



Psychology Press Classic Editions

PATTERNS OF ATTACHMENT

A PSYCHOLOGICAL STUDY
OF THE STRANGE SITUATION

Mary D. Salter Ainsworth, Mary C. Blehar,
Everett Waters, and Sally N. Wall

With a new preface by Everett Waters, Inge Bretherton, and Brian E. Vaughn, and additional appendices



PATTERNS OF ATTACHMENT

Patterns of Attachment reports the methods and key results of Mary D. Salter Ainsworth's landmark Baltimore Longitudinal Study. Following upon her naturalistic home observations in Uganda, the Baltimore project yielded a wealth of enduring, benchmark results on the nature of the child's tie to its primary caregiver and the importance of early experience. It also addressed a wide range of conceptual and methodological issues common to many developmental and longitudinal projects, especially issues of age appropriate assessment, quantifying behavior, and comprehending individual differences. Ainsworth and her students also broke new ground by clarifying key attachment concepts and demonstrating the value of ethological methods and insights about behavior.

Today, as we enter the fourth generation of attachment study, we have a rich and growing catalogue of behavioral and narrative approaches to measuring attachment from infancy to adulthood. Each of these has roots in the Strange Situation and the secure base concept presented in *Patterns of Attachment*. Its inclusion in the Psychology Press *Classic Editions* series reflects *Patterns of Attachment's* continuing significance and insures its availability to new generations of students, researchers, and clinicians.

Mary D. Salter Ainsworth, Ph.D., was Professor Emerita in the Department of Psychology at the University of Virginia.

Mary C. Blehar, Ph.D., is affiliated with the National Institutes of Health.

Everett Waters, Ph.D., is Professor of Psychology at the State University of New York at Stony Brook.

Sally N. Wall, Ph.D., is Professor of Psychology at Notre Dame of Maryland University.

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A Psychological Study of the
Strange Situation

Classic Edition

*Mary D. Salter Ainsworth, Mary C. Blehar,
Everett Waters, and Sally N. Wall*

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PREFACE (2015)

Everett Waters, Inge Bretherton, and Brian E. Vaughn

A preface generally recounts how the idea for a book evolved or how a project developed to the point of requiring a book-length presentation. The story behind *Patterns of Attachment* is exceptionally well-documented (e.g., Ainsworth & Bowlby, 1991; Bretherton, 2013, 1991; Karen, 1998; van Dijken, van der Veer, van IJzendoorn, & Kuipers, 1998). Nonetheless, it is worth retelling for new readers.

This preface is written with several important goals in mind. The first is to emphasize that *Patterns of Attachment* remains a core resource in attachment study and deserves a close reading. The second is to make the book, and the foundations of developmental attachment theory, more accessible by clarifying and updating points of theory and method that have been the seeds of misunderstandings, and at times, controversy. In addition, we have added new appendices that include the full text of the measures for secure base behavior at home and the four maternal sensitivity constructs used in the Baltimore longitudinal study. For economy, these important measures were only presented in outline in the original printing and in subsequent journal articles. However, after circulating for decades as mimeographed artifacts from Mary Ainsworth's laboratory, it is high time they appear in full and in their appropriate context.

A Modern Classic

It is rarely clear from the outset that a scientific study will become a landmark. Moreover, it is never clear exactly where its greatest impact will fall. *Patterns of Attachment* appeared at a critical moment in the development of attachment study. Only the first volumes of *Attachment and Loss* (Bowlby, 1969, 1973) had

appeared and, as theoretical works, it naturally made more predictions and raised more questions than they answered. Bowlby's ethological approach seemed an advance over psychoanalytic and learning theory approaches to infant–mother relationships. Moreover, his emphasis on ethology, cognition, and control systems suggested deploying new strategies and tools. But would it work? Would difficult issues in social and emotional development yield to this new approach? Would it help resolve seemingly intractable issues regarding the importance of early experience? *Patterns of Attachment* was clearly reporting the kinds of progress necessary to bring attachment study to center stage. But would it attract enough new students to pursue all its implications for theory and practice?

More than three decades on, *Patterns of Attachment* has brought us a long way toward achieving these goals and has enriched developmental psychology and related fields beyond what Mary Ainsworth and her students could have imagined. In a sense, the Baltimore project was a logical extension of the *Infancy in Uganda* project (Ainsworth, 1967). It retained and built upon the observational descriptive methodology of the Uganda study. However, the observations were organized around a more formal schedule and research design that supported stronger tests of key attachment theory hypotheses. It was also an opportunity to consolidate insights from the Uganda observations into a more focused and formalized set of tools for quantifying maternal and infant behavior. Access to laboratory facilities also made it possible to coordinate the naturalistic observations with semi-structured laboratory observations in what became the Strange Situation Procedure (SSP). In turn, the SSP provided a window on facets of infant attachment behavior that were less salient in naturalistic settings.

The Baltimore project did much to validate and insure the good health of John Bowlby's attachment theory. It also opened the door to translational research that has helped establish infant psychiatry as a distinct discipline and served as a template for early intervention strategies. What is critical now is that *Patterns of Attachment* remain available for students and young researchers. This is assured by its inclusion in the Psychology Press *Classic Editions* series.

Patterns of Attachment

Patterns of Attachment reports the methods and key results of Mary Ainsworth's landmark Baltimore longitudinal study, in which she and her students observed infant–mother interaction and attachment behavior throughout the first year of life. Following upon her naturalistic home observations in Uganda, the Baltimore project yielded a wealth of enduring, benchmark results on the nature of the child's tie to its primary caregiver and the importance of early experience. It also addressed a wide range of conceptual and methodological

issues common to many developmental and longitudinal projects, especially issues of age appropriate assessment, quantifying behavior, and comprehending individual differences. In addition, Ainsworth and her students broke new ground, clarifying and defining new concepts, demonstrating the value of the ethological methods and insights about behavior, and deploying plain hard work to surmount obstacles to good measurement.

As in *Infancy in Uganda*, Ainsworth showed an exceptional “eye” for maternal and infant behavior and for the way meaning is conditioned by timing and context (Bretherton, 2003). Indeed, her conceptualization and lengthy naturalistic observations of maternal behavior are still unsurpassed in developmental research. Ultimately, the Baltimore observations provided decisive support for viewing attachment as a secure base relationship. They also revealed reciprocal links between proximity seeking, exploration, and sensitivity to physical, behavioral, and emotional context that neither psychoanalysis nor learning theory had highlighted or explained.

Attachment theory evolved from John Bowlby’s critique of psychoanalytic drive theory and his own clinical observations, supplemented by his knowledge of fields as diverse as primate ethology, control systems theory, and cognitive psychology. By the time he had written the first volume of his *Attachment and Loss* trilogy, Mary Ainsworth’s naturalistic observations in Uganda and Baltimore, and her theoretical and descriptive insights about maternal care and the secure base phenomenon, had become integral to attachment theory. This combination of theory and observation was logically compelling and presented by both Bowlby and Ainsworth with exceptional clarity. Nonetheless, their work might not have passed the test of time were it not for the Strange Situation Procedure (SSP) reported in *Patterns of Attachment*. Here was a structured, quantifiable, and reproducible assessment procedure that was much more economical than naturalistic observation.

Now, as we enter the fourth generation of attachment study, we have a rich and growing catalogue of interesting and well-validated approaches to measuring attachment-related behavior and representations from infancy to adulthood. Yet, each of them has roots in the SSP and the secure base concept. The Psychology Press *Classic Editions* series celebrates books that are widely recognized as enduring classics in Psychology. *Patterns of Attachment* has certainly endured. More importantly, its significance and influence continue to grow.

Impact and Endurance

It is difficult to separate the impact and endurance of a particular book from the good health of the field it represents. Qualitative and quantitative evidence confirm that, after more than 35 years, continuing interest in *Patterns of Attachment* reflects and contributes to the health of attachment study.

Twenty Studies

At the opening of the 21st century, developmental psychologist Wallace Dixon (2002) asked members of the Society for Research in Child Development to identify twenty studies (1950–2000) that had revolutionized child psychology. Alongside Piaget's (1936/1952) *The Origins of Intelligence*, Vygotsky's (1978) *Mind in Society*, and Chomsky's (1957) *Syntactic Structures*, the top five included both Bowlby's (1969) *Attachment and Loss* (Vol. 1) and *Patterns of Attachment*. In 2016 Dixon updated his survey, focusing again on the most recent 50 years and adding additional dimensions. Dixon's (2016) judges ranked *Patterns of Attachment* among the Most Revolutionary (#1), the Most Important (#1), and Most Fascinating (#2) developmental psychology studies of the past 50 years. The only ranking in which it finished out of the running, so to speak, was Most Controversial. Although attachment study hardly seems controversial today, for many of us, acceptance feels like it has been a long time coming.

Citations

Although scholarly impact is a difficult phenomenon to measure, the citation indexes maintained by the *Web of Science* and *Google Scholar* are widely used for evaluating and comparing both journal impact and the impact of books and articles within a field of study. Both data bases report the extent to which individual works or authors are cited by other scientists in a given time period. *Google Scholar* bases its information on a broad (some would say indiscriminant) search of citations in books, articles, manuscripts, conference reports, etc., accessible through the Internet. In contrast, *Web of Science* limits its counts on a selection of source journals. It also provides useful analytic tools that help identify and interpret patterns of results. Although *Google Scholar* typically reports higher citation counts than *Web of Science*, this is a matter of focus rather than of validity or utility.

A *Google Scholar* search conducted March 2015 indicated that *Patterns of Attachment* has been cited almost 15,000 times, an astounding number for an empirical monograph rooted in behavior observations. This compares favorably with Piaget's *The Origins of Intelligence* (10,849 citations in *Google Scholar*), which established, and for decades defined, the field of early cognitive development. Moreover, it surpasses Thomas and Chess's (1977) classic, *Temperament and Development* (3,427 citations) which also focuses on patterns in infant development and was included in Dixon's (2002) *Twenty Studies that Revolutionized Child Psychology*.

The narrower *Web of Science* data base identifies over 5,000 citations to *Patterns of Attachment*. More importantly, it provides a citation report showing the pattern of citations year by year. For most publications, citation count rises

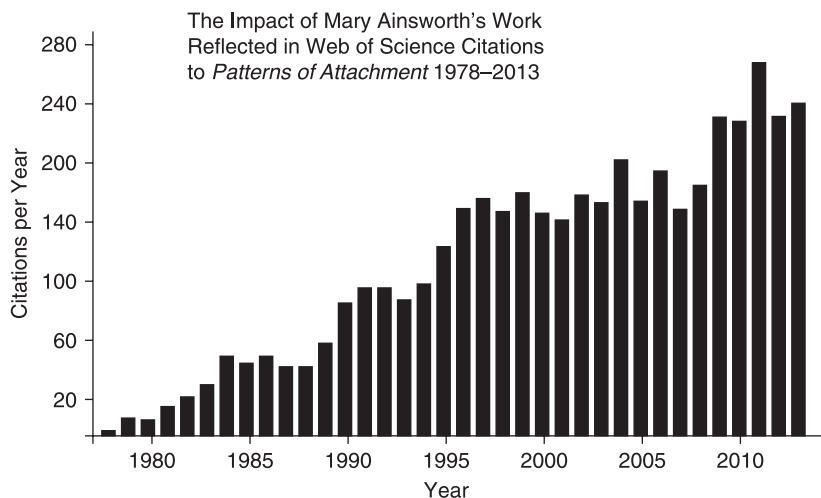


FIGURE P.1 Articles citing *Patterns of Attachment* 1978–2013 (*Web of Science*).

beginning 2–3 years after a book or article appears and then declines as a field moves on and interest in a particular work wanes. In marked contrast, interest in *Patterns of Attachment* has been constant, even increasing, across the three decades since it was first published (see Figure P.1). This too sets *Patterns of Attachment* apart from most observational and experimental research in developmental psychology. Of course the field has grown since 1978 and there are more attachment researchers and more journals publishing attachment-related research. However, these reflect, as much as account for, the enduring interest in and impact of this psychology landmark.

Patterns of Influence

It is also useful to examine how *Patterns of Attachment* has influenced and supported enduring and emerging themes in attachment study. One approach is to look for themes among the books and articles that have cited *Patterns of Attachment*. This could be done at different levels of detail and with different degrees of formal analysis. However, even an informal content analysis of titles citing *Patterns of Attachment* reveals that it has had broad impact and served as a catalyst for explorations in new directions. It also shows that attachment study has kept pace with new directions in psychology. Having identified all the books and articles that cited *Patterns of Attachment* between 1978 and 2013, we identified those that had been cited at least 100 times. We then used titles and abstracts to sort these 375 high impact items into categories. The twenty categories with the most members are listed alphabetically in Table P.1.

TABLE P.1 Categories of Articles Citing *Patterns of Attachment* 1978–2013 (*Web of Science*)

1. Attachment across cultures	11. Attachment and alternative care arrangements (daycare, adoption)
2. Attachment and social competence	12. Attachment-based interventions
3. Attachment to fathers and other non-maternal figures	13. Child maltreatment
4. Disorganized attachment	14. Effects of early experience
5. Emotion regulation	15. From sensorimotor to formal representations
6. Infant–mother interaction, maternal characteristics (e.g., depression)	16. Maternal sensitivity
7. Measurement alternatives and extensions	17. Neurobiology and genetics of attachment classifications
8. Patterns of attachment in adult relationships	18. Relevance of classification concepts across age
9. Relevance to at-risk and developmental psychopathology	19. Stability and change across age
10. Stimulus to advances in attachment and developmental theory	20. Validity in various age groups and populations

A number of these are enduring topics. However, even within familiar categories, the lines of research have evolved quite a bit since the early years of attachment study. Others, such as emotion regulation, neurobiology and genetics of attachment classifications, disorganized attachment, and perhaps even relevance to risk and developmental psychopathology (insofar as this was not yet a distinct field of study) could hardly have been imagined when *Patterns of Attachment* first appeared. This is an important indication of the book's heuristic value and, the good health of attachment study today.

The Attachment Paradigm

John Bowlby liked to refer to attachment theory as a new *paradigm*, a new way of understanding the infant's tie to primary caregivers. *Paradigm* can also refer to a community of theorists and researchers bound together by shared principles and methods (Kuhn, 1962/2012; Masterman, 1970). Thus, the *attachment paradigm* refers to both Bowlby–Ainsworth attachment theory and to the community that shares and contributes to their perspective, as distinct from the psychoanalytic and learning theory perspectives.

Paradigm can also refer to one or more prototypical problems or key techniques associated with a theoretical or methodological approach (Kuhn, 1962/2012; Masterman, 1970). As students become skilled in solving such problems or using a particular tool, they come to understand the practical meaning of key theoretical concepts. They also learn to recognize the contexts

in which a theory or methodology is relevant. Eventually, with much experience across many trials, they acquire the expectations and fluency characteristic of experts. In addition to their use as a tool for discovery, the attachment–exploration balance and the SSP are very much the paradigm through which generations of students have learned to recognize attachment behavior and understand attachment theory. This, as much as any theoretical insight or empirical result, is why *Patterns of Attachment* endures.

The Secure Base Phenomenon

John Bowlby introduced attachment theory in a 1957 talk to the British Psychoanalytical Society. It was published the following year as “The nature of the child’s tie to his [sic] mother” (Bowlby, 1958). The key to the paper was a proposal for replacing psychoanalytic drive theory and cathectic bonding with a more tenable, empirically accessible motivation model. For this Bowlby turned to ethology and comparative psychology and the concept of instinctual behavioral responses. There was as yet no mention of exploratory behavior or the attachment–exploration balance, both of which are central to *Patterns of Attachment* and current attachment theory.

Bowlby (1958) identified as attachment-related five behaviors that have the predictable outcome of helping maintain proximity to the mother and contribute to maintaining her availability. These included smiling, crying, clinging, following, and sucking. Bowlby proposed that, over time, and with appropriate experience, these become integrated into an attachment behavioral system that is keenly sensitive to inner and environmental cues and context.

Bowlby’s use of concepts from ethology led some early critics to characterize his proposal as an instinct theory, with the now outdated connotation of behaviors that emerge early in development and are relatively inflexible (stereotyped) in both form and response to the environment. In response, Bowlby (1969) went to considerable lengths in *Attachment and Loss* (Vol. 1) to provide a more sophisticated understanding of the instinct concept as applied to behavioral systems. Criticisms of attachment theory as an instinct theory are simply uninformed. The ethological, evolutionary concept central to the theory is not the innateness of the attachment system but the importance of evolved biases in infant learning abilities which are part of our primate evolutionary heritage and critical to attachment development. It is not attachment that is inherited. It is the capacity to become attached and to construct (through interaction with an appropriate caregiving environment) a system for using one or a few figures as a secure base.

Designating a specific set of behaviors as *attachment behaviors* was also a source of misunderstanding, measurement problems, and criticism until Sroufe and Waters (1977), Hay (1980), and others clarified what Bowlby and Mary Ainsworth had known all along—that every behavior accessed by an

attachment control system is available to other motivational–behavioral systems as well. There are no uniquely attachment-related behaviors. Thus, simply adding up all the instances of a particular behavior irrespective of context is unlikely to measure anything very interesting regarding attachment relationships.

Mary Ainsworth always said that her goal in Uganda was not to confirm Bowlby’s attachment theory but to see whether conceptualizing the child’s tie to its mother as a secure base relationship fit what mothers and babies actually do. In fact, she didn’t send Bowlby regular updates on the study or engage in much back and forth as it unfolded. Then, in 1958, he sent her his paper on the child’s tie to its mother. This prompted her to provide an overall picture of her observations, which Bowlby generously described as a “happy convergence” with his own conclusions. In the spring of 1959, Bowlby visited Mary Ainsworth in Baltimore. This gave them a chance to compare notes and for her to fill him in on some of the initial analyses of her Uganda data. Then in 1961, at Bowlby’s invitation, she began presenting her work at the Tavistock Seminars on Mother–Infant Interaction which he organized in London. Attachment theory evolved quite a bit between 1958 and 1969. Much of this evolution was motivated and guided by Mary Ainsworth’s emphasis on the secure base concept and her observations of proximity-seeking and exploratory behavior in Uganda and in the 26 mother–infant dyads she and her students studied in the Baltimore longitudinal study (1963–67).

Bowlby introduced the control systems concept in the first volume of his *Attachment and Loss* trilogy (Bowlby, 1969, Ch. 13). This was a significant step beyond the 1958 formulation, both in addressing the underlying mechanisms and the context sensitivity of attachment responses. In addition, rather than focusing exclusively on the conditions under which the attachment responses are switched on and off, the emphasis turned to the ongoing dynamic balance between exploration and proximity seeking. It was apparent in naturalistic observations spurred by Bowlby’s work that infants actively monitor their caregivers’ location and availability while exploring. That is, exploration was *pivoting around* or *referenced to* a secure base figure about whom information and expectations were continuously updated by an attachment control system. Indeed, if there were no exploration there would be no need for proximity seeking. The infant could, as in many species, simply stay on or within reach of its mother.

Most mammals are capable of seeking proximity/contact early in infancy. In addition, they all show extensive exploratory interest in their environments. Moreover, they all use both proximity-seeking and exploratory locomotion for a variety of purposes including information seeking and foraging (Hay, 1980). Yet, they do not all show the kind of lasting bonds, extended and extensive exploration, and parental care we associate with parent–offspring (not to mention adult–adult) human attachment relationships. The attachment control system coordinates these two systems, over time and in light of context, to

serve two functions: (a) maintaining proximity to the primary caregiver, and (b) supporting exploration and learning. Although Bowlby (1969) emphasized the role of proximity in affording a degree of protection, he clearly recognized that both functions play significant roles in evolution and development.

Infants and children learn much more when exploring with a caregiver, who can scaffold and co-construct problem solutions and problem-solving skills, than they could exploring alone. Thus, rather than thinking of such behaviors as more (or less) attachment-related, it is useful to think of attachment as a system which, for extended intervals, takes control of proximity and exploratory systems and coordinates them in ways that promote both safety and the experience necessary to build a human nervous system (Waters, 2008). That is, attachment is not the behaviors but the higher level system that organizes them (Bowlby, 1969; Sroufe & Waters, 1977). This perspective is important for appreciating the roles of internal working models and for building computational models of the attachment–exploration balance (e.g., Bischof, 1975; Petters, 2006; Petters, Waters, & Sloman, 2011; Petters, Waters, & Schönbrodt, in press, 2015).

The close link between attachment and exploration, which was so evident in the Uganda and Baltimore observations, found fuller theoretical development in the second volume of Bowlby's trilogy (Bowlby, 1973), especially Chapter 21 ("Secure attachment and the growth of self-reliance"). Still, Bowlby felt that the iconic image of an infant retreating to its mother for safety or comfort was only half of the picture. Attachment theory required a new, equally evocative concept to encompass this and the mother's role as base from which to explore. Mary Ainsworth had often spoken of the infant's excursions out to explore and back to the mother as the *secure base* phenomenon. Problem solved—and thus the title of Bowlby's 1988 collection of lectures and articles, *A Secure Base*, and his dedication, "to Mary D. S. Ainsworth who introduced the concept of a secure base."

The Baltimore Project

The Baltimore study was not merely "a psychological study of the Strange Situation." It advanced from *Infancy in Uganda* on a number of fronts. First of all, it shed the idea that *strength* and *onset* of attachment were measurable phenomena. It would be more productive for both theory and measurement to focus instead on: (a) the skill and confidence with which an infant used its mother as a secure base once attachment was clearly established, and (b) the infant's expectations regarding the mother's accessibility and responsiveness and her cooperation with its ongoing behavior.

The Baltimore project also benefited from Mary Ainsworth's contact with John Bowlby as he developed the *Attachment and Loss* trilogy. In addition to using her as a sounding board for testing his own ideas, Bowlby repeatedly

acknowledged the value he placed on her insights and detailed knowledge of maternal and infant behavior. And, of course, he credited her with the secure base formulation that captured the essence of the relationship so well. This collaboration gave the Baltimore project had a head start on the field when it came to testing hypotheses based on the most recent developments in attachment theory. This was particularly important when it came to insuring that home observations covered the full range of theoretically relevant behaviors. It also influenced the design of the SSP episodes.

Finally, it was easier in Baltimore than in Uganda to follow a structured recruitment plan and research design in which each mother–infant dyad could be observed at home for the same 16 hours during each quarter of the first year. Even today, with ready access to sound and video recording, the narrative records from these observations are unparalleled as longitudinal descriptions of development in the first year.

