachment-based individual differences to shape how grief and mourning unfold following separation or loss, especially in adults.

As highlighted by several authors, most notably Shaver and Mikulincer, separation and loss activate attachment hyperactivation processes (also called a “maximizing” attachment strategy [Main, 1990]) in children and adults, which are manifested in protest behaviors design to literally or figuratively “retrieve” the lost attachment figure. If/when protest fails to accomplish this, attachment deactivation processes (a “minimizing” attachment strategy[Main, 1990]) typically become manifested in detachment, which according to Bowlby (1979) helps individuals lessen or relinquish the emotional bonds with their former attachment figure in order to facilitate the formation of subsequent attachment relationships. In other words, these two strategies, which are associated with anxious and avoidant attachment patterns/orientations in children and adults, tend to facilitate successful movement through the normative stages of grief enroute to attachment reorganization following the loss of an attachment figure. When individuals stall or fail to progress through each of the grief stages, however, disordered mourning in the form of complicated grief (associated with dominating hyperactivation processes) or delayed grief (associated with dominating deactivation processes) can occur, as Maccallum discusses. Moreover, as Feeney and Monin note, divorce can complicate movement through the normal stages of grief because divorced partners—many of whom remain in contact with each other due to joint child custody—frequently find it difficult to detach fully from their ex-partners.

A third cross-cutting theme involves whether the absence of grieving in adults reflects the true absence of distress versus a defensive reaction driven by chronic attachment deactivation processes. Some adults experience little if any grief following the loss of a primary attachment figure, perhaps because their lost relationship did not meet their attachment needs, they “detached” emotionally from their former partners before the actual loss, they had alternative attachment figures who stepped in quickly either before or immediately following the loss, or they have social networks capable of meeting most of their key attachment needs. Furthermore, some people may be buffered from experiencing intense distress following partner loss because they have positive (secure) internal working models or weaker needs for proximity, safe haven, or secure base contact with attachment figures. More needs to be understood about individuals who experience minimal distress or recover very quickly following the loss of an attachment figure; not all of them are likely to exhibit “defensive repression“ which might produce pathological mourning.

Most importantly, the authors who addressed separation and loss raise several thoughtful questions for future research, such as the following: (1) Similar to adults, does the pre-existing quality of the attachment between a young child and their primary caregiver(s) predict the child’s response to and recovery from separation and loss?; (2) How does attachment reorganization occur, how are attachment functions transferred from the deceased partner to new attachment figures, and what role do memories of the deceased partner serve in promoting attachment security versus insecurity?; (3) How do attachment hyperactivation and deactivation contribute to the attachment reorganization process? Do hyperactivation processes allow individuals to retain the meaning and importance of their lost relationship and maintain a symbolic bond with the departed person? Do deactivation processes allow individuals to detach more easily from their former partner and keep painful thoughts, memories, and feelings associated with their prior relationship at bay? What factors ensure a successful balance between hyperactivation and deactivation processes as people move through the stages of grief and mourning?; (4) How do repeated losses of attachment figures (e.g., parents, close friends, siblings) across the life-course influence how people react when their adult romantic relationships end due to separation or death of a partner?; and (5) Are attachment patterns (in children) and attachment orientations (in adults) prospectively related to Prolonged Grief Disorder (PGD)? If so, what are the mechanisms that explain these connections? We look forward to the next generation of attachment scholars responding to these critical questions.

**Attachment-Based Interventions**

Bowlby based attachment theory in part on his experience as a clinician, making it somewhat ironic that the systematic design and evaluation of attachment-based interventions emerged relatively late in the development of the attachment field as a whole, beginning in the late 1980's [Barnett et al., 1987; Lieberman et al., 1991]. At the same time, foundational research defining the nature of attachment security and its strongest precursor, parental sensitivity, laid necessary groundwork for attachment-based interventions by portending key intervention targets and processes. Thirty years later, it is fair to say that attachment-based interventions have “caught up,” not only demonstrating impressive positive effects for both children and adults (Steele & Steele, 2019), but also raising questions important to refining attachment theory itself.

The five chapters on attachment-based interventions addressed two interrelated questions: *How do attachment-based interventions work? What are the key processes and mechanisms involved?* Three chapters focus on attachment-based interventions for infants and young children (Bakermans-Kranenburg & Oosterman, Dozier & Bernard, and Toth and colleagues). Two chapters focus on attachment-based interventions for adults (Talia & Holmes and Johnson). As a whole, these chapters illustrate several characteristics common to both child- and adult-oriented interventions. The first is a relational focus such that “the patient is the relationship” (Lieberman & Van Horn, 2008). In this regard, attachment-based interventions for children target the quality of the developing child-parent attachment. Attachment-informed psychotherapeutic models for adults, of which Johnson’s Emotionally Focused Therapy is one, view psychological disorders as manifestations of “disruptions” in adults’ capacities to trust themselves and others (Talia & Holmes), resulting in emotional isolation and helplessness (Johnson). Attachment-informed therapies are thus designed to provide corrective relational and emotional experiences that “reactivate” clients’ abilities to trust both themselves and others.

A second common characteristic concerns an emphasis on the relationship between the interventionist or therapist and client(s) as a key engine of therapeutic change. This emphasis follows from Bowlby’s (1988) explicit recommendations and from attachment research demonstrating the critical role of parental sensitivity in infant attachment quality (Fearon & Belsky, 2016). Child-oriented attachment-based interventions highlight the role of the interventionist as an engaged and empathic secure base from which a mother or father can safely explore new parenting behaviors. Likewise, in the context of attachment-based interventions for adults, the therapist provides a secure base from which an adult can consider new working models of self and other. In short, as Johnson notes, “the therapist emulates parenting behaviors associated with attachment security.”

A third characteristic common to child and adult attachment-based interventions centers on their careful attention to *how* the intervention is delivered. For example, in Dozier’s ABC program, the chief indicator of intervention fidelity is the frequency and quality of parent coaches’ “in-the-moment” comments that connect the parent’s behaviors to the intervention’s substantive foci. Similarly, Bakermans-Kranenburg and Oosterman delineate six deliberately employed strategies through which the VIPP-SD program may increase parental sensitivity (e.g., “focus on positive fragments”). Similarly, in the realm of attachment-informed psychotherapeutic models for adults, Talia and Holmes emphasize the therapist’s meta-communication and Johnson identifies the therapist's discovery of emotional triggers and the depth of the client’s emotional processing as a therapeutic linchpin. Many of these intervention processes have been fruitfully operationalized and tested, for example through Dozier and colleagues’ analysis of parent coaches’ in-the-moment comments (Caron, Bernard, & Dozier, 2018) and Talia and colleagues’ (2017) Patient Attachment Coding System. Continued study of the most active ingredients of attachment-based interventions ought to improve their effectiveness and efficiency and facilitate deeper insights into central issues in attachment theory and research, such as the conditions that promote stability and change in attachment security and working models.

This group of chapters also suggest several important next steps for the design and evaluation of attachment-based interventions, three of which we highlight here. First, whereas both theory and research suggest that changes in maternal sensitivity mediate intervention effects on infant attachment, only a few studies have tested this mediated pathway. While their findings illustrate maternal sensitivity as an underlying driver of intervention effects, more studies are required. Ideally, such studies will include large samples and the measurement of mediators that take place *prior* to the measurement of outcomes so that the temporal precedence of the mediator is confirmed (Dozier & Bernard; Toth et al.). Another hypothesized but infrequently tested mediator is the parent’s internal working models and/or reflective functioning. Further study of these proposed mediators will not only illuminate intervention mechanisms, but also help clarify the antecedents of attachment security and organization.

Second, whereas theory and research suggest that changes in attachment security mediate intervention effects on downstream child outcomes, there has been surprisingly little investigation into this mediated pathway. This is an area in which attachment-informed psychotherapeutic models for adults could provide guidance to attachment-based interventions for children. Specifically, in response to the “dire need” in the field of adult psychotherapy for “a coherent unifying vision of…what it means to be human,” Johnson offers an attachment-informed definition of adult health that includes a sense of connection to others, a coherent inner world, and “full, flexible engagement with the world.” To the extent that the developers and evaluators of early attachment-based interventions hypothesize and examine intervention effects beyond infant attachment security, it will be helpful to delineate specific expectations about exactly which downstream outcomes attachment-based interventions should and should *not* affect and why, as well as which longer-term outcomes might be best promoted directly, rather than indirectly via effects on attachment security. More precisely rendered findings can then be applied not only to improve the interventions but also to address the boundary conditions of the influence of early attachments on later developmental outcomes. Greater precision and standardization in outcomes at both the conceptual and operational levels will also fuel a more unified and generative translation of early intervention research findings to U.S. child and family policies (Shonkoff, 2010).