A Flair for Measurement

Patterns of Attachment established the SSP as the hallmark of infant attachment research. Nonetheless, the measures developed for assessing (1) maternal interactive behavior, and (2) the attachment–exploration balance at home were also important to the Baltimore project. The maternal interactive behavior scales, in particular, are unparalleled examples of translating detailed observations into workable quantitative measures.

Maternal Sensitivity

After more than 40 years, the Ainsworth Maternal Sensitivity Scales remain cornerstones of research on infant–mother interaction. As illustrated and discussed in the December 2013 special issue of *Attachment and Human Development* (Grossmann, Bretherton, Waters, & Grossmann, 2013) they are some of the most elegant behavior descriptions in psychology and convey a great deal about Mary Ainsworth’s skill as an observer and theorist. Moreover, as with the secure base concept and the attachment–exploration balance, the maternal caregiving and interaction constructs, (1) sensitivity to signals, (2) cooperation with ongoing behavior, (3) acceptance of age-related requirements, and (4) physical–psychological accessibility, have proven useful for theory and research strategy across the lifespan. Indeed, they would have to because the very idea of a secure base relationship entails someone using, *and* someone providing, secure base support. Neither can be defined without reference to the other—an example of a truly dyadic phenomenon.

In the past, the four caregiving and interaction scales have only been available in mimeograph or online. They deserve to be more accessible and more often studied in detail. Thus, they have been included in this reissue as Appendix

IV. Each of the scales consists of an introductory essay that describes how the construct is conceptualized and how it plays out in the home environment. In addition, each essay includes thoughtful observations about how best to observe and the kinds of difficulties that arise in observing and interpreting behavior at this level of detail. As always in Ainsworth's work, the emphasis is on observing the behavior, not rating a psychological construct, and when assigning scores, looking for a convergence of indications rather than placing heavy bets on individual acts.

Conceptualizing the four caregiving and interaction constructs, translating them into measures, and relating them to attachment outcomes in a truly modern and theoretically grounded way was one of the singular accomplishments of the Baltimore study. A key innovation here was basing the scale anchors on vignettes from the home observations and allowing more than one interactive vignette to anchor a given scale point. Keeping the scales close to actual behavior and finely attuned to context was a significant advance over scales based on stereotypes, informal observations, and arbitrary anchors. Importantly, the link between sensitivity constructs and infant security has stood the test of time in a number of longitudinal studies (see Grossmann et al., 2013). In addition, the development of the Maternal Behavior Q-set (MBQ) by Pederson and Moran (1995) has made it much easier to collect and quantify naturalistic observations of mother–infant interaction.

Recent research shows that there is considerable room to expand the *Patterns of Attachment* conceptualization of maternal sensitivity, especially at older ages, to give added weight to support for independence and for exploration. In recent research, Bernier, Matte-Gagne, Belanger, and Whipple (2014) have found that doing so substantially improves a model linking maternal AAI coherence to maternal sensitivity and child security. Similar work, extending current conceptualizations and measurement of secure base support to older ages (Crowell, Treboux, Gao, Fyffe, Pan, & Waters, 2002), and examining it in different cultures and family circumstances (e.g., Posada, Carbonell, Alzate, & Plata, 2004) is a promising direction for new research based on new ethological attachment studies (e.g., Grossmann et al., 2013).

Secure Base Behavior at Home

Bowlby's conceptualization of the child's relationship to its primary caregiver as a secure base relationship was a key departure from psychoanalysis. This opened the door to a control systems approach to motivation which accounted for the infant's sensitivity to its environment and the apparent purposefulness of its excursions from and back to its mother, without resorting to unobservable libidinal drives or implausible schedules of reinforcement, or invoking some equally magical alternative. To establish this, Bowlby reviewed ample behavioral and neurophysiological evidence of control systems organizing and

regulating the behavior of other species. Moreover, evolutionary theory provided a very plausible explanation for human infants' ability to construct such a system. The challenge in the Baltimore study was to build upon the experience and results Ainsworth reported in *Infancy in Uganda* to quantify individual differences in infants' secure base behavior.

The performance of a control system is ordinarily evaluated in terms of how closely its output tracks a set goal (see Bowlby, 1969; Waters & Deane, 1985). For example, the variance of room temperature around a thermostat setting of 72 degrees reflects how well a thermostatic control system accomplishes its goal of maintaining a stable, comfortable room temperature. Unfortunately, the set goal of the attachment control system is not as easily specified. In early formulations, Bowlby spoke of an infant maintaining a degree of proximity to its mother. At the same time, he recognized that this depended very much on contextual factors, recent events, the familiarity of the setting, whether the infant was tired or ill, etc. It also seemed to depend on the infant's expectations regarding its mother's availability and responsiveness. Thus, the problem Mary Ainsworth had to solve in the Baltimore study was to go beyond specific proximity-seeking and exploratory behaviors to capture how well an infant managed the attachment–exploration balance across time.

The solution was to use the scorer's understanding of the secure base concept to match infants' behavior to one of five levels of secure base use. These ranged from: (1) using the mother as a secure base and maintaining a smooth balance between proximity and exploration, to (5) patterns in which the attachment–exploration balance was not consistently maintained. As with the maternal caregiving and interaction scales, the measure was derived from transcripts of the actual Baltimore home observations. In addition, sub-classifications at each level described different patterns of secure base behavior that could be considered similarly effective or ineffective. Importantly, the anchors were not discrete behaviors. Instead, they were patterns of behavior as it was organized (or not) over time and context.

Mary Ainsworth was “not altogether satisfied” (Ainsworth, Blehar, Waters, & Wall, 1978, p. 241) with this approach. Nonetheless, it served well enough to anchor the SSP to behavior in a naturalistic setting, confirming its relevance to Bowlby's theory. It also served well enough to validate SSP behavior profiles in terms of attachment security. Although largely replaced by the attachment Q-set (Waters & Deane, 1985) we have included the complete criteria for scoring the attachment–exploration balance at home as Appendix V as a reminder of the important role secure base behavior at home played in the Baltimore Study.

Despite its convenience and demonstrated usefulness, the SSP was never intended to foreclose further ethological study of secure base behavior. Moreover, now that research has established the relevance of the secure base concept beyond infancy, indeed well into adulthood (e.g., Waters &

Cummings, 2000; Crowell et al., 2002), and with hand-held (and smaller) video recording equipment available and inexpensive, research on secure base behavior in naturalistic environments deserves high priority on the agenda of attachment study.

Origins of the Strange Situation

The Uganda observations were conducted in 1954 but, due to personal circumstances, were not published until 1967; observations for the Baltimore longitudinal sample were conducted in 1963–64. Quite a few studies examining brief mother–child separations predate Ainsworth’s Uganda and Baltimore studies and have been mentioned as precursors, if not models, for the SSP. For example, Shirley and Poyntz (1941) studied 101 boys and 98 girls aged 2–8-years-old who made semi-annual, day-long visits to a Harvard School of Public Health clinic as part of a larger longitudinal study of child development. Their approach was primarily descriptive and normative, with the goal of shedding light on children’s reactions to separation from their mothers. In most instances, a staff member picked the child up at home in the morning and drove them to the clinic for a full day of physical, medical, and psychological tests, along with lunch, play breaks, and a nap. In a quarter of the cases a parent brought the child to the clinic. A parent retrieved the child in the afternoon.

Shirley and Poyntz kept diary-type records of the child’s day at the clinic. In addition, at the end of the day, they obtained a verbal report of the initial separation and the trip to the clinic from the staff member who had transported the child. Subsequent analyses of specific behavior categories were based on these records. In addition, their report included descriptions of a number of cases, often from visits at several ages, to illustrate age trends and differences within age. The report also included comments on a wide range of behaviors that were not addressed in formal analyses. Their comments were on phenomena such as: (1) mother’s styles of negotiating the departure for the clinic, (2) low-keyedness during play-time (e.g., “killing time,” rejecting toys, sedentary play, absence of talking), even after obvious separation-related distress had abated, and (3) resuming crying upon mother’s return. Although observed in older children, such behaviors will be familiar to readers of *Patterns of Attachment*.

In a second report, based on the same sample, Shirley (1942) developed a weighted “adjustment assay” intended to reflect a child’s degree of separation-related distress independent of age and sex. She then identified 12 girls and 22 boys whose mothers met criteria for “over-protective” or “rejecting.” Based on a tabular (as opposed to statistical) analysis, Shirley and Poyntz (1941) concluded that:

A child’s level of adjustment depends little upon the extrinsic features of the day, and little even upon his health. It depends much more upon the

wholesomeness of his upbringing in the home, and the security and confidence and affection given him by his parents. A secure and wholesomely loved child goes forth to meet a new experience in a spirit of adventure, and comes out triumphant in his encounters with new places, new materials, and new friends, old and young. A child that is over-sheltered or under-loved goes forth from home with misgivings and doubts, and gives an impression of inadequacy and immaturity in his encounter with new experiences that makes him unwelcome either in the society of adults or children. (p. 217)

Shirley and Poyntz seem to have had a very good sense for children's separation-related responses and recognized the importance of the behavioral, emotional, and situational context when interpreting the meaning of behavior. Yet, their work hardly seems modern in comparison to the conceptualization, quantification, and analysis of both infant and maternal behavior in *Patterns of Attachment*.

Despite the value of the Shirley and Poyntz study, Ainsworth (personal communication) has said that she had in mind Jean Arsenian's (1943) study of mothers and children in a Massachusetts Reformatory for Women when she decided to develop a separation-reunion procedure for the Baltimore study. Arsenian studied the 24 young children (11.2–30 months) in order to better understand the dynamics of childhood "security" through the medium of an unfamiliar room. However, as she notes, due to the circumstances, the children had only intermittent contact with their mothers, half of whom served as aides in the institution nursery, the remainder being assigned to work in other parts of the facility. Moreover, having a baby seems to have been a source of status among the inmates, and the mothers often traded on this by being characteristically over-protective and over-emotional (i.e., demonstrative) with their children. Arsenian also suggests that the children had less opportunity to explore than usual for children their ages and thus their reactions were "probably more intense than for a non-institutional group."

The value of the study is limited by these unusual sample characteristics, arbitrary decisions underlying behavior coding, and the use of Lewinian field theory as an interpretive framework. Thus, aside from focusing on children in an unfamiliar room, Arsenian (1943) is unlikely to have influenced the particulars of the Baltimore study's observations or the laboratory assessments. Nonetheless, her conclusions certainly parallel Bowlby's and Ainsworth's intuitions about the origins of infant security:

The extent to which the strange situation was made secure by the presence of the adult evidently varied with the dependence of the child and with the history of his previous relationship with the adult. For independent children, the "substitute" mothers were adequate sources of

protection in the situation. Dependent children, on the contrary, were secure only in those instances where the adult who accompanied them was their own mother, whose affection and solicitude had been experienced constantly in the past. (p. 241)

This begins to capture the relational interpretation that is essential to Bowlby–Ainsworth attachment theory and must have resonated with Mary Ainsworth’s own thinking.

More important than either of these studies was John Bowlby’s invitation to participate in the 1961, 1963, and 1965 meetings of the Tavistock Seminars on Mother–Infant Interaction in London. These meetings afforded Mary Ainsworth a chance to present preliminary results from her Uganda observations and to keep abreast of Harry Harlow’s reports of his experimental studies on infant–mother interaction and attachment in rhesus macaques (see, Suomi, van der Horst, & van der Veer, 2008). Harlow was a talented experimenter and a keen observer. In addition he was careful and systematic in formulating hypotheses and interpreting results. It is clear that prior studies, particularly Arsenian’s, primed Mary Ainsworth to consider adding a standardized separation–reunion procedure to the Baltimore longitudinal study. However, it is equally clear that the SSP is not simply adapted from these studies. It was specifically designed to test hypotheses about the attachment–exploration balance and the secure base phenomenon.

Highlights and Issues

We usually consider a project fully reported once the key results have appeared in a series of journal articles. This may suffice even for high profile research that issues from especially active laboratories. However, this approach has diminished the impact of many important longitudinal projects, leaving us with a few key findings rather than a coherent picture and comprehensive evaluation. With few exceptions (e.g., Block, 1971; Sroufe, Egeland, Carlson, & Collins, 2005; and the contributors to Grossmann, Grossmann, & Waters, 2005) the organizers of major longitudinal studies have rarely found time or opportunity to portray the full sweep of their projects. Fortunately, this was not the fate of the Baltimore project.

Patterns of Attachment provides a much more coherent picture of the Baltimore project than would have emerged from journal articles alone. In addition, a substantial literature on the evolution of attachment theory provides useful reflections on the project’s context, rationale, and goals (e.g., Ainsworth & Bowlby, 1991; Bretherton, 2003). In addition to methods and results, the book also provides a concise yet detailed overview of attachment theory, and reviews and integrates previously published results. By giving full expression to the background and rationales for the design issues, measures, and key decisions

that shaped the Baltimore study, *Patterns of Attachment* goes beyond documenting and teaching; it illustrates the ethological approach in developmental research and effectively mentors readers who are new to attachment study.

Normative Issues

The theory Bowlby outlined in 1958 and extended in *Attachment and Loss* (Vol. 1) addressed the nature of human infant–mother relationships in evolutionary/normative perspective before turning to the sources of individual differences. Similarly, after describing the SSP methodology, *Patterns of Attachment* turns first (Chapters 5 and 13) to normative issues. Here the focus is on behavior patterns illustrating the infant’s interest in its social and physical environments and the sensitivity of attachment and exploratory behavior to context. These patterns, which stand out in strong relief across SSP episodes, are exactly the details and complexities on which psychoanalytic theory and the operant theory of dependency had faltered.

The normative patterns of proximity seeking and contact maintaining toward mother and stranger across episodes (Chapter 5, Figures 2–9) clearly confirmed what was also evident in the home. One-year-olds were continuously monitoring a wide range of internal and environmental inputs in order to maintain what Bowlby had described as an “apparently purposeful” attachment–exploration balance that could only be plausibly explained with a motivational model at least as complex as a behavioral control system.

The SSP also provided normative data relevant to the interchangeability of attachment figures (mother vs. stranger) and the kinds of cues that activate and terminate attachment behaviors. Although such issues are not hotly contested today, establishing a sound normative picture of the attachment–exploration balance in different contexts helped ease the way for understanding and acceptance of the new paradigm.

Individual Differences

Although the normative issues addressed in the Baltimore project were central to attachment theory, *Patterns of Attachment* is best known for the secure, avoidant, and resistant/ambivalent classifications used to summarize individual differences across SSP episodes. These patterns reflect qualitative differences in the manner and effectiveness with which an infant organizes and maintains its secure base behavior with respect to a particular figure. That is, how well the attachment control system tracks its set goal of *felt security* across time and context.

Unfortunately, it can be difficult to evaluate how well a control system tracks its set goal. This is especially so if, instead of maintaining a single variable such as distance or temperature, the set goal is conceptualized as *satisficing*

(Simon, 1956, p. 129; Sroufe & Waters, 1977) over several facets or variables. The task was all the more difficult in the Baltimore home observations because each home had a unique physical layout and the mothers' behavior was unconstrained by specific instructions. In contrast, the SSP provided a consistent physical layout, the mothers' behavior could be constrained somewhat without seeming out of place as it might at home, and the range of infant behavior was somewhat limited by the layout, toys, and sequence of episodes. Nonetheless, capturing the organization of behavior in the SSP, as opposed to simply quantifying discrete behaviors, presented a significant challenge. The strategy adopted for the Baltimore project was to identify behavior profiles associated with more or less effective secure base use over the episodes of the SSP and then to relate these to secure base behavior at home and to antecedent patterns of maternal care.

Even before the Baltimore project, Mary Ainsworth had a great deal of experience summarizing behavior in terms of patterns and classifications. As early as her Ph.D. thesis she noted that, in conceptualizing adult adjustment in terms of security, "it has become apparent that the *pattern* of adjustment (over domains) is more significant for the understanding of the individual than any single measurement, or any total score" (Salter, 1940, p. 13). She had also found classification a useful tool for organizing her Uganda observations. Pattern-based analysis had also played a significant role in her work as a psychodiagnostician at Baltimore's Sheppard and Enoch Pratt Hospital in Baltimore between 1955 and 1961 (Ainsworth, 1983).

The Baltimore project was initiated in an era when many (perhaps most) psychologists viewed classifications systems with skepticism, associating them with unreliable assessments, illusory typologies, and armchair interpretations. However, this was not the spirit in which Ainsworth proposed her use of classificatory methods. Instead, she used classification as a tool for description, for representing order and organization in the overwhelming complexity (and volume) of her observational data (see *Patterns of Attachment*, pp. 55–59). She specifically eschewed the notion that attachment patterns explain behavior. Instead, when patterns were detected they became the phenomena to be explained, starting points for the next step in discovery. Despite some initial objections, significant links to secure base behavior at home and to key aspects of maternal care demonstrated the value of this approach.

The ABC's of Attachment Patterns

Today, *Patterns of Attachment* is familiar first and foremost for the ABC classification system. Less well known (or remembered) is the initial reason for delving into individual differences. This is not to say that a classificatory system based primarily on reunion behavior was obvious. Only that the ABC classification system is rooted in issues other than individual differences per se.

Early Experience and Attachment Security

One of the key insights Bowlby valued in psychoanalysis was the idea that early experience plays an important role in later development. For developmental psychologists, this implied, among other things, the prediction that better quality maternal care would be associated with earlier attachment onset. Psychoanalysts, psychologists, pediatricians, and even baby care experts had suggested a wide range of maternal behaviors as likely to accelerate or delay attachment development. Sorting out the facets of early care that influenced attachment development was viewed as significant for both theory and practice.

The narrative records from each quarter's home visits provided detailed information about a wide range of potential influences on attachment development. These ranged from breast vs. bottle feeding, schedule vs. *ad lib* feeding, various sleeping arrangements, frequency or duration of close bodily contact and face to face interaction, to interactive behaviors such as sensitivity to signals, cooperation with ongoing behavior, acceptance of the baby's needs, and psychological and physical accessibility.

Separating the wheat from the chaff required a criterion for attachment onset with which maternal behaviors could be correlated. Unfortunately, it was already becoming clear that there was not going to be a well-validated criterion for attachment onset. Although there might be a fairly narrow window within which preference was established, this occurred very early and proved very sensitive to context. Moreover, this was more akin to *bonding* than to the kinds of *attachment behaviors* that Bowlby incorporated into his control systems model and that most experts had in mind as signs of strong or weak, secure or insecure, attachment. Similarly, developmental psychologists recognized that the ability to distinguish mother from others was a necessary precursor of attachment. However, it emerged long before the infant was capable of using her as a secure base. Similarly, responses to strangers (Spitz, 1965) and to separation from mother (e.g., Schaffer & Emerson, 1964) were suggested as signs of attachment onset. Such behaviors were too sensitive to context to serve as reliable criteria (Sroufe, Waters, & Matas, 1974). Other potential criteria for attachment onset seemed too closely tied to the mechanisms that control locomotor and sensorimotor development to reflect the impact of maternal behaviors.

In one of the key insights of early attachment study, Mary Ainsworth recognized that instead of sorting out maternal behaviors by correlating them with the age of attachment onset, she could instead correlate them with qualitative outcomes once attachment was clearly established. That is, instead of searching for maternal behaviors that led to earlier attachment onset, she would search for those that were most closely associated with a good outcome toward the end of infancy—where a good outcome refers to a criterion rooted in attachment theory, i.e., the attachment control system tracking its set goal smoothly and consistently.

Associations between SSP classifications and first and fourth quarter maternal behaviors, presented in Chapters 7 and 8 and in Tables 15–17, did a very nice job of identifying key maternal behaviors. The primary first quarter correlates mapped very well into four facets of maternal care assessed using behaviorally based rating scales, sensitivity to infant signals, cooperation with ongoing behavior, acceptance of the infant's needs, and physical and psychological availability. Importantly, these are the variables that are most plausibly linked to acquiring expectations about the mother's availability and responsiveness, and to the sense that she is "always there for me." This result provided important support for Bowlby's and Ainsworth's view of attachment as a secure base relationship grounded on trust rather than the strength of a libidinal bond. It also supported the idea that, contrary to psychoanalysts' expectations, negative attachment outcomes could arise in the absence of significant trauma.

Home Behavior and the Validity of the SSP

Obviously, it would be difficult to justify the SSP as a measure of individual differences in attachment security or secure base use if it were not significantly linked to secure base behavior at home. The key results on this point are summarized in Chapter 12 and Table 29, Classification of Strange Situation Behavior and Classification of Attachment–Exploration Balance Behavior at Home. Surprisingly, nearly two decades (and many studies using the SSP) passed before this key result was replicated (Vaughn & Waters, 1990). Van IJzendoorn, Vereijken, Bakermans-Kranenburg, and Riksen-Waldraven (2004) have summarized a number of subsequent studies validating the SSP against Attachment Q-set (AQS) assessments of secure base behavior at home. The results consistently show that secure base behavior at home is significantly related to secure vs. insecure classifications in the SSP. This is important evidence that the secure vs. insecure SSP classification is related to the security construct and to the secure base phenomenon observed at home.

Replication

The key findings from the Baltimore study have generally stood the test of time. However, as in other areas of science, the results in replication studies are not consistently as strong as in the original. A number of factors can influence replication results. These include: (a) familiarity with the SSP scoring and classification system, (b) observation skills and familiarity with the home observation scales, (c) the number and duration of home observations, (d) the samples on which replications are performed, and (e) the theoretical relevance of predicted correlates. Naturalistic observation is difficult and requires considerable experience with the behavior being observed. It is never as simple as

reading scale definitions and starting to observe. Ideally, observers have access to training materials, pilot subjects, and mentors who can help build expertise in naturalistic observation before they begin collecting data.

Although training in SSP procedure and scoring has long been available through Alan Sroufe's group at the University of Minnesota, nothing comparable has been developed to help researchers become expert observers of maternal and infant behavior at home. Waters and Deane's (1985) Attachment Q-set for assessing infant secure base behavior and Pederson and Moran's (1995) Maternal Behavior Q-set for assessing maternal sensitivity in naturalistic settings have been very useful in this regard. The items in these Q-sets provide considerable information about the level of detail at which the "action" takes place and the role context plays in the meaning of key behaviors. Nonetheless, a Q-set cannot fully replace working with an experienced mentor. A set of first-rate video recordings that effectively capture the experience of making 60–90 minute observations in a variety of contexts would significantly advance training opportunities. However, even with current video recording equipment, capturing, editing, and providing commentary across the full range of individual differences would be a significant undertaking.

It is a significant limitation that many researchers continue to base assessments on observations that are simply too few, too brief, and sample too few contexts to provide a representative sample of a caregiver's typical behavior. Although it may not be necessary to obtain the full 12–16 hours of observation that were collected each quarter in the Baltimore study, single observations of brief interactions in one or two contexts (e.g. feeding and free play) are unlikely to provide reliable estimates of infants' or mothers' typical behavior. Waters (1978) illustrated the use of traditional psychometric methods for assessing the duration of observation intervals necessary to reliably assess individual differences in infant and maternal behaviors and there have been many relevant developments in reliability assessment since then. These methods should be used more often in designing observation schedules and evaluating the representativeness of observational data.

It is also important to take into account the diversity of samples used in current research. The Baltimore sample was very homogeneous. Moreover, very few of the mothers worked outside the home or made use of extensive substitute care during the first year. Today, substitute care arrangements are very common and very diverse with respect to frequency, duration, and quality. It is very useful that attachment research has branched out to include a wide range of cultural and at-risk samples. After all, cross-community, cross-cultural, and clinical relevance have always been central to the translational goals of attachment research. At the same time, attachment researchers have not always been attentive enough to the measurement implications of sample characteristics. Low correlations between facets of care and infant security in families very different from the Baltimore sample deserve more probing analysis

than simply dismissing them as failures of replication. Sometimes a low correlation is the answer to an interesting new question.

Finally, the strength of replication results is going to be related to how tightly a prediction is tied to attachment theory in the first place. Researchers who are new to attachment study or not yet thoroughly versed in attachment theory have often designed studies that seem less tied to predictions from attachment theory than to the hypothesis that “all good things go together” (Waters, Corcoran, & Anafarta, 2005). When such findings are significant in an initial study it is likely that they are either due to spurious influences or have simply occurred by chance. In replication studies they are likely to be attenuated or to disappear altogether. This hardly counts as a replication failure. Indeed, it is useful that such results tend to fall away because they only represent noise in efforts to integrate and synthesize accumulating results.

The evolution of measurement instruments and methods plays an important role in driving science forward. When new instruments and methods become available, early adopters play a useful role by investigating their relevance in new domains. However, instrument-driven research is not a substitute for theory-driven hypothesis testing. Indeed, it often becomes little more than an empty search for statistically (if not theoretically) significant results. Attachment study is not immune to this. The problem with significant but theoretically tenuous correlations is that they eventually accumulate to the point that they cannot be interpreted within any sensible attachment theory framework. Sometimes even significant correlations can be too much of a good thing. Progress in attachment study depends on research that is theory-driven, not instrument-driven. With occasional lapses, attachment researchers have managed this rather well. This is important because theoretical reviews and meta-analyses depend on the quality of the underlying research. The Baltimore study remains a valuable model not only for its results but also for the level of expertise and effort underlying its results.

The Baltimore study entailed a level of craftsmanship that does not easily scale to large samples. At the same time, larger samples and more diverse samples open doors that the Baltimore study could not. In the end, the validity of the SSP rests broadly on its links to secure base behavior outside the laboratory, other theoretically based external correlates, and discriminant validity vis à vis alternative interpretations. Overall, the SSP has earned its reputation as a measure of an infant’s confidence in a particular caregiver’s accessibility and responsiveness and its ability to use her (or him) as a secure base from which to explore and as a haven of safety and comfort when required. Nonetheless, it is important to confirm that the SSP is providing a window on secure base behavior at home whenever it is first used in any sample markedly different from the healthy, home reared, one-year-olds observed in the Baltimore study. This step has been overlooked in far too many cross-cultural samples, studies of new classification schemes, and studies of the SSP beyond infancy. It should become standard procedure.

Of course, the results of such studies will not always be positive (e.g., Posada, 2006). The fact that the SSP cannot stand in place of home observations in every instance is problematic for individual studies. An SSP that is not correlated with relevant home behavior would likely have other interesting correlates. However, these correlates should not be interpreted as correlates of secure base behavior. Importantly, this would not present a challenge to attachment theory per se. Why? Because infant attachment theory is not a theory about the SSP. Both the evolutionary rationale, the concept of biases in infant learning abilities, and the hypotheses about origins in the early caregiving environment address the behavior of human infants in naturalistic settings. The theory stands or falls on these issues, not on the validity of a particular test. Inevitably, there will be some cultures, age groups, or special populations in which the SSP is not significantly correlated with secure base behavior at home. In these contexts we can always base our assessments on observations in the home and other naturalistic settings.

Disorganized Attachment

The ABC classification system was always intended to be open to extension to capture newly noticed behavior patterns and data from new populations. Even during the Baltimore project, Ainsworth and her students noticed reunion responses in the SSP that were not fully comprehended by the initial classification scheme. For example, the B₄ pattern was not seen in the first 23 mother–infant dyads (subsample 1) of the Baltimore project.

By far the most influential addition to the ABC classification system has been Main and Solomon's (1986, 1990) discovery of a group of infants who were initially designated *unclassified* and are now classified Disorganized (Group D). The hallmark of the D group is a diverse array of odd, fearful, disjointed, contradictory and seemingly inexplicable behavioral responses exhibited by infants to the caregiver in SSP reunion episodes. In the Baltimore study these behaviors were infrequent and too difficult to comprehend to suggest a new classification. However, such behaviors were quite common in studies of maltreated and high-risk samples and clearly warranted theoretical analysis, a distinct classification, and prospective studies of antecedents and sequelae (e.g., Carlson, Cicchetti, Barnett, & Braunwald, 1989). Much of this work is summarized in Lyons-Ruth and Jacobvitz's (2008) *Handbook of Attachment* chapter and in Solomon and George's (2011) volume devoted to disorganized attachment and caregiving.

Attachment Is a Relationship, Not a Trait

Attachment theory and the Baltimore project were designed to shed light on a child's first and most lasting relationship. For almost four decades, discoveries from SSP research have guided the development of attachment theory and helped clarify the place of attachment in social and emotional development.

The fact that SSP classifications with mother and father are often different makes the important point that the procedure primarily assesses individual relationships, not general relationship styles (see Sroufe, 1985). Avoidance and resistance are test behaviors observed primarily in the SSP reunion episodes. Such behaviors are rarely observed in non-test settings. Their value for assessment is based on links to the secure base organization of behavior at home, not discrete behaviors that seem phenotypically similar to avoidance or resistance in the SSP. Indeed, Sroufe, Fox, and Pancake (1983) have reported that infants who were avoidant or resistant in the SSP, were, paradoxically, overly dependent on their preschool teachers when they were observed at 47–60 months of age (p. 1625).

The idea that qualities of first relationships eventually become or moderate trait-like individual differences (e.g., Bowlby, 1988) is intriguing and finds some support in personal and clinical experience. However, there is little research support for generalizing from specific attachment-related behaviors to trait-like consistencies across context, behavioral domains, or age. Moreover, as Rutter (1995) has pointed out, it is not clear what kinds of processes could lead to such outcomes. Bowlby–Ainsworth attachment theory is built on the recognition that, even in infancy, attachment behavior is sensitive, adaptive, and coherent across context and age. The limitations of trait constructs became evident as soon as developmentalists recognized the meaning, complexity, and coherence of attachment behavior. A satisfactory descriptive/explanatory framework required an entirely new paradigm that drew concepts from cognitive psychology, ethology, control systems, and evolutionary theory.

Despite these caveats, it seems likely that the use of avoidant, resistant, disorganized, etc. as descriptors will persist in the attachment literature and in informal discussion. Although this is often convenient, it is important to keep in mind that these are merely labels. They should not be reified and their verbal associates are not a sound basis for drawing inferences or generalizations. Although humans are comfortable thinking in terms of traits and types, truly trait-like consistency is relatively uncommon. Moreover, as Wiggins (1997) has emphasized, traits label and summarize behavior. They do not explain it. If avoidance, resistance, and disorganized behavior were strongly trait-like across situations and age, the challenge would be to explain why. If we allow the charm of interesting labels to undermine clear thinking and problem formulations or to suggest magical explanations, we risk losing the key descriptive and theoretical insights underlying attachment theory.

Conclusion

John Bowlby's and Mary Ainsworth's developmental attachment theory is one of the landmark accomplishments of 20th century social and behavioral sciences. It has generated a wealth of empirically testable hypotheses and innovations in

assessment methods. Research has supported the key hypotheses and these results have fared well in replications across a wide range of communities and cultures. Moreover, Ainsworth's conceptualizations of maternal care and interaction and the secure base phenomenon have provided a useful framework for research on attachment relationships well beyond infancy (e.g., Ainsworth, 1989; Crowell et al., 2002; Waters & Waters, 2006). Although attachment theorists and researchers need to be vigilant about keeping the secure base concept at the center of theory and assessment, the theory remains a rich source of new insights about relationships and development. It is also beginning to realize Bowlby's and Ainsworth's goal of having significant impact on prevention and intervention (e.g., Berlin, Zeanah, & Lieberman, 2008; Atkinson & Goldberg, 2004; Marvin, Cooper, Hoffman, & Powell, 2002). We are delighted that Taylor & Francis have selected *Patterns of Attachment* for inclusion in the *Classic Editions* series. *Patterns of Attachment* is indeed a classic and deserves to remain widely available as a resource and a model for new generations of attachment researchers.

Everett Waters, Ph.D., Professor, Department of Psychology, State University of New York at Stony Brook

Inge Bretherton, Ph.D., Professor Emerita, Department of Human Development and Family Studies, University of Wisconsin–Madison

Brian E. Vaughn, Ph.D., Professor, Human Development and Family Studies, Auburn University

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PREFACE (1978)

This book is about the attachment of infants to their mother figures. In it we focus on how infant behavior is patterned. We approach this patterning in two main ways. First, we examine the way in which a baby's behavior is patterned when the attachment system is activated at varying levels of intensity through simple manipulations of his environment in a laboratory situation, which we have called the "strange situation." When examining the baby's responses to controlled environmental changes, we observe the way in which his or her attachment behavior interacts with other behavioral systems that are also activated at varying levels of intensity and that may either compete or conflict with attachment behavior or augment the intensity with which attachment behavior is manifested. Second, we identify certain important individual differences in the way in which behavior is patterned—both attachment behavior and behavior antithetical to it—and seek to understand how such differences may have arisen and how different patterns of attachment may influence development.

We undertook writing this book in order to present the information about infant–mother attachment that we had gained through the use of a standard laboratory situation and to compare the manifestations of attachment in that situation with manifestations of attachment observed at home. We also wished to review the findings of other investigations of attachment, especially those that are directly comparable with ours because of their use of our strange-situation procedure, and to compare their findings with ours, including the findings of investigations that studied children older than the 1-year-olds upon which our work focuses and those that are concerned with an infant's attachment to figures other than the mother. We report much empirical detail, which will be of interest to all those who investigate a young child's

early interpersonal relations. The empirical detail leads, however, to a discussion of theoretical issues of major significance. Implicit in both the empirical findings and in the theoretical discussions are clues both to the understanding of developmental anomalies and to ways in which such anomalies might be prevented, assuming the feasibility of early intervention in families in which new babies are expected or have recently arrived. Therefore, we believe that this volume will be of interest not only to those concerned with theory and research into early social development, but also to diverse classes of persons concerned with the practical job of providing better infant care and facilitating optimal development in young children.

It seems suitable in this preface to introduce the reader to the strange situation and to describe how we happened to use it and why we judged the findings stemming from its use to be of sufficient significance to focus a book on them. The “strange situation” was the label assigned by Ainsworth and Wittig (1969) to a standardized laboratory procedure in which several episodes, in fixed order, were intended to activate and/or intensify infants’ attachment behavior. These episodes were designed to approximate situations that most infants commonly encounter in real life. The adjective “strange” denotes “unfamiliar,” rather than “odd” or “peculiar”; it was used because fear of the unfamiliar is commonly referred to as “fear of the strange” (e.g., Hebb, 1946). All of the instigations to attachment behavior used in the strange situation involved unfamiliarity.

The strange situation was originally devised in 1964 for use in conjunction with an intensive longitudinal study of the development of infant–mother attachment throughout the first year of life, a naturalistic study in which infants were observed in their familiar home environments. This study of 26 mother–infant pairs living in the Baltimore area had been preceded by a comparable but less intensive study of 28 dyads living in country villages in Uganda (Ainsworth, 1967). Despite many similarities between the two samples in regard to attachment behavior, three behavioral patterns that had been highlighted in the Ganda study emerged less strikingly in the American study: the use of the mother as a secure base from which to explore; distress in brief, everyday separations from the mother; and fear when encountering a stranger. Perhaps if stronger instigation were provided, the American babies might be induced to behave in much the same ways as had the Ganda infants. In the belief that these behaviors might be evoked more incisively in an unfamiliar situation than in the familiar home environment, the strange situation was devised.

First, let us consider the use by an infant of his mother as a secure base from which to explore the world. One of us (Salter, 1940) had long been interested in the hypothesis, originally formulated by Blatz,¹ that a young child who had gained security in his relationship with his parents was emboldened thereby to strike out to explore the world, willing to risk the insecurity initially implicit

in a learning situation because he could rely on his parents to be available, responsive, protective, and reassuring. If his adventure evoked undue anxiety, the child could easily return to “home base,” in the expectation that his parents would provide the reassurance he needed. If, on the other hand, his relationship with his parents was insecure, then he might not dare to leave them to explore, not trusting them to remain available to him if he left or to be responsive when he needed them. Lacking trust, he would stick close to his base, fearing to risk the anxiety implicit in exploration and learning. This hypothesis was confirmed in the Ganda study (Ainsworth, 1963, 1967). Infants who were judged to be securely attached to their mothers explored actively while their mothers conversed with the observers, and indeed they might well leave the room or even the house in order to extend their exploratory activities. Yet most of these same infants were acutely distressed and ceased exploration if it were the mother who left them. By contrast, infants who were judged to be anxiously attached tended to remain close to the mother, perhaps clinging to her and exploring little or not at all.

In the course of the longitudinal study of Baltimore infants, however, nearly all babies left their mothers to explore the familiar home environment (Ainsworth, Bell, & Stayton, 1971), whether or not they were judged to be secure in their attachments to their mothers (Stayton & Ainsworth, 1973). Perhaps individual differences could be discriminated in an unfamiliar environment that might hence be expected to provide stronger instigation to attachment behavior.² Perhaps those who were anxiously attached to their mothers might be unwilling to explore when placed in an unfamiliar situation, whereas those who were securely attached would explore even a strange situation with the mother present.

Antedating our strange situation was Arsenian’s study (1943) of young children in an “insecure” situation and Harlow’s (1961) work with rhesus infants in an open-field situation. Both studies showed the effectiveness of the mother or mother surrogate in providing security for exploration. Subsequently, several studies of infants with and without their mothers in unfamiliar situations have provided clear-cut confirmation of the hypothesis that infants and young children tend to explore an unfamiliar environment in the mother’s presence, but slow down or cease exploration in her absence (e.g., Cox & Campbell, 1968; Rheingold, 1969), although infants will indeed leave their mothers *on their own initiative* in order to explore (Rheingold & Eckerman, 1970). The present study not only adds further evidence of these normative tendencies, but also throws light on individual differences in maintaining exploration under conditions that also activate attachment behavior.

Second, distress upon being separated from the mother has long been conceived as an indication that an infant has become attached to her (e.g., Schaffer & Emerson, 1964). Our longitudinal study of Baltimore infants showed, however, that the average baby did not consistently protest his mother’s

departure in the familiar home environment (Stayton, Ainsworth, & Main, 1973). Indeed some babies, who, by other behavioral criteria, were clearly attached to their mothers, showed very infrequent separation distress. The same finding had been noted in the case of Ganda infants (Ainsworth, 1963, 1967), but nevertheless the latter more frequently protested separation in a familiar environment than did the Baltimore babies. On the other hand, it is well known that, once attached to a mother figure, infants and young children tend strongly to protest being separated against their will and placed in an unfamiliar environment for any substantial length of time (e.g., Bowlby, 1953; Heinicke & Westheimer, 1966; Schaffer & Callender, 1959; Yarrow, 1967). Therefore it was of interest to subject the infants in the longitudinal sample to very brief separation experiences in an unfamiliar environment in order to compare their responses with similar minor separations in the home environment. It was expected that most would be distressed by separation in the strange situation, even though they might be infrequently distressed by little separations at home.

Third, it was of interest to observe infants' responses to a stranger in an unfamiliar environment. Although Spitz (e.g., 1965) maintained that fear of strangers (i.e., 8-month anxiety) was a milestone in normal development and a criterion that an infant had achieved "true object relations," and although Ganda infants (Ainsworth, 1967) had been observed to be conspicuously afraid of strangers toward the end of the first year, the Baltimore babies did not consistently show such fear in the familiar environment of the home. Therefore it was of interest to see whether the context of an unfamiliar environment would heighten their fear of strangers.

The structure of the strange situation followed from these lines of hypothesis and interest. Exploratory behavior was to be observed both in the mother's presence and in her absence. The infant's response to a stranger was likewise to be observed both in the mother's presence and in her absence. His response to his mother's absence was to be seen both when he was alone and when he was left with a stranger. His response to his mother's return after an absence was to be compared with his response to the return of the stranger after an absence. The episodes of the strange situation, which are described in detail in Chapter 2, followed from these considerations.

The 1-year-old, accompanied by his mother, was introduced to an unfamiliar but otherwise unalarming playroom where massive instigation to exploratory behavior was provided by a large array of toys. In the next episode, an adult stranger entered, who was tactful but nevertheless unfamiliar. Then came a brief separation episode in which the mother left the baby with the stranger. Then after an episode of reunion with the mother, there was a second separation in which the baby was first alone in the unfamiliar environment and then again with the stranger, who returned before the mother reentered. Because it was anticipated that experience in each episode would affect behavior in the next episode, the instigation to attachment behavior expected to be

the weakest was placed at the beginning and that expected to be strongest toward the end. The expectations that these mild instigations would be cumulative in their effect were fulfilled.

It must be emphasized that the strange situation does not constitute an experiment in the literal meaning of this term. Different groups of subjects were not assigned to different treatments in order to ascertain the relative effect of these treatments on some dependent behavioral variable. Nor was it our intent to assess the relative effects of the different kinds of instigation upon intensity of attachment behavior—an intent that would have demanded control of order effects. On the contrary, the strange situation was designed as a controlled laboratory procedure in which individual differences among infants could be highlighted, precisely because they were exposed to the same situation with the same episodes in the same order.

The findings that have emerged from the use of this procedure have indeed highlighted individual differences in the way infants respond to an accumulation of instigations to attachment behavior. Different patterns of strange-situation behavior, we propose, indicate differences in the way infant-mother attachment has become organized. We have observed the same patterns in four separate samples of 1-year-olds, and other investigators who have used our techniques for the identification of patterns of attachment have confirmed our findings. Just because the procedure provides increasingly strong instigation to attachment behavior through its cumulative nature, one may observe in a relatively short span of time attachment behavior under conditions of activation from relatively weak to very strong. In the familiar home environment, occasions for strong activation of attachment behavior are infrequent, so that it requires many hours of observation to encompass a similar range, especially in the case of a healthy infant reared in a social environment that is sensitively responsive to him.

Nevertheless, in our longitudinal study that provided for approximately 72 hours of observation of each infant throughout the first year, it was possible to observe patterns of attachment and, further, to relate these to patterns of maternal behavior. For the sample of infants thus longitudinally observed, it was possible to examine continuities and discontinuities of specific behaviors between the home and laboratory environments; more important, these two sets of data enable one to perceive the patterning or organization of behaviors that reflects continuity of an attachment of a distinctive nature, despite discontinuities in specific behaviors.

Consequently, the findings reported in this volume go far beyond the specific issues that the strange situation was initially designed to investigate. They throw light upon qualitative differences in the nature of the attachment relationship itself, and, in conjunction with longitudinal data provided both by ourselves and by other investigators, they also yield hypotheses of how such qualitative differences arose and how they exert an influence on subsequent development.

To anticipate a more detailed report of our findings, we can note that the episodes of the strange situation that made the most significant contribution to the identification of patterns of attachment were the reunion episodes—those in which the mother rejoined the baby after having been away for some minutes. This comes as a surprise to some who may have assumed that responses during the separation episodes—the episodes during which the instigation to attachment behavior might be assumed to be strongest—would be most significant. To us it was not surprising. The entire separation literature (cf., Ainsworth, 1962) suggests that the response to reunion after separation may well yield a clearer picture of the state of attachment than did the response to separation itself. After a relatively brief separation—lasting a few days or even a few weeks—it is common to observe a great intensification of attachment behavior upon reunion. The child seeks to be in close bodily contact with his attachment figure and also seeks to maintain close proximity over much longer periods than was previously characteristic of him. It seems that separation has shaken his trust in the mother's accessibility and responsiveness, so that he scarcely dares to let her out of sight lest she disappear again. Furthermore, he may be more ambivalent toward her than previously. It seems that the angry feelings aroused during the separation, when he felt abandoned, are not altogether dissipated upon reunion, but mingle or alternate with his desire for renewed contact, so that he both rejects and seeks to be close to his attachment figure.

Furthermore, a child may respond to separation, especially to a long and depriving separation, with "detachment" behavior, which gives the impression that he is indifferent to the whereabouts and behavior of his attachment figure. In fact, however, detachment seems likely to be a product of intense conflict between attachment behavior activated at high levels of intensity and avoidant behavior evoked by the seeming rejection implicit in the failure of the attachment figure to respond to him during the separation. This detachment behavior, like angry rejecting behavior, is not likely to vanish immediately upon reunion. On the contrary, it may be strengthened by the high-intensity activation of attachment behavior occasioned by reunion. Consequently a child may seem not to recognize his mother or may seem indifferent to her for a period of time after reunion and before intensified attachment behavior overtly reasserts itself.

Although one might expect to find these various reunion behaviors—whether they be intensified attachment behavior, angry resistance, or avoidant detachment—to be less conspicuous and/or less prolonged after the brief separations implicit in our strange situation, nevertheless it seemed reasonable to us to be alert for responses, similar in kind if not in degree, in the reunion episodes. Furthermore, because the strange-situation separations were so brief, it makes sense to suppose that individual differences in reunion behaviors reflect characteristics of the infant's attachment relationship to his mother—characteristics that were consolidated long before the strange situation was first encountered.