Third, a fuller understanding of attachment-based interventions will require better explicating “what works for whom?” Future studies might build on the differential susceptibility model (Belsky & Pleuss, 2009), testing both parents’ and children’s susceptibility to attachment-based interventions (Bakermans-Kranenburg & Oosterman). Another valuable avenue would center on defining the ideal fit between the attachment orientation of an adult client and that of their therapist (Talia & Holmes).

We look forward to attachment researchers tackling these and other next steps in the design and evaluation of attachment-based interventions. Such efforts will, in turn, help illuminate the nature of attachment, writ large.

**Attachment, Systems, and Services**

Galvanized in part by attachment theory and research, supporting early child development has become an increasingly prominent goal of practitioners and policymakers. The six chapters on attachment, systems, and services addressed two questions: *How are attachment theory and research relevant to systems and services for children and families? What lessons can we learn from these programs?* Together, these chapters illustrate how attachment theory and research have influenced the design, implementation, and evaluation of many policies, service systems, and programs for children and families. These include widely used services such as child care (Owen & Frosch) and early childhood education (Hamre & Williford), as well as more specialized systems, such as those serving children of separated and divorced parents (Lamb), those designed to protect children when their primary caregivers cannot (Manly et al.; Zeanah & Dozier), and more preventive programs, such as home visiting (Berlin et al.). Such services typically reflect a patchwork of federal mandates and state- and locally-implemented initiatives. Whereas it can be advantageous for services to vary according to community characteristics and needs, it is also the case that inconsistencies in program implementation create confusion and compromise service quality. The chapters in this section of the book point to numerous ways in which attachment theory and research could be more rigorously applied in order to increase service consistency and quality.

In the domain of child care and early childhood education, attachment theory and research have focused attention on the importance of the quality of the relationships between young children and their caregivers and teachers, especially with respect to these adults’ sensitive and supportive caregiving behaviors. Owen and Frosch argue that child care systems and services could be improved through greater consideration of (a) the relationships between child care providers and parents (i.e., “parent-caregiver partnerships”) and (b) children’s transitions between caregivers, especially in light of relatively high rates of staff turnover among child care providers (see also Ahnert). Both Owen and Frosch and Hamre and Williford encourage greater use of evidence-based curricula and interventions that target the quality of the caregiver-child or teacher-child relationship. Hamre and Williford also urge more widespread use of Quality Rating and Improvement Systems (QRIS), federally-coordinated, and state-level initiatives to regulate the quality of preschools and related programs. Many QRISs to date have fruitfully employed the observational Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008), which includes an assessment of teachers’ emotional supportiveness, an important attachment-informed aspect of classroom quality. QRIS evaluate data and these evaluations are then systematically fed back to inform service improvements.

Systems and services for children of separated and divorced parents are arguably the least systematically implemented of those considered here, with many critical decisions about child custody and visitation often decided by a single judge. In this domain, Lamb encourages shared parenting arrangements that include overnight visits in order to provide both parents ample opportunities, via hands-on caregiving and nurturance, to continue to serve as attachment figures to their child.

In the domain of child protection and home visiting services, all chapters call for greater application of attachment theory, research, and attachment-based interventions. Resonating with Owen and Frosch’s concerns about sensitively handling children’s child care transitions, both Manly et al. and Zeanah and Dozier highlight the need for better understanding of attachment and better appreciation of the potential for traumatic loss in very young children among those who work in or with the child protection system, including CPS staff, lawyers, and judges. More comprehensive training, provided as part of educational programs in social work, law, and other professions, continuing educational workshops, and expert consultations are recommended, as is wider use of the Safe Babies Court Teams (Osofsky & Lieberman; 2011; Zero to Three, 2020), a model that integrates child protective decision-making with training in attachment and attachment-based interventions. Such trainings may not only improve services but also clarify important issues pertaining to attachment and loss which in turn may help clarify what kind of relationships constitute attachments per se (see also Ahnert). Greater use of attachment-based interventions in the context of (a) services for maltreated children and their biological parents, (b) promoting secure attachments of foster children to their foster parents, and (c) preventive home visiting services is also recommended by Manly et al., Zeanah and Dozier, and Berlin et al. In this regard, the Attachment and Biobehavioral Catch-up program is a strong candidate, having demonstrated positive effects with caregivers and their infants and toddlers receiving both CPS and foster care and with low-income families receiving home-based federal Early Head Start services (Dozier & Bernard; Zeanah & Dozier). In addition, both Manly et al. and Zeanah and Dozier call for supporting the often ongoing relationships between biological and foster parents through initiatives such as the Quality Parenting Initiative (Shauffer, 2012). Finally, Manly et al. and Berlin et al. call for more program evaluation, especially using attachment-based measures such as observational assessments of parent/caregiver sensitivity.

In summary, despite the somewhat fragmented and uncoordinated nature of U.S. systems and services for children and families, all of those discussed in this section reflect the beneficial influence of attachment theory and research, and all arguably stand to benefit from a greater infusion of both. As a whole, these chapters uniquely call attention to the importance of a child’s multiple attachments and to their “networks of attachment relationships” (Fearon & Schuengel). These chapters also highlight the value of supporting such networks, such as by nurturing partnerships between the important adults in a young child’s life (e.g., between child care providers and parents, between biological and foster parents). Provocative questions raised by these chapters include (a) whether a secure attachment with a child care provider can buffer the effects of an insecure child-parent attachment (Owen & Frosch) and (b) what a child carries forward from relationships that are disrupted (Zeanah & Dozier). Carefully constructed studies that address these and other questions concerning the quality and outcomes of children’s multiple early relationships, especially under unusually challenging (e.g., foster care) and unusually supportive (e.g., high quality child care, home visitation) circumstances, stand to improve our understanding of the touchstone issues raised by these chapters as well as the lifespan development of internal working models.

**Concluding Thoughts**

In the opening of this chapter, we reflected on some of the reasons for the enduring contributions of attachment theory to psychological science. In the pages that followed, we highlighted what we've learned and some of the cross-cutting themes of the field, as well as the research questions that remain, based on our contributors' insightful discussions of the nine fundamental questions that they addressed. We are left hopeful about the future of attachment theory and research, the number of interesting issues beckoning for further study, and the further potential of this field to address even more fundamentally important questions within the social and behavioral sciences, with their implications for therapeutic intervention, public policy, and public understanding.

However, we also note of some of the more critical voices among the contributors to this volume. Roisman and Groh, for example, use the term "exhaustion" to describe the current era of attachment work, questioning whether it is a period of theoretical and methodological rigidity with limited scientific and translational advances. In a similar vein, Mesman reflects on the vulnerability to confirmation bias among attachment researchers who need (but often fail) to ask the "uncomfortable questions" that would be more generative and help improve and advance attachment theory and research. Moreover, Keller claims that attachment theory is weak due to conceptually fuzzy concepts and explanatory processes. These criticisms, from both within and outside the community of attachment scholars, caution against undue self-congratulations and underscore the continuing need for clear thinking and self-criticism, both hallmarks of good scientific inquiry. Indeed, someone perusing the table of contents of this book might wonder how a theory that has stood the test of time so well requires a volume like this to discuss—and only partially resolve—such fundamental questions as what kinds of relationships constitute attachment relationships, how to assess the security of attachment, and the nature and function of internal working models. Are these unresolved issues indicators of theoretical generativity or ambiguity?

Therefore, we close this chapter with two challenges for the future of attachment theory and research. They derive from our own reflections after writing the foregoing pages, recognizing that there are many other challenges and important questions contained in both our preceding comments and in the 46 chapters that future researchers should also consider. We believe that these two challenges, however, are uppermost in what is needed to ensure the continued generativity of attachment theory and research.

First, we believe that the field needs an integrated life-span view of attachment and its development, one that has a central theoretical focus on internal working models and their development. By "integrated" we mean a view that synthesizes attachment scholarship as it is being conducted by developmental, social/personality, clinical, and other researchers into a more coherent, consolidated perspective. We emphasize internal working models is because this construct is central to definitional and measurement issues, understanding the correlates and outcomes of attachment as well as stability and change over time, and the nature and effectiveness of clinical interventions. It is thus central to creating a more coherent view of the development of attachment throughout life. Simply stated, it is impossible to understand the development of attachment without a systematic understanding of the development of internal working models.