The final task of this preface is briefly to outline the structure of this volume. But before proceeding to that task, one further point is most suitably discussed here. The strange situation is admittedly somewhat stressful. Some have suggested that it is unjustifiably stressful. We must disagree. We would not have subjected over 100 infants to an unduly stressful procedure. We designed the situation to approximate the kind of experiences that an infant in our society commonly encounters in real life. All American mothers whom we have encountered do not hesitate to take their babies at least occasionally into unfamiliar environments—for example, to visit an adult friend unfamiliar to the baby or, less commonly, to take him to a day-care center, to a babysitter's home, or to a play group. While they are in this unfamiliar (but not otherwise alarming) environment, the mother may leave her baby for a few minutes—either alone or with a stranger—whether to accompany her hostess to another room, to go to the telephone, or to visit the bathroom. The strange situation was modeled on such common real-life experiences.

None of the mothers in any of our four samples came to the laboratory without having been informed in detail of every step in the procedure, how we expected a range of babies to respond, and why we had designed the episodes in the way that we had. Nearly all mothers that we approached agreed to participate with their babies; only one did so with any apparent misgivings, and she was the one mother in our longitudinal sample who had a full-time job and whose baby had begun to react negatively to her daily departures and returns. We emphasized that any episode could be curtailed if a baby became unduly distressed, but it was we who nearly always initiated a curtailment, while the mother showed no concern.

After the strange situation was over, we always spent substantial time with the mother and baby, giving the mother an opportunity to discuss the baby's reactions if she wished, but in any case offering an occasion for pleasant social interaction. In no case did we observe any continuing distress or any adverse effects attributable to the strange situation, and in the case of our longitudinal sample this was so in a follow-up visit three weeks later. Indeed we were soon convinced that *we* were far more concerned about the anxiety that might have been associated with the brief separation experiences implicit in the strange-situation procedure than were the parents—who had little or no compunction about imposing much longer separations on their babies, often under less than optimum conditions.

Nevertheless we acknowledge that the strange-situation procedure might not approximate common experiences of infants who are reared differently, whether in other societies or by atypical parents in our own society; and we cast no aspersions by our term “atypical,” for these may be highly sensitive parents who avoid all unnecessary occasions for separation. It seems entirely likely that Ainsworth's (1967) Ganda infants and Konner's (1972) Bushman babies could not have tolerated the strange situation. Recently Takahashi (personal communication)

informed us that the Japanese mothers of her sample would not consent to leaving their babies alone in an unfamiliar situation, although they did not object to leaving them with a stranger. The strange situation surely should not be imposed on a baby whose parents are reluctant to cooperate, especially if they have reason to expect that he would be especially disturbed either by separation or by encountering a stranger. For all but a few infants in our middle-class society, however, we are convinced that there is no uncommon stress implicit in the strange-situation procedure, and we are even more convinced that the scientific yield of the strange-situation procedure has been great indeed.

Now let us introduce the reader to the rest of this volume. Chapter 1 deals with the theoretical background that underlies our research. It is necessary in order to follow our interpretations of the findings. Those who are thoroughly conversant with ethological–evolutionary attachment theory (e.g., Ainsworth, 1969, 1972; Bowlby, 1969, 1973) will perhaps find little new in Chapter 1 and may wish to speed on to later chapters.

Part II deals with method. Chapter 2 introduces the reader to our total sample of 106 infants and presents the strange-situation procedure in the kind of detail necessary if others are to replicate it. Chapter 3 presents the behavioral measures we used in our data reduction. There are three types of assessment: (1) frequency measures of an ordinary kind, which are used chiefly to deal with “discrete” behaviors (specific behaviors considered separately from other behaviors); (2) special scoring of interactive behaviors (“categorical” measures that assume a degree of equivalence among goal-corrected behaviors with a common set-goal, and that thus themselves take behavioral patterning into account); and (3) classification of infants according to the patterns of behavior they displayed. Although the frequency measures are almost self-explanatory, the reader will need to become familiar with the categorical measures and with the classificatory system in order to follow our presentation of findings with understanding and ease.

Part III is concerned with results, both of our own strange-situation research and that of others who have used the strange-situation procedure with little or no modification. Chapter 4 contains a descriptive account of behavior in each episode of the strange situation. This analysis is ethologically inspired. It seemed desirable to provide this detailed account of strange-situation behavior before reducing the data to more manipulable behavioral measures. This account is prerequisite to the analysis of the activation and termination of specific behaviors, of changes in behaviors as the activation of the attachment system becomes more intense, and of the ways in which different attachment behaviors are alternative to each other and hence interchangeable to some extent. Chapter 5 is a normative account of behavioral changes across episodes of the strange situation. This analysis, reported previously for a smaller sample (Ainsworth, Bell, & Stayton, 1971), deals with the variations across episodes of the various behavioral measures. In a sense, it summarizes the detailed episode-by-episode analysis of Chapter 4.

Chapters 6, 7, and 8 deal with individual differences in strange-situation behavior. Chapter 6 is devoted to a multiple discriminant function analysis, which examines the reliability of the classificatory system that is our primary method of identifying patterns of attachment. Among other things, this analysis ascertains the extent to which the specifications for classification actually contribute to discriminating one classificatory group from the others. Chapters 7 and 8 focus on individual differences in our longitudinal sample, comparing strange-situation patterns with behaviors manifested at home during both the first and fourth quarters of the first year. Chapter 7 compares infant behavior at home with behavior in the strange situation. This analysis is highly pertinent to the issue of the stability of both attachment behaviors and patterns of attachment over time and across situations. It is also essential to the interpretation of strange-situation patterns as indicative of qualitative differences in the infant-mother attachment relationship. Chapter 8 examines the relationship of maternal behavior at home to infant behavior in the strange situation—an analysis that throws light upon the influence of individual differences in maternal behavior on individual differences in the quality of the attachment of infant to mother.

Chapters 9 and 10 are review chapters. Chapter 9 deals with the findings of other investigations of the behavior of 1-year-olds in the strange situation, whereas Chapter 10 is concerned with the behavior of children between 2 and 4. These important chapters extend the scope of our research. In most instances the findings reported therein confirm and extend our findings, although some studies, especially some of those dealing with older children, suggest limitations. Other studies yield apparent discrepancies between their findings and ours that seem best explained in terms of the use of different methods of appraisal.

We then return again specifically to a consideration of individual differences. Chapter 11 examines the stability of patterns of attachment and attachment behavior shown when the strange situation is repeated after varying lapses of time. Chapter 12 considers individual differences in patterns of behavior as they are more finely reflected in subgroup differences, over and above the way in which they are reflected in differences among the three main classificatory groups that were the theme of many of the findings reported in Chapters 6 through 11. These subgroups are too small for one to be able to meaningfully assess the statistical significance of the differences among them. Hence the reader who is interested in the general thrust of our argument rather than in possibly suggestive detail may wish to skip on to Part IV.

In Part IV the findings reported in Part III are discussed in the light of both theoretical considerations and other relevant findings reported in the research literature. Chapter 13 focuses on the discussion of the normative findings, which may now be better understood after our consideration of individual differences. Chapter 14 considers individual differences in the light of diverse

theoretical paradigms—evolutionary—ethological attachment theory (summarized in Chapter 1) and two paradigms stemming from social-learning theory. Here we attempt to deal with some recent criticisms of attachment research and of the concept of attachment. It seems obvious to us that these criticisms are attributable to divergent paradigms, leading to research asking different questions, and conducted with procedures different from ours. Insofar as it is possible to make a bridge between divergent paradigms, we believe that the findings reported in this volume provide a definitive reply to the kind of criticisms made to date. Finally, Chapter 15 provides an interpretation of the patterns of attachment that have emerged as the most significant set of findings of our research, along with a discussion of some of the ways in which they seem likely to influence early development.

Acknowledgements

Tied as it has been to our longitudinal research into the development of infant-mother attachment, the body of findings reported in this volume has taken many years to amass, and we are indebted to many who have played significant roles in this endeavor. Our first debt of gratitude is to the Foundations' Fund for Research in Psychiatry, which in 1962–63 awarded the grant, 62–244, that made it possible for this research to be launched. Since then, the research has been supported by USPHS grant RO1 HD 01712 and by grants from the Office of Child Development, the Grant Foundation, and the Spencer Foundation; this support is gratefully acknowledged. The appointment of the first author to the Center for Advanced Studies at the University of Virginia during 1975–77 finally facilitated the preparation of this volume.

Special appreciation goes to Barbara Wittig, who helped devise the strange situation and who carried out many of the original observations of infants both in the strange situation and at home. We also thank George D. Allyn and Robert S. Marvin, who also participated in data collection with the longitudinal sample, Sample 1. We are indebted to Silvia Bell and Mary Main for their independent work in collecting and analyzing data with Samples 2 and 4. Indeed we are deeply grateful to Mary Main both for the special data analysis to which she has given us access for this book and for her theoretical contribution, which has done much to forward our understanding of infants who show an anxious, avoidant pattern of attachment. Among those who played an active part in collecting and scoring Sample 3 data are Donelda Stayton, Larry Schutz, Thomas Pentz, Natalie Hirsch, and Inge Bretherton. Inge deserves special thanks for her excellent analysis of the total sample data in regard to behavior directed toward strangers. We thank the various gracious women who played the unrewarding role of the stranger in the strange situation. We cannot enumerate all those who helped with the analysis of the home-visit data for Sample 1, but we wish to thank them, together with others who helped with

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We are deeply indebted to the 106 mothers who, with their babies, participated in the strange situation. Most of them were motivated by a desire to support a study that aimed to extend our knowledge of early social development. We trust that their efforts will, in due course, result in some useful guidelines for mothers of young infants to facilitate the establishment of secure and harmonious attachment relationships. As for the 1-year-olds—who will probably not remember—we trust that their adventure in the strange situation and in social interaction afterwards will have been on the whole enjoyable.

Our debt to John Bowlby is great and many faceted. Not only is his formulation of attachment theory focal to the interpretation of our findings, but also his advice and encouragement have been vital throughout the several stages of this long project. In addition, although none of them can be held accountable for the final form of this volume, we were very much helped by John Bowlby, as well as by Robert Hinde and Mary Main, who read all or parts of earlier drafts and made cogent suggestions.

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MARY D. SALTER AINSWORTH
 MARY C. BLEHAR
 EVERETT WATERS
 SALLY WALL

Notes

- 1 MDSA first heard William Blatz speak of a child using his parents as a secure base from which to venture forth to learn when she was a student in his course at the University of Toronto in 1934–35. It was not until 30 years later (Blatz, 1966) that he explicitly published his “security theory.”
- 2 It now seems likely to us that the Ganda infants, being more afraid of strangers than the Baltimore infants were, found even the familiar home environment more stressful because of the presence of the visitor-observers, and that this highlighted individual differences in their use of the mother as a secure base from which to explore.

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PART I

Introduction

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1

THEORETICAL BACKGROUND

Introduction

Attachment theory was given its first preliminary statement in John Bowlby's 1958 paper entitled "The Nature of a Child's Tie to His Mother." It was fully launched by the first volume of his trilogy on *Attachment and Loss* in 1969, which was followed by a second volume in 1973. The first two reports of research inspired by Bowlby's early formulation were by Ainsworth (1963, 1964) and Schaffer and Emerson (1964). Since then there has been an increasing volume of research relevant to infant–mother attachment, including research into mother–infant interaction and into early social development. There is no doubt that the further formulation of attachment theory, as represented in Bowlby's major works (1969, 1973) was influenced by this research. In the meantime other statements of attachment theory have emerged, some of which (e.g., Ainsworth, 1969, 1972; Sroufe & Waters, 1977) dovetail closely with Bowlby's evolutionary–ethological approach. In contrast, others (e.g., Cairns, 1972; Gewirtz, 1972a, 1972b; Maccoby & Masters, 1970) have attempted to assimilate attachment theory to other earlier paradigms.

Attachment Theory as a New Paradigm

Bowlby's attachment theory stemmed from a convergence of several important trends in the biological and social sciences. An initial psychoanalytic orientation was integrated with the biological discipline of ethology and its insistence on viewing behavior in an evolutionary context; with psychobiology and its focus on neurophysiological, endocrine, and receptor processes that interact with environmental stimuli to activate and terminate the activity of behavioral

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systems; with control-systems theory, which directs attention to “inner programming” and links behavioral theory to an information-processing model of cognition; and with Piaget’s structural approach to the development of cognition. Although this integration was undertaken primarily to understand the origin, function, and development of an infant’s early social relations, that part of Bowlby’s theory that deals specifically with attachment is embedded in a general theory of behavior that owes much to its several origins.

Attachment theory might be described as “programmatic” and openended. It does not purport to be a tight network of propositions on the basis of which hypotheses may be formulated, any one of which, in the event of an adequate but unsuccessful test, could invalidate the theory as a whole. Instead, this is an explanatory theory—a guide to understanding data already at our disposal and a guide to further research. “Validation” is a matter of collecting evidence relevant to “construct validity” (Cronbach & Meehl, 1955), with the implication that the “construct” itself can be elaborated and refined through further research, rather than standing or falling on the basis of one crucial experiment.

Despite its lack of resemblance to a mathematicophysical theory, both the general theory of behavior and attachment theory amount to what Kuhn (1962) termed a paradigm change for developmental psychology—a complete shift of perspective. According to Kuhn, such paradigm changes are at the root of scientific revolutions and account for the major advances in science, even though much constructive endeavor must follow the advancement of a new paradigm before it is fleshed out fully.

Kuhn emphasized the difficulty encountered by adherents of earlier paradigms in assimilating the implications of the new paradigm. Such difficulty is unavoidable, for a new paradigm comes into being in an attempt to account for findings that older paradigms could not deal with adequately. For Bowlby the inexplicable findings pertained to a young child’s responses to separation from his mother figure. Although a new paradigm may build on older ones and must also account for the empirical findings that they dealt with adequately, the new paradigm cannot be assimilated to an old paradigm—not without such substantial accommodation that the old paradigm is changed beyond recognition and itself becomes a new paradigm more or less akin to the other new one that could not readily be assimilated. We hold that Bowlby’s attachment theory constitutes a new paradigm for research into social development. It is in terms of this paradigm that we interpret our findings—and indeed we view our findings as helping to flesh out the framework of the new paradigm.

Although in Chapters 9, 10, and 14 we also discuss some researches that stemmed from divergent paradigms, we are cognizant of Kuhn’s warning that it is difficult to move from one paradigm to another. Ainsworth (1969) attempted an elucidation of the differences between three major paradigms relevant to an infant’s relationship with his mother; we shall not repeat this endeavor here. The attachment theory that we shall summarize in this chapter

is based on Bowlby's paradigm, with particular emphasis on those aspects that are most relevant to the research with which this volume is concerned.

The Behavioral System

One of the major features of Bowlby's general theory of behavior is the concept of a behavioral system. To ethologists this "construct" is so fundamental that it scarcely requires explanation. (Nevertheless, see Baerends, 1975, for a detailed discussion of behavioral systems.) Bowlby holds that the human species is equipped with a number of behavioral systems that are species characteristic and that have evolved because their usual consequences have contributed substantially to species survival. Some of these systems are toward the labile end of an environmentally labile vs. environmentally stable continuum. An "environmentally stable" system manifests itself in much the same ways throughout almost all members of the species (or almost all members of one sex) despite wide variations in the environments in which the various populations that compose the species have been reared and in which they now live. The manifestations of a relatively "labile" system vary considerably across the various populations in the species in accordance with environmental variations.

For those who are not conversant with evolutionary theory, it is perhaps useful to explain that "survival," in terms of natural selection means species survival or at least population survival. It implies survival of the individual only to the extent that he or she survives to produce viable offspring and to rear them successfully. Natural selection implies that the genes of the most reproductively successful individuals come to be represented in larger proportion in the "gene pool" than the genes of individuals who do not survive long enough to reproduce, who survive but do not produce as many offspring, whose offspring do not survive to sexual maturity, or whose offspring do not reproduce, and so on. Given the natural-selection process, it is scarcely surprising that among the most environmentally stable behavioral systems characteristic of many species (including the human species) are those concerned with reproduction and with care and protection of the young.

It is generally acknowledged that the relatively long period of infantile helplessness characteristic of humans, together with a relative lack of fixed-action patterns, provides the necessary conditions for flexibility and learning—for adaptation to a very wide range of environmental variation. Nevertheless a long period of immaturity implies a long period of vulnerability during which the child must somehow be protected. Bowlby argues, therefore, that human young must be equipped with a relatively stable behavioral system that operates to promote sufficient proximity to the principal caregiver—the mother figure—that parental protection is facilitated. This system—attachment behavior—supplements a complementary behavioral system in the adult—maternal behavior—that has the same function.

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Attachment behavior conceived as a behavioral system is not to be equated with any specific bit of behavior. First, the external, observable behavioral components are not the only components of the system; there are intraorganismic, organizational components as well. These are discussed later. Second, there may be a variety of behaviors that serve the system as action components, and indeed a specific behavioral component may, in the course of development, come to serve more than one behavioral system. Nevertheless several behaviors may be classed together as serving a given behavioral system because they usually have a common outcome. The behaviors thus classed together may be diverse in form. They may be classed together because each is an essential component of a series of behaviors that lead to the outcome, such as nest building among birds, or they may constitute alternative modes of arriving at the outcome, as in the case of attachment behavior. Bowlby refers to the outcome as “predictable,” to imply that once the system is activated the outcome in question often occurs, although not invariably. If the outcome did not occur consistently enough and in enough individuals, however, the survival of the species would be at risk.

Predictable Outcome

The predictable outcome of a child’s attachment behavior is to bring him into closer proximity with other people, and particularly with that specific individual who is primarily responsible for his care. Bowlby refers to this individual as the “mother figure,” and indeed in the human species, as well as in other species, this individual is usually the biological mother. The mother figure is, however, the principal caregiver, whether the natural mother or someone else who plays that role. Some behavioral components of the attachment system are signaling behaviors—such as crying, calling, or smiling—that serve to attract a caregiver to approach the child or to remain in proximity once closeness has been achieved. Other components are more active; thus, once locomotion has been acquired, the child is able to seek proximity to his attachment figure(s) on his own account.

Causation of Activation and Termination of Behavior

Several sets of conditions play a part in the activation of a given behavioral system, both specific and general, and within both the organism and the environment. Bowlby notes that the most specific causal factors are the way in which the behavioral systems are organized within the central nervous system and the presence or absence of certain objects within the environment. From the study of other species, we also know that hormones may have a fairly specific influence on behavior, although our knowledge of hormonal influences on human attachment behavior or reciprocal maternal behavior is sparse indeed. Among

the more general factors that play a part in the causation of behavior are the current state of activity of the central nervous system—its state of “arousal”—and the total stimulation impinging on the organism at the time. These five classes of causation act together; no one of them may be sufficient to set a behavioral system into action unless one or more of the other factors are also favorable.

Among the various environmental conditions that may activate attachment behavior in a young child who has already become attached to a specific figure are absence of or distance from that figure, the figure’s departing or returning after an absence, rebuff by or lack of responsiveness of that figure or of others, and alarming events of all kinds, including unfamiliar situations and strangers. Among the various internal conditions are illness, hunger, pain, cold, and the like. In addition, whether in early infancy or in later years, it seems apparent that attachment behavior may be activated, sustained, or intensified by other less intense conditions that are as yet not well understood. Thus, for example, an infant when picked up may mold his body to the person who holds him, thus manifesting proximity/contact-maintaining behavior, even though his attachment behavior may not have been activated at any substantial level of intensity before being picked up. Or a somewhat older infant or young child may respond with attachment behavior to a figure—particularly a familiar one—who solicits his response and interaction. Indeed he may seek to initiate such interaction himself, and if the figure is a familiar caregiver or (later) an attachment figure, one could argue that the behaviors involved in the initiation and in the subsequent interaction operate in the service of the attachment system. As for the most specific intraorganismic factor—the organization of behavioral systems within the central nervous system—we shall only say at this juncture that whatever constitutional organization is present at birth becomes substantially modified and elaborated through experience, and that individual differences in experience may be presumed to result in different patterns of organization. Thus, although one may generalize to some extent about the conditions likely to activate attachment behavior, the factor of internal organization is highly specific to the individual and, in addition, specific to his particular stage of development.

The conditions for termination of a behavioral system are conceived by Bowlby as being as complex as the conditions of activation, and as related both to the intensity with which the system had been activated and to the particular behavioral component of the system that was involved. Thus the most effective terminating condition for infant crying is close bodily contact contingent upon being picked up by the mother figure (Bell & Ainsworth, 1972), whereas simple approach behavior in a 1-year-old may be terminated by achieving a degree of proximity without requiring close bodily contact. On the other hand, if the attachment system has been activated at a high level of intensity, close contact may be required for the termination of attachment behavior.

8 Theoretical Background

A note on terminology may be helpful to the reader. Bowlby (1969) uses the term “attachment behavior” to refer to both the behavioral system and to the behavioral components thereof—a usage that may occasion confusion among readers unaccustomed to the concept of behavioral systems. We have attempted to use the plural term, “attachment behaviors” to refer to the action components that serve the behavioral system, while reserving the singular term “attachment behavior” or the somewhat clumsy term “attachment behavioral system” to refer to the system.

Biological Function

The biological function of a behavioral system is to be distinguished from the causes of the behavioral system’s having been activated. It is an outcome of the behavioral system’s having been activated, but whereas there may be more than one predictable outcome, the biological function of the system is defined as that predictable outcome that afforded a certain survival advantage in the “environment of evolutionary adaptedness”—the original environment in which the system first emerged as a more or less environmentally stable system, and to which it may be said to be adapted in the evolutionary sense. Biological programming continues to bias members of the species to behave in the ways that gave survival advantage in this original environment. The biological function of the behavioral system may or may not give special survival advantage in one or another of the various environments in which populations now live, but unless changes in the average expectable environment render the behavioral system a liability, it will be maintained in the repertoire of the species.