Most attachment scholars would agree that, from infancy through adulthood, attachment becomes an increasingly individual (trait-like) orientation at that same time that experience in multiple relationships with different attachment figures produce different representational models of relationships. This developmental process begins in infancy with attachments to mothers and fathers (and often with certain other caregivers) and continues to unfold with the development of other close relationships, including romantic affiliations and close friendships in adolescence and beyond. Over the life course, the relationships that are considered "primary" attachments change developmentally from parents to adult life partners, even though primary attachments from early life leave a continuing representational legacy. Here, is where the pivotal questions emerge. How do internal working models become elaborated, refined, and/or generalized with relational experience? Do the internal working models associated with early attachments become integrated over time, refined by further relational experiences, and develop into a single, inclusive working model that shapes behavior and relationships in different contexts? Or do individuals gradually develop multiple, relationship-specific working models that, over time, differentially affect attachment-relevant thoughts, feelings, and behavior based on the relevance of different models to different situations? What determines when and how internal working models become evoked or activated and, in turn, influence responses and actions? Currently, we do not have a coherent theoretical view of the processes leading from multiple attachments to internal working models to individual attachment orientations to behavior. Greater collaboration between researchers who study attachment in childhood and those who focus on adult attachment could contribute to a more integrated life-span view.

Central to this theoretical task is the empirical challenge of measuring internal working models better and more directly. The field currently uses several methods to measure internal working models (e.g., the Adult Attachment Interview), and these are models on which to build. But another approach is suggested by Waters and colleagues, who offer script-based approaches as one illustration of how researchers might build on modes of representation and information-processing that are well-studied and are currently incorporated into broad conceptualizations of internal working models. Script approaches can thus explain processes associated with IWMs in a conceptually refined manner that links to research literatures within and outside attachment theory. So also would approaches that examine attachment-related processes of emotion regulation, memory and information-processing, attributional biases, and the behavioral strategies (minimizing/deactivating and maximizing/hyperactivating) discussed by Cassidy and other contributors. Such processes can be measured throughout the lifespan along with assessments of attachment security and its behavioral correlates with the potential of offering a clearer formulation of how IWM processes develop and mediate the influence of attachment.

To summarize, we propose that a more coherent view of the development of internal working models is needed to advance a life-span theory of the development of attachment, and that this task is *essential* to advancing attachment theory on a variety of issues. An important component of this task will be to create measures of internal working models that are developmentally appropriate and can be embedded within a theoretical view of how internal working models evolve across the lifespan. We recognize that this will be a major challenge to accomplish, but we believe it is a truly necessary and potentially highly rewarding endeavor.

The second challenge is more easily described. Attachment theorists must devote more effort to defining the boundary conditions of attachment principles and processes. In other words, we must identify not only what attachment is and what it should influence, but what it is *not* and what it should *not* influence. Attachment researchers have long been more attentive to convergent validity in their studies than to discriminant validity. This has yielded a research literature in which the correlates of attachment patterns have expanded almost exponentially. This issue connects to the foregoing, insofar as unmeasured internal working models have provided an extremely flexible explanatory device for novel (and potentially unexpected) correlates of attachment security and insecurity. If attachment theory is to maintain fidelity to Bowlby's formulations, we must clarify what attachment orientations should predict, and what they should not predict, especially because identifying the latter would facilitate the exploration and perhaps discounting of alternative explanations. These efforts may also sensitize the field to deal better with unanticipated “Black Swan” findings, some of which may require revisions to certain propositions, tenets, or hypotheses associated with attachment theory.

In the chapters of this volume, there are a handful of contributors who sought to clarify these boundary conditions. Szepsenwol and Simpson, for example, discuss how far life history theory goes in identifying the association of attachment security with later behavior, including variability in reproductively-related behavior, but explicitly excluding variables like life satisfaction and religiosity. Ehrlich and Cassidy connect early attachment to diseases and chronic conditions that are clearly tied to health behaviors, stress, and coping, but not to those that have a strong genetic basis, except insofar as how attachment may be related to disease progression rather than disease onset. These examples illustrate the benefits of considering the boundary conditions of attachment. Doing so provides greater clarity to the hypotheses underlying and guiding attachment research and motivates more incisive exploration of unexpected research findings, which might merit alternative explanations. Ideally, as attachment researchers explore both expected and unexpected findings, they will be able to more precisely define which attachment-related outcomes, which currently include such wide-ranging phenomena as reproductive fitness, physiological biomarkers, and marital satisfaction, should be anticipated by attachment theory in which specific conditions.

The next generation of attachment scholars is faced with several remarkable, compelling, and exciting challenges, the solutions to which will likely advance our understanding and appreciation of people and relationships in important and unique ways. We look forward to what the next decades of attachment research will offer.

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