Bowlby (1969) proposed that the biological function of the attachment system is protection, and he suggested that it was most specifically protection from predators in the environment of evolutionary adaptedness. Indeed, field studies of other species suggest that infants who get out of proximity to their mothers are very likely to become victims of predation. He argued, however, that even in the present-day environment of Western society a child is much more vulnerable to disaster (for example, to becoming a victim of a traffic accident) if alone rather than accompanied by a responsible adult (Bowlby, 1973). Indeed, he noted that even adults of any society tend to be less vulnerable to mishap if with a companion than when alone. Therefore, he felt comfortable about specifying protection as continuing to be the biological function of attachment behavior and its reciprocal parental behavior.

The implication is that the reciprocal behaviors of child and parent (Hinde, 1976a, 1976b, would term these “complementary” behaviors) are adapted to each other in an evolutionary sense. Thus, a child’s attachment behavior is adapted to an environment containing a figure—the mother figure—who is both accessible to him and responsive to his behavioral cues. To the extent that the environment of rearing approximates the environment to which an infant’s

behaviors are phylogenetically adapted, his social development will follow a normal course. To the extent that the environment of rearing departs from the environment to which his behaviors are adapted, developmental anomalies may occur. Thus, for example, an infant reared for a long period, from early infancy onward, in an institutional environment in which he has so little consistent interaction with any one potential attachment figure that he fails to form an attachment may, when subsequently fostered and thus given an opportunity to attach himself, be unable to attach himself to anyone (e.g., Goldfarb, 1943; Provence & Lipton, 1962.)

The foregoing example raises an important point for attachment theory—namely, that just as an infant is predisposed to exhibit attachment behavior under appropriate circumstances, he is predisposed to form an attachment to a specific figure or figures. The predictable outcome of both the activation of the attachment behavioral system and attachment as a bond is the maintenance of a degree of proximity to the attachment figure(s); and similarly, in each case, the biological function is protection. We discuss attachment as bond and its relation to attachment behavior later in this chapter. Here we merely wish to point out that it is under very unusual circumstances that an infant or young child encounters conditions such that his attachment behavior does not result in the formation of an attachment. Although, as noted above, institution-reared infants may not become attached to anyone, most family-reared infants do become attached, even to unresponsive or punitive mother figures.

Goal-Corrected Behavior

Species-characteristic behavior systems may consist of fixed-action patterns that operate more or less independently of environmental feedback or that may at least have some fixed-action components in the system. Bowlby's general theory of behavior specified, however, that species-characteristic behaviors may also be flexible and goal directed. Here he draws upon control-systems theory. A control system is a machine that may be described as operating purposively. The "goal" is built into the device by the men who program it, or "set" it. Feedback is the essential mechanism through which the machine achieves its goal. There is a mechanism for receiving "input" and one for effecting "output." The results of the output are fed back through the receptor mechanism to affect further output in accordance with the way the device is programmed.

The simplest kind of control system is a regulator—for example, a thermostat. The purpose is to maintain the temperature of a room at a level at which the thermostat is set—the specific "set-goal" of the device. (One may change the set-goal by changing the thermostat to another level.) When the receptor mechanism receives information that the room temperature has dropped below the level of the set-goal, it turns on the heating system through its effector

mechanism; when information is received that the temperature has reached (or slightly surpassed) the set-goal level, it turns the heating system off. Many of the physiological systems operate homeostatically in essentially the same way as a regulator.

A more complex kind of control system is a servomechanism, such as power steering. In such a system the “setting” is continually changed by the human operator, and the system acts to bring performance into accord with the setting at each change. Another example is the action of the antimissile missile. Here the instructions are built into the machine in the course of its manufacture; its set-goal is the interception of another missile. Its effector system alters the speed and direction of its movement in accordance with feedback from its receptor mechanism, which monitors not only the distance and direction of the other missile but also the way in which the discrepancy between their relative positions changes as a result of their movements relative to each other. The set-goal and action of the missile is like that of the peregrine falcon that “stoops” to intercept another bird in flight. The only substantial difference between the falcon and the antimissile missile is that the missile’s program was built into it by its manufacturers, whereas the falcon’s biological program results from natural selection. In the case of the falcon this programming provides the equipment that enables continuously changing visual input to guide the movements that control the course and speed of flight, so that the predictable outcome is the achievement of the set-goal—the interception of prey.

“Goal corrected” is the term that Bowlby (1969) suggests as preferable to “goal directed” to describe behavioral systems that are structured in terms of set-goals. He suggests that complex behavioral systems of this sort are characteristic of the human species—systems that may be described as purposive and flexible and yet that have a basis of biological programming. The attachment system provides an interesting example, because it has both the features of a simple regulator and the flexibility of a much more complex control system. The setting of the set-goal—that is, the degree of proximity to an attachment figure specified by the set-goal—differs from time to time depending on circumstances. When the set-goal is set widely, a child may venture a substantial distance from his mother before the set-goal is exceeded, attachment behavior is activated, and the specified degree of proximity restored.

As suggested earlier, however, a variety of different conditions may activate attachment behavior, in addition to exceeding the distance (and time) away from the attachment figure that was specified by the “original” setting of the set-goal. Depending on the intensity with which such conditions may activate the attachment system, the set-goal may abruptly change its setting to specify the required degree of proximity more narrowly. Indeed, when the attachment system is activated to a high degree of intensity, the set-goal may be close bodily contact, and attachment behavior will not be terminated until this new set-goal has been achieved. Furthermore, there is substantial flexibility in the

attachment behaviors that may be used for the achievement of the set-goal. The model of the simple regulator is approximated only when the attachment figure is stationary and inactive. The ways in which the attachment figure behaves influence the ways in which the child's repertoire of attachment behaviors is deployed to achieve the current set-goal. Finally, although the "behavioral homeostasis" associated with the simple regulator model has general descriptive value, the attachment behavioral system is organized along much more complex lines. Overemphasis on the simple model has led many to assume that Bowlby's attachment theory defines attachment behavior rigidly and exclusively in terms of seeking literal proximity—a conception that is inadequate even when describing the attachment and attachment behavior of a 1-year-old and that is clearly misleading when attempting to comprehend the behavior of the older child or adult.

Clearly Bowlby conceives of some very complex adult behavior stemming from species-characteristic behavioral systems. An example of this is parental behavior. In this case, however, there seems to be so much flexibility attributable to feedback from environmental conditions that the program followed by the system can only be perceived by stepping back from the details of behaviors in a given situation to look at the consistent pattern of behavior toward a common set-goal that is apparent across a variety of geographical and cultural environments.

Organization of Behavior

The behaviors classed together as serving a given behavioral system may be organized in different ways. The simplest mode of organization is chaining, in which the "output" of each link in the chain provides input to activate the next behavioral link—a mode of organization familiar to us through S-R psychology. Another more complex mode of organization, deemed by Bowlby to be more characteristic of most human behavior, is a hierarchical form of organization. One form of hierarchical organization is governed by a *plan* (Miller, Galanter, & Pribram, 1960.) In a plan, as Bowlby describes it, the overall structure of the behavior is governed by a set-goal, whereas the individual behavioral components for achieving the set-goal vary according to circumstances.

In the neonate the separate behaviors that may be classed together as attachment behavior because they promote proximity/contact with caregivers form a behavioral system whose components have minimal organization. Each behavioral component—for example, crying, sucking, smiling—has its distinctive conditions for activation and termination; and indeed, as Bowlby suggested, each might be viewed as a fixed-action pattern. About the middle of the first year of life, however, attachment behavior begins to become goal corrected and to be organized in accordance with plans although these may at first be very primitive.

As an example of a primitive plan of this sort, let us consider the case of the infant, engaged in exploratory play at some distance from his mother, who notices her get up and move away. Her movement may or may not have exceeded the limits of the proximity set-goal operative at the time, but the very fact that she takes the initiative in increasing the distance between them may arouse anxiety about her continuing accessibility, may narrow the limits of the set-goal, and may activate attachment behavior at a higher level of intensity. In such a case the baby may follow his mother with more urgency, seeking to establish closer proximity with her than before; he may signal to her by crying or calling, which may induce her to stop and wait for him or reverse direction and approach him; or he may do both. Even though this situation may evoke behavior no more complex than this, the baby may be viewed as having a primitive plan—namely, to get into closer proximity to his mother, and as having alternative behaviors available to him in terms of which he can implement his plan, choosing the one that best seems to suit his evaluation of the situation. Thus even a very simple plan has a set-goal and a choice of alternative behaviors, or perhaps a sequence of behaviors in terms of which the plan may be implemented and the set-goal achieved.

The Role of Cognitive Processes and Learning

It is clear that the organization of behavior in accordance with a plan involves cognitive processes and that these are far beyond the ability of the neonate. Only after considerable cognitive development has taken place does an infant become capable of plans. Although attachment theory cannot be identified as primarily a cognitive theory, Bowlby clearly conceives of the development of attachment as intertwined with cognitive development. Later in this chapter we mention some of the cognitive acquisitions that precede or coincide with important shifts in the course of the development of attachment. Here, however, we wish to make special mention of Bowlby's (1969) concepts of "working models" and "cognitive maps," which consist of inner representations of the attachment figure(s), the self, and the environment. Although it is obvious that such representational models become increasingly complex with experience, it is clearly necessary that some kind of simple representations of this sort be constructed before there may be hierarchical organization of behavior according to plans.

It is inconceivable that the way in which behavior systems characteristic of the human species operate would not be changed to a degree commensurate with the elaboration of representational models, and also with the further development of communication, especially the acquisition of language. Bowlby plainly indicates that this must be the case with the attachment system. Critics of attachment theory do not seem to have grasped the implications of either goal-corrected attachment behavior or hierarchical organization according to

plans; on the contrary they seem to have paid attention only to the simple regulatory or homeostatic model, which Bowlby did discuss in detail in conjunction with presenting the concept of set-goal. Under certain circumstances and within a certain early age range, this model does indeed capture the main features of the regulation of attachment behavior. Bowlby would agree with his critics that literal proximity specified in feet and yards is a very inadequate way of delineating the set-goal of the attachment system in the case of the older child or adult. Even for an infant this model yields an oversimplified picture.

Bowlby (1973) emphasizes the importance of the infant's confidence in his mother's accessibility and responsiveness. If in the course of his experience in interaction with his mother he has built up expectations that she is generally accessible to him and responsive to his signals and communications, this provides an important "modifier" to his proximity set-goal under ordinary circumstances. If his experience has led him to distrust her accessibility or responsiveness, his set-goal for proximity may well be set more narrowly. In either case, circumstances—her behavior or the situation in general—may make her seem less accessible or responsive than usual, with effects on the literal distance implicit in a proximity set-goal. (Carr, Dabbs, and Carr, 1975, have demonstrated this point by comparing the effects of the mother's facing or facing away from the child.) Simple expectations regarding the mother's accessibility and responsiveness, as they differ with circumstance, are incorporated into the representational model a child constructs of his mother figure.

As the representational model of his attachment figure becomes consolidated and elaborated in the course of experience, the child becomes able to sustain his relationship with that figure over increasingly longer periods of absence and without significant distress—provided that the separations are agreed to willingly and the reasons for them understood. Under such circumstances the older child or adult may employ distant modes of interaction to reaffirm the accessibility and responsiveness of the attachment figure. Telephone calls, letters, or tapes may help to ameliorate absence; photographs and keepsakes help to bolster the symbolic representation of the absent figure. (Robertson and Robertson, 1971, reported deliberate use of such symbolic modes in supporting the ability to withstand separation of children even in the second and third years of life.) Our language usage offers testimony that proximity/contact is often conceived at the representational level. We talk about "feeling close" to some one, "keeping in touch," and "keeping in contact."

Nevertheless, inner representations cannot entirely supplant literal proximity and contact, nor can they provide more than minimal comfort in the case of inexplicable and/or permanent loss of an attachment figure—neither for a young child nor for a mature adult. When people are attached to another, they want to be with their loved one. They may be content for a while to be apart in the pursuit of other interests and activities, but the attachment is not worthy of the name if they do not want to spend a substantial amount of time with their

attachment figures—that is to say, in proximity and interaction with them. Indeed, even an older child or adult will sometimes want to be in close bodily contact with a loved one, and certainly this will be the case when attachment behavior is intensely activated—say, by disaster, intense anxiety, or severe illness.

Interplay Among Behavioral Systems

Let us return to a consideration of attachment behavior as one of several behavioral systems that may be activated at a greater or lesser degree of intensity in any given situation. What happens when two or more systems are activated simultaneously? If one is very much more intensely activated than the others, that system determines the resulting overt behavior, and neither the observer nor the “behavior” may discern any conflict. If two systems are activated at more nearly equal levels of intensity, the more strongly activated may nevertheless determine the behavioral outcome, and the less intensely activated system may be represented only in terms of behavioral fragments, or perhaps identified in terms of the behavior that swings into action when the dominant system is terminated. An example is the behavior of a bird at a window feeding tray when a person comes to the window to observe the bird. In such a situation there is likely to be conflict for the bird between tendencies to feed and to flee. If feeding behavior is activated more strongly than flight, the bird will remain, but it may well manifest its conflict by interspersing feeding behavior with incipient “take-off” movements, which ethologists term “intention movements.” These movements are overt manifestations of the activation of the flight system, even though the bird continues to feed intermittently without actually flying away. If, on the other hand, the flight system is activated more strongly than the feeding system, the bird will fly away, but the fact that the feeding system is still at a significant level of activation will be shown if, as often happens, he soon returns to the feeding tray. And if the human observer is tactful enough to withdraw somewhat, it is likely that the flight system’s level of activation will be reduced to the extent that the level of activation of feeding behavior becomes relatively stronger and the bird will remain to feed. This kind of conflict with similar behavioral solutions may be seen in the responses of 1-year-olds to the stranger in the strange situation, and is reported and discussed in later chapters.

When the two competing behavioral systems are more nearly equal in level of activation, it is likely that both will be represented in overt behavior in one way or another. One way in which both might be represented is in alternate behaviors. Thus the bird, in our previous example, might alternate between flights away from the feeding tray and returns to peck a few grains before flying away again. Or in our strange situation, a 1-year-old child, conflicted between friendly approach to a pleasant but unfamiliar adult and a tendency to avoid her because she *is* unfamiliar, may approach the stranger but then immediately

withdraw (usually returning to the mother), only to pause for a moment and then approach the stranger again, perhaps repeating this sequence several times.

Another way in which both competing systems may express themselves in overt behavior is in some kind of combination. Coy behavior represents such a combination. A person—child or adult—both attracted to another person and wary of him/her, may simultaneously smile and look away, the smile serving an affiliative or sociable system and the look away serving a wary/fearful system. Sometimes a behavior, not activated intensely enough to override another behavioral system that blocks its expression, may be redirected toward a goal object other than toward the one that elicited it. Thus a person whose aggressive/angry behavior is activated by the actions of another of whom he is also afraid or fears to offend may “redirect” aggressive behavior toward a third person or toward an inanimate object—an outcome referred to by psychoanalysts as “displacement.”

Even when there is no substantial degree of conflict between systems—that is, when one system is activated so strongly as to clearly override another—our understanding of the organization of behavior is greatly enhanced if we view the operation of one behavior system in the context of other systems. Thus, to comprehend how 1-year-olds manifest attachment behavior in the strange situation, we must trace through, episode by episode, the interplay among attachment behavior, wary/fearful behavior, exploratory behavior, and in some episodes, sociable (or affiliative) behavior directed toward the stranger. The training that most of us have received does not make it easy to conceptualize the interplay of as many as four complex systems, let alone to take into account the complex conditions that determine the level of activation of each of them. Bischof (1975) provides a control-systems model that illustrates the interplay among the four systems that are of most concern to us in strange-situation research. Bischof would be the first to agree that even his complex model represents an oversimplification of the complexities of real-life behavior. Nevertheless, we believe it to be a fine contribution toward an understanding of how intraorganismic and environmental conditions operate to determine which of four behavior systems will be activated most intensely and thus will control behavioral output. The model is not complex enough, however, to handle the manifestations of conflict behavior described earlier in this section.

Behaviors May Serve More Than One System

In each species there may be a few specific behaviors that are unique to one and only one behavioral system. Examples of this are difficult to find in the human species. Looking, for example, may serve a wide variety of behavioral systems, perhaps from earliest infancy onward. One looks at a novel object, and this serves the exploratory system. One seeks eye contact with an attachment figure, or at least monitors his/her whereabouts with an occasional glance. One glares

at an antagonist toward whom one feels animosity. One may give a good, long look at a novel object, person, or situation that arouses wariness/fear, before either putting it at a distance, or “cutting off” the stimulus by looking away, or deciding that the object is more interesting than frightening and approaching it. Approach behavior itself may serve more than one system, as Tracy, Lamb, and Ainsworth (1976) have argued. Locomotor approach can serve the attachment system when the individual seeks proximity to an attachment figure. It can also serve exploration, food seeking, affiliation with figures other than an attachment figure, play, anger/aggression, and probably other systems as well. Furthermore, behaviors that in an early stage of development were especially linked with one behavioral system may at later stages occur, if only in fragmentary form, to serve either the same system or other systems. Thus, for example, behaviors displayed by an infant toward his mother may occur also in the adult as part of courtship/mating behavior. Thus in some species of birds, begging for food may be an integral feature of courtship—and human equivalents are not difficult to identify.

Bowlby (1969), in his chapter on “Beginnings,” enumerated various forms of behavior that “mediate attachment”—that is to say, specific behaviors that promote proximity, contact, and interaction with other persons and thus play a significant role in the development of attachment to one or a few such persons. We may identify these as “attachment behaviors,” because they clearly serve the attachment-behavior system, or as “precursor attachment behaviors” as Ainsworth (1972) did, because they are part of the equipment of the neonate and/or very young infant before he has become attached to anyone. There is nothing in attachment theory to imply that these behaviors serve the attachment system exclusively, even in early infancy. In his next chapter Bowlby listed a number of behaviors suggested by Ainsworth (1967) to be differentially displayed by an infant during his first year toward a particular figure toward whom he is, or is becoming, attached. Bowlby implied that these were useful indicators of the process of focusing on a specific figure. Some of them may also prove useful as criteria for describing an infant as having become attached to a particular figure. It was not intended by Bowlby and Ainsworth to imply: (1) that behaviors displayed differentially during an early phase of development necessarily continue throughout childhood and into adulthood to be displayed differentially to attachment figures; (2) that this list constitutes an adequate roster of behaviors that serve the attachment system during the second year of life and later; or (3) that these behaviors serve the attachment system exclusively. Indeed, as the organization of the attachment system becomes elaborated in the course of development, and as more and more forms of behavior become employed as alternative means of implementing the plans pertinent to interaction with attachment figures, it seems less and less useful to attempt an enumeration of attachment behaviors. Increasingly, the organization and patterning of behaviors become the focus of interest.

Attachment and Attachment Behaviors

Here we are concerned with the distinction between *attachment* as a bond, tie, or enduring relationship between a young child and his mother and *attachment behaviors* through which such a bond first becomes formed and that later serve to mediate the relationship. In developing attachment theory, Bowlby (1969) devoted much attention to attachment behavior as a behavior system, in the course of which he also discussed the specific behaviors that serve that system in infancy and early childhood. He devoted relatively little attention to an exposition of the relation between such behaviors and attachment as a bond. Indeed, we can assume that he considered it self-evident that the way in which the attachment-behavioral system became internally organized in relationship to a specific figure itself constituted the bond or attachment to that figure. Some readers, however, working within the framework of other paradigms, failed to grasp the organizational implications of the concept of a behavioral system, and concluded that attachment and overt attachment behavior were identical. Such a conclusion led to a variety of theoretical misconceptions: for example, that attachment has disappeared if attachment behavior, including separation distress, is no longer overtly manifested; that the intensity with which a child shows attachment behavior in a given situation may be taken as an index of the strength of his attachment; or that attachment consists in nothing more than the contingencies of the interaction between a child and his mother.

We have attempted to deal with the distinction between attachment and attachment behavior elsewhere (e.g., Ainsworth, 1969, 1972), and we return to this issue later in this volume, after presenting our findings. Here, however, we should like to remind the reader that Bowlby's attachment theory came about through his efforts to account for the response of a young child to a major separation from his mother and to reunion with her afterwards (Bowlby, 1969, preface). Therefore, it seems appropriate here to review a few of the phenomena that it make it necessary to assume the existence of a bond between a child and his mother that, once formed, continues despite separation, independent of either overt manifestations of attachment behavior or the contingencies implicit in ongoing mother-child interaction. First, it is necessary to distinguish between brief separations of minutes (or even hours) that take place in the familiar home environment and about which a child will have formed a system of expectations and an involuntary separation lasting for days, weeks, or months, during which a child may be cared for by unfamiliar persons in an unfamiliar environment. It is the latter that we have termed "major" or "definitive" separations, to distinguish them from brief "everyday" separations in a familiar environment.

A child's initial response to a major separation—either at the moment of parting or later when his expectations of a prompt reunion are violated—is to greatly intensify attachment behavior, protesting the separation and trying by

all means at his disposal to regain proximity/contact with his attachment figure. This protest is usually more than momentary, but how long it lasts and how intense it is depend on a variety of circumstances. As separation continues, however, the child's attachment behavior becomes either muted or more intermittently manifested, and eventually it may drop out altogether. If one were guided entirely by his overt behavior, one would say that he is no longer attached; but that the bond endures, despite absence of attachment behavior directed toward the absent figure, is vividly demonstrated in most children when reunited with the attachment figure. Whether with or without some delay, attachment behavior is activated at a high level of intensity—much higher than that characteristic of the child before separation. Were attachment identical with attachment behavior, one would be forced to conclude that separation first strengthens the bond, then weakens it, and finally destroys it. If one holds that the bond has altogether disappeared, it then becomes impossible to account for the fact that it reconstitutes itself so quickly after reunion. It seems to us more reasonable to view the bond as enduring despite the vicissitudes of attachment behavior.

If during separation from his mother a child is fortunate enough to be cared for by a substitute figure who plays a thorough maternal role, separation distress may be greatly alleviated, and the child may come to direct attachment behavior toward the substitute figure. Nevertheless such sensitive foster care does not diminish a child's attachment to his own mother figure; on the contrary it facilitates rather than hampers the prompt reestablishment of normal relations with her upon reunion (Robertson & Robertson, 1971).

To be sure, there may be some delay in the reemergence of attachment behavior after a long period of separation, especially if separation was experienced in a depriving environment without adequate substitute mothering—and this delay is associated with the length and extent of disappearance of overt attachment behavior during the separation itself. Upon reunion the child may seem not to recognize his mother, or he may reject her advances, or he may seem merely to be uninterested in proximity to or contact with her. It is noteworthy that such behavior is not displayed to the father or to other familiar figures. Robertson and Bowlby (1952) identified such a response as "detachment" and attributed it to repression. The implication was that the bond—the attachment—had not disappeared but was still somehow internally represented, even though attachment behavior was absent. In support of the view that attachment as bond had not been lost are the many observations of children whose "detachment" suddenly gives way to intense attachment behavior—following the mother wherever she goes, showing distress when she is out of sight for a moment, and wanting close bodily contact much more frequently and intensely than was characteristic of them in the pre-separation period. Given the sudden and dramatic shift between detached behavior and very intense attachment behavior, it is difficult to attribute the change to a process of relearning.

Whereas responses to separation and reunion especially highlight the distinction between attachment and attachment behavior, there are other more ordinary sources of evidence. The presence or absence of overt attachment behavior and the intensity with which it is manifested clearly depend on situational factors. For example, a child is more likely to manifest attachment behavior when he is hungry, tired, or ill than when he is fresh, fed, and in good health. It is difficult to conceive that his bond to his mother varies in strength from day to day or from moment to moment, even though the intensity of activation of attachment behavior so varies.

Emotion and Affect in Attachment Theory

In his general control-systems theory of behavior, Bowlby (1969) identified affect and emotion as “appraising processes.” Sensory input, whether conveying information about the state of the organism or about conditions in the environment, must be appraised or interpreted in order to be useful. Feelings (i.e., both affect and emotion) serve as appraising processes although not all appraising processes are felt (i.e., conscious). In the course of appraisal, input is compared to internal “set-points,” and certain behaviors are selected in preference to others as a consequence of this comparison. In this sense, feelings—whether “positive” or “negative,” pleasant or unpleasant—are focal in the control of behavior.

It was not until his 1973 volume, however, that Bowlby expanded on the role of feelings, giving particular attention to security, fear, anxiety, and anger. Let us briefly consider some important features of his argument. In the course of evolution each species develops a bias to respond with fear to certain “natural clues to an increased risk of danger.” It is of survival advantage for the individual to respond with avoidance, flight, or some other comparable form of behavior to situations that signal an increased risk of danger, without having had to learn through experience how to assess such risk. Among such natural clues to danger for the human species, he listed strangeness (unfamiliarity), sudden change of stimulation, rapid approach, height, and being alone. He particularly emphasized the tendency to respond especially strongly to compound situations in which two or more natural clues are simultaneously present. Although other clues to danger may be learned as derivatives of natural clues, through observation of the behavior of others or in more sophisticated risk-assessing processes, and although through experience a person’s fear may be reduced when natural clues to danger occur in now-familiar situations in which no risk has been encountered, these natural clues to danger nevertheless tend to continue to be appraised in terms of fear. Even a sophisticated adult is likely to experience fear in a compound situation, such as being alone in an unfamiliar environment in which illumination is suddenly reduced and strange noises are heard.

Fear behavior and attachment behavior are often activated at the same time by the same set of circumstances. When a young child is alarmed by one of the clues to increased risk of danger, whether natural or learned, he tends to seek increased proximity to an attachment figure. Should the attachment figure be inaccessible to him, either through absence or through an expectation of unresponsiveness built up through experience, he faces an especially frightening compound situation. Both components of such a situation are frightening, and the term *fear* may be applied to the appraisal of both. Bowlby presents a military analogy. The safety of an army in the field depends both on its defense against attack and on maintaining a line of communications with its base. Should the field commander judge that retreat is the best tactic, it is essential that the base be available to him, that he not be cut off from it, and that the commander in charge of the base be trusted to maintain the base and the support implicit in it. By analogy, the young child may be afraid of the threat implicit in the clues to danger he perceives in a situation, but he may also be afraid if he doubts the accessibility of his “base”—his attachment figure. Bowlby suggests that “alarm” be used for the former class of fear and “anxiety” for latter. This brings us squarely face to face with the issue of separation anxiety.

Bowlby emphasizes how crucial it is in a potentially fear-arousing situation to be with a trusted companion, for with such a companion fear of all kinds of situation diminishes, whereas when alone fear is magnified. Attachment figures are one’s most trusted companions. We all fear separation from attachment figures, but “separation” cannot be defined simply as a matter of absence of such a figure. What is crucial is the availability of the figure. It is when a figure is perceived as having become inaccessible and unresponsive, that separation distress (grief) occurs, and the anticipation of the possible occurrence of such a situation arouses anxiety.

Whereas a young infant is more likely to cry when he is alone than when he is in proximity or contact with his mother and his crying is most likely to be terminated promptly if his mother picks him up (Bell & Ainsworth, 1972), an older infant is likely to begin to form expectations and to experience anxiety relevant to his mother’s departure and/or absence. Thus, at some time in the second half of his first year, he begins to experience anxiety when his mother leaves the room, and may manifest this by crying or, after locomotion develops, by attempting to follow her.

Infants differ, however, in the consistency with which they exhibit distress in brief, everyday separations. It seems to us reasonable to suppose that there are concomitant differences in expectations. An infant who has experienced his mother as fairly consistently accessible to him and as responsive to his signals and communications may well expect her to continue to be an accessible and responsive person despite the fact that she has departed; and if she is absent for but a short time, his expectations are not violated. (This, of course, presupposes that the infant in question has developed a concept of his mother as a “permanent

object” as Piaget (1937) used the term, but also that he has developed a “working model” of his mother as available to him in Bowlby’s sense of these terms.) On the other hand, an infant whose experience in interaction with his mother has not given him reason to expect her to be accessible to him when out of sight or responsive to his signals is more likely to experience anxiety even in little everyday separation, as Stayton and Ainsworth (1973) have shown. Such an infant may be identified as anxiously attached to his mother, and Bowlby (1973) elaborates the theme of anxious attachment, both in terms of the kinds of experience that may contribute to it, not only in infancy but also in later years, and in terms of the ways in which anxious attachment may affect later behavior.

The opposite of feeling afraid (whether alarmed or anxious) is feeling secure—or, according to the Oxford Dictionary, feeling “untroubled by fear or apprehension.” When an infant or young child is with an attachment figure, he is likely to be untroubled by fear or apprehension, unless he is troubled by his expectations that he/she may become inaccessible at any moment and/or fail to be responsive to his needs and wishes. Thus the mere physical presence of an attachment figure is not necessarily enough to promote a feeling of security, although it very frequently seems to do so. One could expect that the older the child and the better articulated his representational model of the attachment figure, the less likely that the mere physical presence of the figure would be enough to provide a secure or untroubled state; whereas in the case of an infant whose expectations and representational models are still in an early formative stage, it is perhaps not surprising that he appears to be secure in his mother’s presence, until her actions or some other aspect of the situation activate his anxieties.

Just as when an infant feels afraid, his attachment behavior is likely to be activated (as well as fear behavior), likewise when he feels secure, his attachment behavior may be at a low level of activation. This accounts for the phenomenon that we have termed “using the mother as a secure base from which to explore.” When the attachment behavioral system is activated at low intensity, the situation is open for the exploratory system to be activated at a higher level by novel features of the environment. It seems of obvious survival advantage in evolutionary terms for a species with as long and as vulnerable a period of infancy as that characteristic of humans to have developed an interlocking between the attachment system, whose function is protection, and exploratory (and also affiliative) behavior, which promotes learning to know and to deal with features of the environment (including persons other than attachment figures.) This interlocking permits a situation in which an infant or young child is prompted by intriguing objects to move away from his “secure base” to explore them, and yet tends to prevent him from straying too far away or from remaining away for too long a time; and the reciprocal maternal-behavioral system provides a fail-safe mechanism, for “retrieving” behavior will occur if the child does in fact go too far or stay away too long. The interlocking between systems of this sort has led some to propose that the biological function of attachment behavior is (or

should include) providing an opportunity for learning. Bowlby (1969) obviously gives first place to the protective function and indeed might well have said explicitly that the biological function of exploratory behavior is learning about the environment, whereas the protective function of attachment behavior and reciprocal maternal behavior makes this possible. Obviously the functions of both systems are of crucial importance.

After this divergence from the theme of feelings as appraisal processes, let us return to anger. Bowlby (1973) reminded his readers about the literature on responses to separation that makes it clear that anger is engendered by separation or a threat of separation, and that this anger is particularly likely to be manifested at the time of reunion. The separation literature to which he referred, however, dealt with “major” or “definitive” separations in which a child was separated from attachment figures for a period of days, weeks, or months and was usually also removed to an unfamiliar environment. Perhaps separations of but a few minutes, whether in a familiar or unfamiliar environment, do not so consistently arouse angry feelings as do major separation experiences. Attachment-relevant anger is activated under conditions other than separation, however. If attachment behavior is activated at high intensity but not terminated by an appropriate response by the attachment figure, anger is very likely to ensue—whether the reasons for the nontermination are the absence of the figure (as in the case of separation) or its chronic tendency to be unresponsive.

This brief discussion of the affective implications of attachment has dealt with some of the most obvious aspects of affective involvement, but is far from complete. Both Bowlby (1969, 1973) and Ainsworth (e.g., 1972) have emphasized the notion that attachments imply strong affect—not only security, anxiety, fear, and anger, but also love, grief, jealousy and indeed the whole spectrum of emotions and feelings.

The Development of Child–Mother Attachment

Because this volume is not primarily devoted to the development of a child’s attachment to his mother figure, here we merely summarize what has been published in more detail elsewhere about the course of such development (Ainsworth, 1967, 1972; Bowlby, 1969). In 1972 we distinguished four phases of development of child–mother attachment; these correspond to Bowlby’s four phases, but with somewhat different titles. Three of these occur in the first year of life: (1) the initial preattachment phase; (2) the phase of attachment-in-the-making; and (3) the phase of clear-cut attachment. The 1-year-olds, to whom most of this volume is devoted, may be assumed to have reached Phase 3, and hence this phase will be considered more fully than either of the two earlier phases. A final phase was initially identified by Bowlby (1969) as: (4) the phase of goal-corrected partnership, which, he suggested, did not begin until about

the end of the third year of life, or perhaps later. It is therefore only the 4-year-olds, and possibly some of the 3-year-olds discussed in Chapter 10, who are likely to have reached this final phase of development.

1. *The Initial Preattachment Phase.* Bowlby (1969) called this the phase of “orientation and signals without discrimination of figure.” It begins at birth and continues for a few weeks. From the beginning the baby is more “tuned in” to stimuli within certain ranges than to others, and it seems likely that the stimuli to which he is most responsive come from people. At first, however, he does not discriminate one person from another, and hence responds to his mother figure (i.e., his principal caregiver) in much the same way as he responds to other persons.

The infant can orient toward anyone who comes into close enough proximity, directing his gaze toward that person and tracking the latter’s movements with his eyes. He is equipped with a repertoire of signaling behaviors—for example, crying, which is present from birth onwards, and smiling and noncrying vocalizations, which soon emerge. These signals serve to induce other people to approach him and perhaps to pick him up, thus promoting proximity and contact; hence they are classed as attachment behaviors. In addition, the infant is equipped with a few behaviors through which he himself can actively seek or maintain closer contact—for example, rooting, sucking, grasping, and postural adjustment when held. (Rooting and sucking obviously serve the food-seeking system as well as the attachment system, and indeed in bottle-fed babies, they tend to become splintered apart from the attachment system.) When the baby is not in actual contact with a caregiver, however, he can rely only on his signaling behaviors to promote proximity/contact—a state of affairs that persists throughout this phase and the next one.

As mentioned earlier, Bowlby (1969) suggested that the original behavioral equipment of the neonate consists of fixed-action patterns and that these become organized together and linked to environmental stimulus situations in accordance with processes of learning that have become well known through S–R psychology. At the same time it is easy to consider the neonate’s fixed-action patterns as equivalent to Piaget’s (1936) reflex schemata and to account for their modification in Piagetian terms. In either case the infant, even during this first phase of development, begins to build up expectations (anticipations), although at first, as Piaget held, these are inextricably tied to his own sensorimotor schemata and do not extend to using one environmental clue as a basis for anticipating another environmental event.

Phase 1 may be said to come to an end when the baby is capable of discriminating among people and, in particular, of discriminating his mother figure from others. Because discrimination is learned much earlier through some modalities than through others, it is difficult to judge when Phase 1 has ended and Phase 2 begun. There is evidence that the mother can be discriminated

very early through olfactory or somasthetic cues, whereas visual discrimination is relatively late in developing. Nevertheless, it is convenient to consider Phase 1 as continuing until the baby can fairly consistently discriminate his mother by means of visual cues, which tends to occur between 8 and 12 weeks of age.

2. *The Phase of Attachment-in-the-Making.* Bowlby termed this the phase of “orientation and signals directed towards one (or more) discriminated figure(s).” During this phase the baby not only can clearly discriminate unfamiliar from familiar figures, but also becomes able to discriminate between one familiar figure and another. He shows discrimination in the way he directs his various proximity-promoting (attachment) behaviors toward different figures, and these figures may also differ in how readily they can terminate an attachment behavior, such as crying. During this phase the baby’s repertoire of active attachment behaviors becomes expanded—for example, with the emergence of coordinated reaching. This phase of development roughly coincides with Piaget’s (1936) second and third stages of sensorimotor development, but here we shall not attempt to link cognitive development with the development of attachment, except to point out that the development of discrimination may be thought to involve Piaget’s processes of recognitory assimilation—or, for that matter, discrimination learning.

If simple preference of one figure over others is the criterion of attachment, then one could identify a baby as attached to a preferred figure in Phase 2. We prefer, however, to characterize a baby as incapable of attachment until Phase 3, during which he can take active initiative in seeking the proximity of an attachment figure.

3. *The Phase of Clear-cut Attachment.* Bowlby identified this as the phase of “maintenance of proximity to a discriminated figure by means of locomotion as well as signals.” As Bowlby’s label implies, the baby in this phase is very much more active than before in seeking and achieving proximity and contact with his discriminated (and preferred) figures on his own account, rather than relying as he did before on signaling behavior to bring them into proximity. Chief among his newly acquired behaviors is locomotion. Obviously locomotion can also serve other behavioral systems. But when a baby approaches a preferred figure, whether following a departing figure, greeting a returning figure, or merely seeking to be in closer proximity, we may infer that locomotion is serving the attachment system. A number of other active behaviors emerge that can be put into the service of the attachment-behavior system, including “active contact behaviors,” such as clambering up, embracing, burying the face in the body of the attachment figure, “scrambling” over the figure in an intimate exploration of face and body, and so on. Signaling behaviors continue to be emitted and may on occasion be intentional communications. Indeed language begins to develop during Phase 3.

Although the Phase-3 child is more active in seeking proximity/contact, clearly he does so only intermittently. He is active also in exploring his environment, manipulating the objects he discovers, and learning about their properties. The Phase-3 child is by no means focused constantly on his attachment figures, even though they may provide the secure background from which he moves out to familiarize himself with his world.

Bowlby (1969), using his control-systems model, pointed out that an infant's behavior first becomes organized on a goal-corrected basis in Phase 3, and then gradually becomes hierarchically organized in terms of overall plans. To the extent that attachment behavior is so organized, certain of the attachment behaviors are to a greater or lesser extent interchangeable. In a given episode of activation, the set-goal of the attachment system may be set for a certain degree of proximity, but there may be a variety of alternative behaviors through which a child may attempt to approximate that set-goal. Thus the specificity of each form of attachment behavior becomes increasingly less important, whereas the set-goal and overall plan for accomplishing it grow increasingly significant. Furthermore, the characteristic way in which a child has learned to organize his behavior with reference to a specific attachment figure is of clearly greater importance than the intensity or frequency with which he manifests each of the behavioral components of the attachment system. It is our conviction that the onset of goal-corrected attachment behavior is an acceptable criterion of the onset of attachment. In offering this criterion, however, we do not mean to imply that attachment, once present ceases to develop; on the contrary there is much further development of attachment during Phase 3 and beyond. We shall not here go into descriptive detail about Phase-3 attachment behavior, for both Bowlby (1969) and we in this chapter have tended to cite our illustrative material from Phase-3 behavior.

Phase 3 commonly begins at some time during the second half of the first year, perhaps as early as 6 months in some cases, but more usually somewhat later. Its onset may be conceived as coincident with the onset of Piaget's Stage 4 of sensorimotor development. The emergence of goal-corrected behavior may be conceived as coincident with the onset of the ability to distinguish between means and ends; and certainly hierarchical organization of behavior according to plans depends on means-ends distinctions and on achieving the ability for "true intention." The notion of alternative means of achieving a set-goal that is implicit in plans has its parallel in Piaget's concept of schemata becoming "mobile." Furthermore, the achievement of at least a Stage-4 level of development of the concept of persons as having permanence—that is, as existing when not actually present to perception—seems to us (as well as to Schaffer & Emerson, 1964, and to Bowlby, 1969) a necessary condition for a child's becoming attached to specific discriminated figures. In other words, our view of attachment implies a conception of the attachment figure as existing even when absent, as persistent in time and space, and as moving more or less predictably in a time-space continuum.

Despite the obvious connection between the concept of person permanence and separation distress, we are not convinced that the onset of crying when the mother leaves the room implies the acquisition of even a Piagetian Stage 4 concept of person permanence. Both Ainsworth (1967), in her study of Ganda babies, and Stayton, Ainsworth, and Main (1973), reporting on our longitudinal study of a sample of American babies, reported that crying when mother leaves the room occurs as early as 15 weeks. (In the latter study we were careful to eliminate episodes in which the baby was left alone or in which he had been just put down after having been held, because these were conditions likely to evoke crying from birth onwards.) We are inclined to believe that these very early instances of crying when mother leaves are an extension of the phenomenon, mentioned by Wolff (1969), of distress when a figure moves out of the infant's visual field—an extension because in this case it is a discriminated figure disappearing at a substantial distance from the infant, implying both an extension of the visual field and the ability to visually discriminate among figures at a distance. There is no indication merely from the distress that the baby yet conceives of his mother as having existence after having disappeared from the visual field. For this, one would require, as Piaget suggested, search for the vanished person.

Nevertheless, even though instances of separation distress may occur before Phase 3 of the development of attachment (and before Stage 4 of the account by Piaget, 1936, of sensorimotor development), there is much evidence that separation distress is particularly likely to occur in Phase 3, even though it is clearly not inevitable in very brief separations either at home (Stayton, Ainsworth, & Main, 1973) or in the strange situation—as the findings reported in later chapters demonstrate. To us it is suggestive that it occurs fairly commonly at about the same time that locomotion and goal-corrected behavior first emerge. One could argue that a baby does not need to be attached to a specific figure or to organize his behavior on a goal-corrected basis until locomotion makes it possible to move away from his mother figure to explore the world. In any event it is a happy circumstance that these developmental acquisitions coincide—and as for crying and attempts to follow a mother who is disappearing or who has already disappeared, these acquisitions also have a survival function for the active, mobile child.

We have already mentioned expectations (anticipations) as beginning to be formed as early as Phase 1. It is clear that by the time an infant reaches Phase 3, these expectations become even more important. By this time, as Piaget (1936) points out, the child can begin to use one environmental event as a cue that another environmental event will follow. This implies that he can begin to anticipate his mother's actions, insofar as these have a reasonable degree of consistency. Bowlby (1969) suggested that a baby in Phase 3, whose behavior has become goal corrected, is capable of taking into account in the plans through which he organizes his attachment behavior his expectations of how

his mother is likely to act. That is to say he is capable of adjusting his plans to his mother's expected behavior.

Phase 3 is conceived as continuing through the second and third years of life and thus obviously continues beyond the limits of Piaget's Stage 4, spanning the rest of the sensorimotor period and comprehending at least the first portion of his preoperational period. This being so, it follows that attachment becomes increasingly a matter of inner representation of attachment figures and of the self in relation to them.

Bowlby emphasized that, although an infant's attachment behavior and a mother's reciprocal behavior are preadapted to each other in an evolutionary sense, the behavior of each partner is often dominated by other "antithetical" behavior systems. When an infant's attachment behavior is activated, his mother may well be occupied with some activity antithetical to "maternal" behavior. Although the Phase-3 infant becomes increasingly capable of adjusting his plan for achieving the desired degree of proximity/contact with his mother in accordance with her current activity as interpreted in the light of the representational model of her that he has built up, there are limits to the success that his efforts are likely to meet, unless his mother abandons her plans in order to accommodate herself to his plan. The Phase-3 child is conceived as too "egocentric," in Piaget's (1924) sense, to be able to divine what his mother's current plan might be and to act to change it so that it is in greater harmony with his own.

4. *The Phase of a Goal-Corrected Partnership.* To Bowlby (1969) the fundamental feature of the fourth and final phase of the development of child-mother attachment is the lessening of egocentricity to the point that the child is capable of seeing things from his mother's point of view, and thus of being able to infer what feelings and motives, set-goals and plans might influence her behavior. To be sure, this increased understanding of his mother figure is far from perfect at first and develops only gradually. To the extent that a child has developed his representational model of his mother to include inferences of this sort, he is then able to more skillfully induce her to accommodate her plans to his, or at least to achieve some kind of mutually acceptable compromise. Bowlby suggested that when this point of development has been reached, mother and child develop a much more complex relationship, which he terms a "partnership." That he termed it a "goal-corrected" partnership underlines the flexible, hierarchical organization of the child's attachment behavior and of his mother's reciprocal behavior that is implicit in the concept of "plans." He surely did not mean to imply that goal-corrected behavior did not emerge until Phase 4, for he is explicit in pointing out that such behavior is characteristic of Phase 3 and serves to differentiate it from Phase-2 behavior.

Furthermore, as we have already implied, because of the development of communication and of the symbolic representations implicit in working models

of self and of attachment figures, the kinds of interactions between a child and his attachment figures undergo much change. And as we have also previously implied, the forms of behavior through which the attachment system is mediated become much more varied, although they still feature, under certain circumstances, overt proximity/contact seeking.

Despite the increasing sophistication of the processes mediating a child's attachment to his mother and others, and despite the fact that developmental changes continue, Bowlby did not conceive of such changes as involving processes different enough from those operating in Phase 4 to specify further phases of development. On the contrary, the processes implicit in Phase 4 were conceived as characteristic of mature attachments. Although Bowlby (1969, 1973) was specifically concerned with the attachment of a child to his mother figure, he conceived of attachments to other figures as approximating the same model—and he clearly stated that attachments continue throughout the entire life span. Attachment to parent figures may become attenuated as adulthood approaches and may become supplemented and to some extent supplanted by other attachments; but few if any adults cease to be influenced by their early attachments, or indeed cease at some level of awareness to be attached to their early attachment figures.

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1 Theoretical Background

early attachment figures.

Appendix IV: Maternal Caregiving and Interaction Scales

Bowlby, J. (1969, 2nd ed. 1982). Attachment and loss (vol. 1), Attachment. New York: Basic Books.

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Scale 1: Sensitivity vs. Insensitivity to the Infant's Signals

This variable deals with the mother's ability to perceive and to interpret accurately

the signals and communications implicit in her infant's behavior, and

given this understanding, to respond to them appropriately and promptly. Thus

the mother's sensitivity has four essential components: (a) her awareness of the

signals; (b) an accurate interpretation of them; (c) an appropriate response to

them; and (d) a prompt response to them. Let us consider each of these in turn. The mother's awareness of her infant's signals and communications has two

aspects. The first is the same as the issue covered in the scale "accessibility

versus ignoring and neglecting." In other words, the mother must be reasonably

accessible to the infant's communications before she can be sensitive to them.

Accessibility is a necessary condition for sensitivity aware ness. It is not a sufficient

condition, however, for a mother can maintain the "infant" in her field of

aware ness without fulfilling the other condition for sensitivity aware ness. The

second aspect of aware ness may be described in terms of "thresholds." The most

sensitive mother—the one with the lowest threshold—is alert to the infant's

most subtle, minimal, understated cues. Mothers with higher thresholds seem

to perceive only the most blatant and obvious communications. Mothers with

the highest thresholds seem often oblivious, and are, in effect, highly insensitive

able. This second aspect is very closely related to the question of interpretation

of the infant's signals, or, usually the mother who is alert to minimal cues also

interprets them correctly. This is not invariably the case, however. For example,

some mothers are alert to the slightest mouth movements, and sometimes

incorrectly interpret them as hunger—or they notice minimal tensions or rest

lessness and incorrectly interpret them as fatigue. The mother's ability to interpret accurately her infant's communications has

three main components: (a) her aware ness, as previ

ou sly discussed, (b) her

freedom from distortion, and (c) her empathy. An inattentive, "ignorant"

mother is, of course, often unable to interpret correctly the infant's signals

when they break through her obnoxiousness, for she has been unaware of the

prodromal signs and of the temporal context of the behavior. But even a mother

who is highly aware and accessible may misinterpret signals because her percep-

tion is distorted by projection, denial, or other marked defensive operations.

Mothers who have distorted perceptions tend to bias their "reading" of their

babies according to their own wishes, moods, and fantasies. For example, a

mother not wishing to attend to her infant might interpret his fussy bids for

attention as fatigue and, therefore, put him to bed or, if she is in a hurry, might

perceive any slowing down in the rate of feeding as a sign of satiation. Similarly,

a mother who is somewhat rejecting of her infant might perceive him as

rejecting and aggressive toward herself. Mothers who least distort their percep-

tions of their babies have some insight as to their own wishes and moods, and

thus can more realistically judge the infant's behavior. Furthermore, they are

usually aware of how their own behavior and moods affect their infant's beha-

behavior. The mother must be able to empathize with her infant's feelings and

wishes before she can respond with sensitivity. That is, a mother might be quite

aware of and understand accurately the infant's behavior and the circumstances

leading to her infant's distress or demands, but because she is unable to

empathize with him—unable to see things from the infant's point of view—she

may tease him back into good humor, mock him, laugh at him, or just ignore

him. The mother's egocentricity and lack of empathy may also lead to detached,

intellectual responses to the infant rather than to warm, sensitive interactions

with the infant. A high threshold of awareness and inaccurate perceptions certainly leads to

insensitive responses. Nevertheless, the mother may be highly aware and

accurate in her interpretation and still be insensitive. Therefore, in the last

analysis, the appropriateness and promptness of the mother's response to

communications are the hallmarks of sensitivity. The quality of the mother's interaction with her infant is probably the most

important index of her sensitivity. It is essential that the mother's responses be

appropriate to the situation and to the infant's communications. Often enough,

at least in the first year of life, the sensitive mother gives the infant what his

communications suggest he wants. She responds

socially to his attempts to

initiate social interaction, playfully to his attempts to initiate play. She picks

him up when he seems to wish it, and puts him down when he wants to explore.

When he is distressed, she knows what kind and degree of soothing he requires

to comfort him—and she knows that sometimes a few words or a distraction

will be all that is needed. When he is hungry she sees that he soon gets some

thing to eat, perhaps giving him a snack if she does not want to give him his

regular meal right away. On the other hand, the mother who responds inappropriately,

for example, tries to socialize with the infant when he is hungry, play with him

when he is tired, or feed him when he is trying to initiate social interaction. In play and social interaction, the mother who responds appropriately to her

child does not overstimulate him by interacting in too intense, too vigorous,

too prolonged, or too exciting a manner. She can perceive and accurately interpret

the signs of overexcitement, undue tension, or incipient distress and shifts

in the tempo or intensity before things have gone too far. Similarly, she is unlikely

to underestimate the child, because she picks up and responds to the signals

he gives when he is bored or when he wants more interaction than has hitherto

been forthcoming. In the second year of life, and sometimes also toward the end of the first year,

it is maximally appropriate for the mother to respond to the infant's signals not

so much in accordance with what he ostensibly wants as in terms of a compromise

between this and what will make him feel most secure, competent, comfort

able, etc., in the long run. This is a tricky judgment to make for so much that

is done "for the infant's own good" is done both contrary to his wishes and

according to the mother's convenience, whim, or preconceived standards.

Nevertheless there are situations in which limit setting, even in the first year,

clears the air even though it is initially contrary to the infant's wishes. Similarly

there are situations in which the infant's signals might lead the mother to

increase the tempo of interaction to the point of discomfort for him, and in

which it is appropriate gradually to diminish intensity. Therefore, there is a fine

point of balance at which the mother can begin to show the infant that she is

not an instrument of his will, but a cooperative partner whose participation

must be elicited appropriately. In such instances the mother will slightly frus

trate the infant's imperious demands but warmly encourage (and reward) beha

viors which are inviting or requesting rather than demanding. Nevertheless, in

such interactions the sensitive mother acknowledged

ges the infant's wishes even

though she does not uncon di ti on al ly accede to them.
The chief point is that a

sens it iv e, appro pr i at e response does not invari
ab ly imply complete compli anc e

to the infant's wish—although very frequently compli anc e
may be the most

appro pr i at e response. The final feature of appro pr
i at e inter ac ti on is that it is well re solved or
well

ro unded and completed. For example, when the infant seeks
contact the sens

it iv e mother holds him long enough to satisfy him, so
that when he is put down

he does not imme di at ely seek to be picked up again.
When he needs sooth in g,

she soothes him thor ou ghly, so he is quite recovered and
cheer fu l. When he

seeks social inter ac ti on she enters into a more or less
prolonged exchange with

him, after which, often enough, he is content to enter ta
in himself. In contrast,

the responses of some mothers with low sens it iv it y
seem to be frag me n te d and

incom plet e. These mothers may try a series of inter ve
n ti ons as though search in g

for the best method or solu ti on. Highly sens it iv e
mothers have completed,

easily and well re solved, inter ac ti ons. Finally,
there is the issue of the prompt ne ss of the mother's
response to the

infant's commu ni c a ti on. A response, however appro
pr i at e, which is so delayed

that it cannot be perceived by the infant as contin ge nt

upon his communication

cannot be linked by him to his own signal. We assume that it is a good thing

for an infant to gain some feeling of efficacy—and even to ally to feel cumulative

ively a “sense of competence” in controlling his social environment. Thus, it

seems a part of sensitivity to acknowledge the infant’s signals in some effective

way and to indicate that one is at least preparing to accede to them. During the

first quarter of the first year, a mother’s sensitivity is most easily judged by her

latency in response to the infant’s distress signals such as hunger. However,

during the last quarter, the mother’s prompt response to the infant’s social

communication and signals is probably a more critical measure. A mother is

inevitably insensitive when she fails to respond to the infant’s outstretched

arms, to his excited greeting, or simply to his smile or gentle touch. An issue which cuts across the various components of sensitivity concerns

the timing of routine activities and playing. In general, arbitrary or very rigid

timing of major interactions cannot but be insensitive to the infant’s signals,

moods, and rhythms. The mother who arranges and organizes day-by-day

activities with her infant in order to most convenience herself, or the mother

who thinks by the clock, has little or no consideration of the infant’s tempo and

current state. In summary, the most sensitive mothers are usually accessible to their infants

and are aware even of their more subtle communications, signals, wishes, and

moods. In addition, these mothers accurately interpret their perceptions and

show empathy with their infants. The sensitive mother, armed with this under

standing and empathy, can time her interactions well and deal with her infant

so that her interactions seem appropriate—appropriate in kind as well as in

quality—and prompt. In contrast, mothers with low sensitivity are not aware of

much of their infant's behavior, either because they ignore the infant or they

fail to perceive in his activity the more subtle and hard-to-detect communications

and those aspects of their infant's behavior of which they are aware or else they distort it. A

mother may have some what accurate perceptions of her infant's activity and

moods but may be unable to empathize with him. Through either lack of

understanding or empathy, mothers with low sensitivity improperly time their

responses, either in terms of scheduling or in terms of promptness to the infant's

communications. Further, mothers with low sensitivity often have inappropriate

responses in kind as well as quantity (i.e.,

interactions that are frag

mented and poorly resolved).

The Sensitivity vs. Insensitivity Scale

9. Highly sensitive. This mother is exquisitely attuned to B (baby)'s signals;

and responds to them promptly and appropriately. She is able to see things from

B's point of view; her perceptions of his signals and communications are not

distorted by her own needs and defenses. She "reads" B's signals and commu

nications skillfully, and knows what the meaning is of even his subtle, minimal,

and understated cues. She nearly always gives B what he indicates that he wants,

although perhaps not invariably so. When she feels that it is best not to comply

with his demands—for example, when he is too excited, overimpress, or

wants something he should not have—she is tactful in acknowledging his

communication and in offering an acceptable alternative. She has "well

rounded" interactions with B, so that the transaction is smoothly completed

and both she and B feel satisfied. Finally, she makes her responses temporarily

contingent upon B's signals and communications.

7. Sensitive. This mother also interprets B's communications accurately,

and responds to them promptly and appropriately but with less sensitivity than

mothers with higher ratings. She may be less attuned to B's

more subtle beha

vi ors than the highly sensit ive mother. Or, perhaps because she is less skill ful in

divid ing her atten tion between B and compet ing demands, she may some times

“miss her cues.” B’s clear and defin ite signals are, however, neither missed nor

misin ter preted. This mother empath izes with B and sees things from his point

of view; her percep tions of his beha vior are not distor ted. Perhaps because her

percep tion is less sensit ive than that of mothers with higher ratings, her

responses are not as consist ently prompt or as finely appro pri ate. But although

there may be occa sion ally little “mismatches,” M (mother)’s inter ven tions and

inter ac tions are never seri ously out of tune with B’s tempo, state, and commu

nic a tions. 5. Inconsistently sensit ive. Although this mother can be quite sensit ive

on occa sion, there are some periods in which she is insens it ive to B’s commu

nic a ti ons. M’s incon si st en t sensit iv it y may occur for any one of several reasons,

but the outcome is that she seems to have lacunae in regard to her sensit iv e

deal in gs with B—being sensit iv e at some times or in respect to some aspects of

his exper i enc e, but not in others. Her aware ne ss of B may be inter mi t te nt—

often fairly keen, but some ti mes imper vi ou s. Or, her percep ti on of B’s beha vi or

may be distorted in regard to one or two aspects, although it is accurate in other

important aspects. She may be prompt and appropriate in response to his

communications at times and in most respects, but either inappropriately or slow

at other times and in other respects. On the whole, however, she is more

frequently sensitive than insensitive. What is striking is that a mother who can

be as sensitive as she is on so many occasions can be so insensitive on other

occasions. 3. Insensitive. This mother frequently fails to respond to B's communication

appropriately and/or promptly, although she may on some occasions show

capacity for sensitivity in her responses to and interactions with B. Her insens

sitivity seems linked to inability to see things from B's point of view. She may

be too frequently preoccupied with other things and therefore incapable to

hear his signals and communications, or she may misperceive his signals and inter

pret them inaccurately because of her own wishes or defenses. Or, she may

know well enough what B is communicating but be disinclined to give him

what he wants—because it is inconvenient or she not in the mood for it, or

because she is determined not to “spoil” him. She may delay an otherwise

appropriate response to such an extent that it is no longer contingent upon his

signal, and indeed perhaps is no longer appropriate to his state or mood. Or, she

may respond with seeming appropriateness to B's communications but break

off the transactions before B is satisfied, so that their interactions seem frag

mented and incomplete or her responses perfunctory, halfhearted, or impa

tient. Despite such clear evidence of insensitivity, however, this mother is not

as consistently or pervasively insensitive as mothers with even lower ratings.

Therefore, when the infant's own wishes, moods, and activity are not too

deviant from the mother's wishes, moods, and household responsibilities, or

when the infant is truly distressed or otherwise very forceful and compelling in

his communication, this mother can modify her own behavior and goals and,

at this time, can show some sensitivity in her handling of the child. 1. Highly insensitive. The extremely insensitive mother seems geared

almost exclusively to her own wishes, moods, and activity. That is, M's inter

ventions and initiations of interaction are prompted or shaped largely by signals

within herself; if they mesh with B's signals, this is often no more than coincid

ence. This is not to say that M never responds to B's signals; for some times she

does if the signals are intense enough, prolonged enough, or often enough

repeated. The delay in response is in itself insensitive. Furthermore, since there

is usually a disparity between one's own wishes and activity and B's signals, M

who is geared largely to her own signals routinely ignores or distorts the

meaning of B's behavior. Thus, when M responds to B's signals, her response is

inappropriate in kind or fragmented and incomplete.

Scale 2: Cooperation vs. Interference with Infant's

Ongoing Behavior

The central issue of this scale is the extent to which the mother's interventions

or interactions break into, interrupt or cut across the infant's ongoing activity

rather than being geared in both timing and quality to the infant's state, mood,

and current interests. The degree of interference may be assessed in accordance

with two considerations: (a) the extent of actual physical interference with the

infant's activity, and (b) the sheer frequency of interruptions. Some mothers are highly interfering in an overwhelming physical sense.

Such a mother snatches the infant up, moves him about, confines him, and,

indeed, releases him with utter disregard for his activity in progress. When she

restricts and restrains his movements it tends to be by direct physical interven-

tion or force. She may also try to use force in instances in which the infant's

cooperation is required if the intervention is to be effective—for example, in

feeding, in play, and (although this usually comes later) in toilet training. Other

mothers, whose interference does not so conspicuously emphasize physical

force, nevertheless must be considered highly interfering because they are “at”

the infant most of the time—instructing, training, eliciting, directing,

controlling. In either case it is clear that the highly interfering mother has no respect for

her infant as a separate, active, and autonomous person, whose wishes and

activities have a validity of their own. The underlying dynamics of such an atti-

tude are various; some examples follow. An obsessive-compulsive woman, for

example, tends to require a tight control over other people in order to control

her own anxieties; such a mother may become anxious and angry when the

infant does not do exactly what she wants him to do, when she wants him to

do it, and in the way she wants him to do it. Another kind of dynamic behind

interference is shown by the woman whose infant continues to be a narcissistic

extension of herself; such a woman tends to treat him as her possession, her

creature, hers. When she is in a mood to play, she may find the infant charming,

provided that he cooperates and plays; when she tires of him she puts him aside;

in either case it does not seem to occur to her to attribute any validity to how

the infant feels. A third kind of dynamic behind interference is an emphasis on

training. The mother feels that she can shape the infant to fit her own concept

of a good infant, whether through a determined attempt to elicit behavior she

considers desirable or by punishing behavior that she considers undesirable.

These three examples do not exhaust the possibilities, but it is hoped that they

serve to illustrate the essentials of the underlying attitude—which is that the

interfering mother feels that the infant is hers and that she has a perfect right to

impose her will on him. She tends to treat him almost as an inanimate possession

that she can move about as she wishes—or perhaps, as a more appropriate

analogy, as a small child treats a pet kitten, to be handled, petted, fed, teased,

carried, and put aside with complete lack of regard for the kitten's needs and

wishes. Mothers at the other end of this continuum seem to guide rather than to

control the infant's activity. Such a mother integrates her wishes, moods, and

household responsibilities with the infant's wishes, moods, and ongoing activity.

Their interactions and shifts of activity seem coordinated. Rather than

interrupting an activity that the infant has in

progress, she delays her interve n

tion until a natural break in his activ it y occurs. Or,
through medi at in g activ

it ie s, often of a playful sort, she can gradu al ly
divert him from what he is doing

toward some th ing she wants him to do. Such a mother uses
mood se tting tech

niques. At bed ti me, for example, she gradu al ly slows
down the pace and vigor

of their inter ac ti on until he is relaxed and calm and
more ready for bed than he

could have been at the peak of excited play. She invites
him to come and

cooper at e with what she has in mind rather than impos
in g it on him. A type of inter fe r enc e (less force
fu l than direct phys ic al inter ve n ti on) may

be seen in play and vocal iz a ti on. An inter fe r in g
mother tends to play entirely or

almost entirely by doing some th ing to the infant, or by
getting him to do

some thing she wishes. Such mothers instruct the infant in
tricks or stereo typed

games, persist ing even when the infant is in an unre spons
ive mood. Once the

infant has learned the tricks or games to some degree, the
mother subsequently

plays by attempt ing to elicit them. Or, as an altern at
ive, she does some thing

playful to the infant, for example tick ling him or whirl
ing him about. (These

examples are not inten ded to imply that tick ling or whirl
ing are in them selves

criteria of an inter fer ing approach, but merely that they
can be modes of play

which are not co-determined, and often enough, together with "eliciting" or

instructing, the only modes available to the interfering mother.) Similarly, with

vocalization. The interfering mother persistently tries to elicit specific vocalizations

(or gestures) regardless of the infant's current interest in vocalizing or

lack of it. In contrast, a "co-determining" mother capitalizes on spontaneity. She

responds to the infant's vocalizations, and does a minimum of trying to elicit

specific sounds. She tends to pick up something the infant does as the beginning

of a play sequence, and responds to his initiations of play. She may attempt

to initiate play, but if the infant does not respond, she either desists, or shifts her

approach. Most mothers undertake some kind of instruction, and on one occasion

or another deliberately elicit something the infant has learned; so rating is

a matter of balance between eliciting and instructing on one hand and spontaneity

on the other—and also a matter of appropriateness of context and

meshing with the infant's mood. The extremes of physical interference are to be seen most usually in pick-up

and put-down situations and when the infant is free on the floor. The highly

interfering mother is likely to keep pulling the infant back from places she does

not want him to go, perhaps interfering directly

control with multiple

commands, "no no 's," and perhaps slaps. Of course, even a usually non inter-

fering mother will intervene abruptly and forcibly if the infant's activity

threatens physical harm to him; for example, if he is headed toward unguarded

stairs or if he is about to swallow some small object. But it is characteristic of

the noninterfering mother to "infant proof" the house and its contents so that

physical intervention is rarely necessary-by placing gates across the stairways,

by putting away objects which could harm the infant or which she does not

want him to have, and the like. Restraint may sometimes be considered a form of interference, but there is a

distinction to be made between forcible physical restraint, such as pinning the

infant's hands when there is a direct physical confrontation between mother

and infant and impersonal restraints such as playpens and the straps of a high

chair. Restraint that involves physical confrontation will be considered inter-

ference. Impersonal restraints will not be considered interfering, except insofar

as the manner and timing of imposing the restraint itself constitutes an interference

ence. Thus strapping the infant in a high chair is not an interference, but if,

when the infant has been refusing to sit, the mother jerks him down and straps

him in, this would be considered an interference.
Similarly, placing the infant

in the playpen would not be considered an interference
per se, but picking him

up unceremoniously when he is in the midst of active
exploration and dumping

him down in the playpen would. One difficulty with this
rating scale is how to rate mothers who have been

highly interfering in the past and whose babies have
become passive as a result.

Such babies may now not try to reach the bottle; it is no
longer necessary to

pinion their arms. Such babies when placed on the floor may
not explore vigorously so it is not

necessary to interfere. Even in instances where it is
known that present gener

alized or situation specific passivity is correlated
with past restraints and inter

ferences, the mother will be rated on the basis of positive
evidence of interference

(or conversely cooperation) which she now shows. It is
assumed that ratings of

earlier periods, when undertaken, will tell the story, if,
indeed, the mother now

gives little evidence of interference. Routines—feeding,
changing, bathing, and bedtime—may be the occasion

for interference, just as they may be the situations in
which cooperation and

cooperation is most clearly illustrated. The
general rule of thumb is:

when interference is a matter of direct physical control
it will be considered

interference; but when it is a matter of tactful control
or accepted impersonal

restraint it will not be so considered. In between the two extremes come the

milder interferences of verbal commands and prohibitions. Thus, for example,

the mother who slaps or holds the infant's hands to prevent him from touching

food would be considered interfering; the mother who scolds and warns

without physical intervention would be considered interfering to a milder

degree. The mother who gives no finger foods would not be considered inter-

fering, unless she slaps, holds, scolds, or verbally prohibits. The mother who

tussles or slaps an active child while changing him would be considered inter-

fering. The mother who gives him something to manipulate or who holds his

attention by talking to him playfully and thus does not need to interfere phys-

ically would be considered noninterfering. The mother who interrupts an

active or excited or unsleepy infant and puts him to bed abruptly would be

considered interfering. But the mother who plays gentle games, or holds and

rocks, and who generally gets the infant into a nap except in good mood will be

considered cooperative. The timing of routines per se, will not, however, be

taken into account in rating this variable. (Timing will be reflected in the scale

dealing with the mother's sensitivity to the infant's

communications and

signals.) This present scale, although not entirely orthogonal to scales of ignoring and

rejecting, is certainly not in one-to-one relationship with them. Some inter-

fering mothers alternate interfering transactions with periods of ignoring the

infant; others are clearly aware of the infant at all times and are by no means

inaccessible.

The Cooperation vs. Interference Scale

9. Conspicuously cooperative. This mother views her infant as a separate,

active, autonomous person, whose wishes and activities have validity of their

own. Since she respects his autonomy, she avoids situations in which she might

have to impose her will on his, and shows foresight in planning ahead—by

arranging the physical environment of the house or by her timing her own

household routines—in such a way as to minimize the need for interference

and for direct control. She avoids interrupting an activity the infant has in progress. When it is

desirable to intervene for a routine or to “shift” his activity, she truly engages

his cooperation, by mood setting, by inviting him, by diverting him, and by

engaging him in reciprocal activity of some sort, often through vocalization or

play. In activity shifting and indeed also in play, she capitalizes on spontaneity,

picking up cues from the infant to help her present what she wants him to do

as some thing that is also congenial to him. Even a conspicuously cooperative mother inevitably will instruct her infant

to some extent or attempt to elicit particular behaviors, but these mildly

controlling interactions both constitute a small proportion of their total inter

action and are themselves appropriate enough to the infant's mood and activ

ity in progress to be considered co-determined. Except in rare emergency situations this mother never interferes with the

infant abruptly and with physical force. Verbal commands and prohibitions

across distance are an inevitable corollary of giving the infant freedom to

explore and to learn, but the "conspicuously cooperative" mother manages to

structure the freedom to explore situation so that she needs to command but

rarely. In other words, to be co-determined does not imply either over

permissive ness or a "laissez faire" attitude. 7. Cooperative. This mother does not have as conspicuous a respect for her

infant's autonomy and ongoing activity as do mothers with higher ratings, but

on the whole she is cooperative and non-interfering. She shows less foresight

than mothers with higher ratings do in arranging the physical environment and

her own routine so as to avoid the need for interference

enc e. Consequently, there

are more occasions in which she feels it necessary to interrupt or to exert

control. Although she may give more verbal commands or prohibitions than

mothers with higher ratings, she tries to avoid undue frequency of interference,

and rarely, if ever, intervenes in direct, abrupt, physical ways. Nevertheless, she seeks the infant's cooperation in routines and in shifts of

activity by mood setting and other techniques mentioned above. She may,

however, be somewhat less skillful than mothers in higher ratings in capital

izing on spontaneity and thus achieving optimum cooperation. Although the

balance is in favor of spontaneity in play and in exchanges of vocalization, she

may be somewhat more frequently instructive or "eliciting" than mothers with

higher ratings. 5. Mildly interfering. This mother is not so much an interfering or

controlling person as she is inconsiderate of the infant's wishes and activities.

Consequently, she interrupts and interferes more frequently than do mothers

with higher ratings. On the whole her interference tends to be mild, however, rather than being

direct, abrupt, and physically forceful. She tends to issue more verbal commands

and prohibitions to control the infant across a distance than do mothers with

higher ratings. She tends to rely more on instructive, eliciting modes of play

and interaction and is less spontaneous than they are. Perhaps the most

conspicuous difference from those with higher ratings, however, is in regard to

routine interventions and shifts of activity. She pays much less attention to

mood setting and to other techniques that aid smooth transitions from one

activity to another. She tends to be matter of fact. When she judges that a chan

ging, a nap, a feeding, or merely a shift of locus or activity is desirable she acts

accordingly, apparently disregarding the fact that her intervention may break

into the infant's activity in progress or the fact that the activity she proposes

may be alien to the infant's present mood. 3. Interfering. In distinguishing the mother with a "3" rating from one

with an even lower rating, a judgment about arbitrariness is crucial. Like

mothers with lower ratings, these interfering mothers display either direct,

forceful, physical interference or frequent milder interferences or both. But

usually the "3" mother has some kind of rationale for her actions which is

perceptible to the observer (even though it may seem far from desirable); the

interference is not obviously arbitrary. The mother may be focused on the

desirability of undertaking a specific routine at this time; or she may be a

"training" kind of mother who is determined to shape

the infant to her way of

doing things. There is, however, a reason for most of her inter ru p ti ons or inter

fer enc es, whereas the "1" mother is more frequently arbit ra ry, seeming to

inter fe re for no reason at all. (It is assumed that the totally arbit ra ry inter fe r

ences are as incom pr e he ns ib le to the infant as they are to the observer, and that

those that have some "reason" may have some thread of consist enc y which

makes them easier for the infant to adapt to.) In distin gu ish in g the "3" mother

from those with higher ratings, it is merely neces sa ry to say that she is substan

tially more inter fe r in g either in frequency or in quality or both. She more

frequently displays phys ic al inter fe r enc e or restraint, or she much more

frequently inter fe res mildly-instruct in g, elicit in g, prohib it in g, and

command in g-or both. Perhaps even more import an t than the abso lut e amount

of inter fe r in g is the propor ti on of mother-infant trans ac ti ons that are inter

fer in g. The "3" mother is inter fe r in g in a greater propor ti on of her trans ac ti ons

than the "5" or "4" mother. 1. Highly inter fer in g. This mother has no respect for her infant as a

separ ate, active, and autonom ous person, whose wishes and activ it ies have a

valid ity of their own. She seems to assume that the infant is hers and that she

has a perfect right to do with him what she wishes, imposing her will on his,

or shaping him to her standards, or merely following her own whims without

regard to his moods, wishes, or activities. There is an arbitrary ness about the

interference that is striking. Much (although not all) of it is "for no apparent

reason." Some highly interfering mothers are conspicuous for the direct, phys-

ical, forcefulness of their interruptions or restraints. Others are conspicuous for

the extreme frequency of interruption of the infant's activity in progress, so

that they seem "at" the infant most of the time—instructing, training, eliciting,

directing, controlling. But the "1" mother tends to combine both types of

interference, even though she may emphasize one type more than the other. Regardless of the balance between physical manipulation and milder inter-

ructions, these mothers have in common an extreme lack of respect for the

infant's autonomy, and an obtuseness which permits them to break into what

the infant is doing without any need to explain to others, or even to justify to

themselves, the reason for the interruption.

Scale 3: Physical and Psychological Accessibility vs. Ignoring

and Neglecting

The central issue of this scale is the mother's accessibility to the infant, with

emphasis upon her responsiveness to him. Although the essential component of

psychological accessibility is that the mother be aware of the infant, she is not

truly accessible unless she also actively acknowledges and responds to him. A highly accessible mother has her infant in her field of perceptual awareness

at all times so that he is within reach, at least, through distance receptors. She

can divide her attention between the infant and other persons, things, and

activities without losing awareness of the infant. She is never too preoccupied

with her own thoughts and feelings or with her other activities and interactions

to have him in the background of her awareness and to sense where he is and

what he is doing. When he is in another room she is quick to perceive any

sounds he may make, and she takes precautions not to have him so far away or

so closed off that she cannot hear a sound as loud as a cry. The highly accessible mother not only is aware of her infant's activity and

signals, but she responds to him readily. She can switch her attention to him

easily if he needs her supervision or protection or if he approaches or tries to

catch her attention. To be accessible, the mother does not necessarily understand

stand and interpret the infant's behavior nor does she necessarily respond appro

priately to the infant's signals—nevertheless, the accessible mother is

perceptually alert and responsive to her infant most of the time. An insecure mother ignores her infant and in this sense she neglects him.

"Neglect" in this context does not necessarily imply physical neglect. The

neglect is psychological for the most part—although mothers in insecure

moods may sometimes show surprising lapses in failing to protect the infant

from danger. There are two major types of women who can be described as

insecure, ignoring, and neglecting. First, there are mothers who are unaware

of much of the infant's behavior; they do not perceive his signals and commu-

nications and therefore cannot respond to them. Second, there are mothers who

perceive the infant's signals well enough, but do not acknowledge or respond to

them, and hence must be to the infant just as insecure as if they had been

unaware. Let us first consider mothers who are frequently impatient and unaware

of their infant's signals. Two main types have been observed. The dynamics of

the first type seem the more pathological. Such a mother seems to teeter on the

brink of depression and/or fragmentation and disintegration. She finds the

demands implicit in the infant's signals an intolerable threat to her precarious

balance. It is necessary, in order to hold herself together, to "tune out" the

infant's signals. The infant may simply be blotted out of

awareness for long

periods of time. If he cries, she does not hear him; if he greets her, she does not

see him. If the infant's signals do break through the mother's defensive barrier,

she tends to fall back on a second line of defense, somehow removing from the

stimuli emanating from the infant their signal quality. The infant is perceived

as making happy sounds rather than crying, or, if he is perceived as crying, the

mother cannot imagine what the cause might be and, since she does not know

what to do, she does nothing. Whatever the mechanism, the infant's signal is so

distorted in the process of reception that it loses any power to impel his mother

to respond. Such a mother rarely attends to the infant as a consequence of his

behavior, however much the infant may clamor for attention—and often

enough her infant learns the futility of trying to break through such a barrier

and does not clamor. Such a mother tends to attend to her infant according to

her own programming as though she reminded herself: "Now is the time to

attend to the infant." It seems that her caretaking is a response to the thought

of him—to the concept of infant—rather than to her perception of him and his

signals. When the infant is out of sight, he tends to be out of mind, except that

the mother can talk about him, discuss her plans for him, or her policies in

managing him. She may give information about him, but often this is meagre

because she has not observed his behaviour closely enough to give much detail.

It is as though her concept of the infant is more real than the infant as he actu

ally exists. The second major type of mother who is frequently imperceptive and

unaware has dynamics that seem less pernicious than those of the first, because

the mother is not rendered quite so impervious to the infant's signals and

communications. This mother creates a barrier against the infant's demands,

but, since she does not back this up by a distortion or perception of his signals,

he can, if he signals intensely enough or persistently enough, break through.

These mothers tend to be somewhat compulsive. They get preoccupied with

their own activities, whether work or conversations, or they ruminate, lost in

their own thoughts and worries. While they are thus preoccupied, the infant

may go unnoticed. Such women are one trackminded, and find it difficult to

switch from one set of activities to another—from housekeeping to mothering,

for example. Sometimes they bolster up their need to be uninterrupted by

arranging the physical environment so that the infant will not impinge upon

them while they are engaged in some thing else—work, napping, or adult soci

ability. They may put the infant away in another room, preferably one far

enough away or sound proofed so that they will not be interrupted by him, or

they may arrange to turn him over to someone else—a house keeper or perhaps

another member of the family. They often seem as inaccessible as women who

are more defensively unaware, but the critical difference is that, provided the

infant is within signal range, she is not completely impervious. Whatever the mother's reasons for putting the infant away—whether

rejecting or not—it may be argued that a mother is more or less ignoring and

neglecting under either of the following circumstances: (a) when the infant is

having a long “nap” while the mother is talking to a visitor or doing other

things, and the infant is too far away to have any signals heard and the mother

makes no effort to “check” on him; or (b) when the mother could be accessible

to the infant (i.e., is at home) but turns her infant over to a house keeper, another

member of the family, or even to the visitor, and busies herself with some thing

else, has a nap, or goes out on an unessential errand, thus making herself inac

cessible to the infant, and perhaps even making it impossible for her to be aware

of any signals he might make. Under such circumstances, the mother has

arranged matters (either deliberately or not) so that the responsibility for

responding to any infant signals falls to someone else. When such conditions

occur, the rater may shift the overall rating to a point on the scale somewhat

lower than might be suggested by the mother's behavior when she is with the

infant and is accepting the responsibility to be responsive. In doing so, the rater

should also take into account qualifying features such as the mother's attitude

and whether these circumstances seem to be typical or out of the ordinary. Let us now consider mothers who are inaccessible despite being perfectly

well aware of the infant's signals and interpreting them correctly. Such a mother

is not merely unresponsive to the infant and his signals. She ignores them deliberately

—whether through policy, for discipline, or through pique. Sometimes

it may seem incomprehensible to the observer that the mother can note the

infant's behavior, that she can comment upon and correctly interpret the reason

for his fuss, and still continue to ignore him. These women do not have

distorted perception, but somehow they are not sufficiently able to see things

from the infant's point of view—or perhaps to feel things from his point of

view—to want to intervene. They are too impersonal

and objective; in their

failure to acknowledge the infant they must seem as inaccessible to the infant as

if they did not perceive him. Throughout this discussion emphasis has been placed upon the mother's

failure to perceive and/or to be responsive to the infant's signals. Inaccessibility

is most obvious when the infant is, in fact, signaling, and the mother does not

respond. There are, however, babies who make few demands—perhaps because

they have become accustomed to being ignored. The relative lack of frequency,

intensity, or persistence of signaling behavior on the part of the infant may

make it all the easier for his mother to ignore him, but the rater should not be

misled into overrating the mother's accessibility on this account. If she can go

for long periods without seeming to notice the infant or to acknowledge him

she is a candidate for a low rating regardless of whether or not the infant is

making obvious demands. In summary, an accessible mother is aware of her infant and of his behavior

most of the time and usually acknowledges his presence, his signals and his

communications. A mother is judged to be inaccessible if she frequently or

perhaps for prolonged periods does not acknowledge the infant or respond to

him—whether she is aware of his behavior or not, and, indeed, whether she is

in the same room or not. This scale does not take into account the quality of care that the mother

gives the infant or the quality of her interaction with him. Some mothers are

constantly aware of the infant and responsive to his signals, and yet they respond

inappropriately or even sadistically. It is the bare fact of the mother's acknow

ledgement of his real presence that is important on this scale—not the quality

of her response to him. Note: This variable is similar to Scale MC 1 of the first quarter rating

scale—mother's accessibility to the infant. The previous scale was, however,

concerned with the issue of the limited availability of the part-time mother.

This present scale is concerned only with the mother's accessibility when she is

at home. The working mother will, therefore, be rated only on the basis of her

behavior when she returns home from work.

The Accessibility vs. Ignoring and Neglecting Scale

9. Highly accessible. M arranges things so that she can be accessible to B and

B to her. She keeps him close enough so that she can be aware of his states,

signals, and activities. She is very alert to his whereabouts and doings. Even

when he is napping in his room she has a selective filter tuned in to any sounds

he might make. She is capable of distributing her attention between B and other

people and things, and is rarely so preoccupied that she

is unaware of B and

unresponsive to what he is doing. She rarely, if ever, ignores any active approach

or demand of B's, even though she may not do what he seems to want her to do.

She does not even pretend to ignore him, but rather acknowledges his presence

and his overtures or demands in some way. She rarely, if ever, enters a room

without giving B some acknowledgment that she is aware of him. 7. Usually accessible. M is usually accessible psychologically. There may

be brief periods during which other demands and other activities may prevent

her from being aware of B and what he is doing, but most usually her attention

is "tuned in" to him. She is not as smooth about dividing her attention between

competing demands as are women with higher ratings, but rather tends to

alternate. Nevertheless, she can fairly easily switch her attention to B. She may

sometimes be preoccupied enough with her own activities-including activities

it is concerned with B's care-that she fails to acknowledge B, perhaps going

in and out of the room without seeming to see B's interest in her presence. For

the most part, however, she acknowledges B when she enters a room, especially

if they have been apart for more than a few moments. (Mothers may be given

this rating also if they habitually and deliberately ignore B under one set of

circumstances—for example, ignoring any crying B may do when he is put

down for a nap—and yet are highly accessible at most other times.) 5. Inconsistently accessible. M is inconsistent in her accessibility to B.

Fairly long periods of close attention alternate with periods of seeming

obliviousness to B, during which M is occupied with other things despite B's

presence and perhaps even despite his attempts to catch her attention. The inac-

cessibility of some mothers may be quite unpredictable because of a tendency

to become easily preoccupied with their own activities and thoughts; other

mothers may regularly and routinely plan prolonged periods of unavailability,

such as during those hours when they do their household chores. During these

planned or unplanned periods, M may ignore B when she enters a room, even

after a considerable absence, being concerned with other things. She may

become so caught up in a conversation, activity, or thought that she seemingly

forgets about B and ignores what he is doing—responding neither to his atten-

tion getting behavior, nor to dangerous or “naughty” behavior which ordin-

arily would evoke an intervention. Nevertheless, this mother is more often

accessible than inaccessible, and during her periods of accessibility, she is highly

responsive to B. 3. Often inaccessible, ignoring, or neglecting. M occasionally seems

responsive to B's behavior and to the signals implicit in it, but she is more

frequently inaccessible than accessible to him. She may be too preoccupied

with her own thoughts or activities to notice him, or she may notice and

correctly interpret his signals without being moved to acknowledge them. She

typically enters and leaves the room without acknowledging B or his signals,

whether they are conspicuous, subtle, or muted. Although she frequently

ignores him, she is not entirely oblivious. If B signals strongly enough or

persistently enough, M may respond to him—and in this she differs from

mothers with even lower ratings. On the other hand, if the infant is an

undemanding infant, and tends not to signal frequently or strongly, the mother's

accessibility must be judged in accordance with the extent to which she does

acknowledge him, whether he demands it or not. The mother with this

rating—and also and even to a greater extent mothers with lower ratings—

tends to give B attention with her own programming rather than in accordance

with his, although she may give him intense attention on the occasions when

she decides to attend to him at all. 1. Highly inaccessible, ignoring or neglecting. M is so preoccupied

with her own thoughts and activities for most of the time that she simply does

not notice B. She enters the room without even looking at him, let alone

acknowledging him; his smiles are not returned. When B is elsewhere she

seems to forget his existence. B's sounds do not seem to filter through to her.

She may talk about B, but it seems that the infant as conceptualized is more real

than the infant upstairs crying, or the infant across the room who may be

rocking, or playing, or even actively demanding her attention. This mother

only responds to B when she deliberately turns her attention to do something

to or for B—making a project of it. In fact, M rarely “responds” to B in the

sense of giving care and social attention contingent upon B's behavior. Rather,

M is often so completely unaware of B's signals that her interventions are char-

acteristically at her own whim and convenience.

Scale 4: Acceptance vs. Rejection of the Infant's Needs

This scale deals with the balance between the mother's positive and negative

feelings about her infant—about having an infant and about this particular

one—and with the extent to which she has been able to integrate these

conflicting feelings or to resolve the conflict. At the positive pole, there is love

and acceptance overriding frustrations, irritations, and limitations—or perhaps

more accurately, encompassing and defusing the negative feelings. At the

negative pole, anger, resentment, hurt, or irritation conflict conspicuously with

and limit positive feelings and result in more or less overt rejection of the

infant. It is assumed that the arrival of an infant poses a potentially ambivalent

situation—and that for all mothers there are positive and negative aspects.

Among the negative aspects is the fact that the new infant impinges on and

limits the mother's own autonomy and interferes with other activities which

are important to her in one way or another. Furthermore, there are inevitable

irritations and frustrations in interacting with this particular infant from day to

day. Among the positive aspects is the undeniable appeal an infant makes to his

mother—evoking tenderness, protective needs, and other positive reactions. It is assumed that there are positive and negative elements in all mother-

infant relationships. We are concerned with how the mother, given her present

life situation, has been able to balance them. It is assumed that at the desirable,

accepting, positive end of this continuum negative components are not so much

absent as somehow subsumed within the context of the positive relationship. It

is also assumed that at the undesirable, rejecting,

“negative” end of this

continuum positive components are not so much lacking as they are not integrated

rated with the negative, rejecting components, so that there is an alternation

between tenderness, nurturance, and delight on the one hand, and anger,

resentment, irritation, hurt, and rejection on the other, without any adequate

meshing of the two together. There is a good and lovable infant and a bad and

infuriating infant, but the real infant as he actually exists is somehow lost

between the two. The assessment of the balance between positive and negative is not easy. The

social norm is that mothers love their babies and do not reject them. The angry,

rejecting, negative components of the mother’s relations with the infant tend,

therefore, to be suppressed or repressed. The positive components are, of course,

more acceptable, and the mother usually feels free to express positive feelings

openly. She may even feel impelled to put on a show of affection in excess of

her real feelings. To complicate things further an infant has much appeal even

to an essentially rejecting mother, and she may be genuine in her positive

expressions while trying to hide (perhaps even from herself) her negative feelings

ings. Finally, it is acknowledged to be healthy for a person—even a mother—to

give vent to angry feelings rather than trying to submerge them, with the

consequence that they may simmer for long periods of time during which they

color the tone of behavior and interfere with positive feelings. Momentary

outbursts of anger or irritation must not be given undue weight if they are

embedded in an otherwise clearly positive, warm, loving relationship. On the

other hand, the father must be alert to signs of submerged resentment in the case

of the woman who finds it very difficult to acknowledge anger, and must give

them due weight. Some mothers clearly have positive feelings unexpressed; they express them

frequently and spontaneously and without any apparent striving to play a loving

role, to make a good impression, or even to be kind to the infant. They acknow

ledge the infant's exploratory interests, and do not feel hurt when they lead him

away from her. They sense and respect the infant's budding desire for autonomy

and mastery and understand his anger when he is frustrated; therefore, they do

not view early conflicts of interests as struggles for power in which they must

be aggressive or else be overwhelmed. These are women whose love-hate

impulses are well enough integrated that they can feel almost wholly positive

toward their babies without danger of repressed hostility. Such a mother,

perhaps because she is able to empathize with the infant, does not interpret

instances of disruptive, annoying behavior as an indication of a potential character

defect in the infant which must be "nipped in the bud." Although some

times the infant may seem clearly angry at her, she interprets neither such

episodes, nor episodes of more diffusely uncooperative or annoying behavior,

as adequate reason for her to feel hurt or to institute retaliatory measures. She

may feel a brief surge of annoyance, but she does not consider the infant himself

as a suitable target on which to focus her anger. She may acknowledge his

anger. She may openly express her own exasperations. She may discourage the

behavior in question. She may deal with her own momentary irritability by

some means which gives her a chance to "cool off" before resuming her inter-

action with the infant. But she does not harbor resentment or hurt, and because

she does not "take it out" on the infant, he is unlikely to feel rejected, especially

if momentary irritation or behavior directed disapproval is embedded in

general warm acceptance. Some outwardly accepting mothers are more rejecting than those, described

above, who can give brief, healthy, situation-specific vent to annoyance. The

pseudo-accepting mothers comply with the infant's

demands, but in a way

which is in itself inappropriate. They comply masochistically, and in a pseudo

patient, long suffering way, and usually underneath this type of compliance lies

much repressed aggression—which is usually deep seated and of long standing,

and which has little to do with the infant except as his behavior may serve to

activate this repressed aggression and threaten the defenses against it. Such a

mother cannot give healthy vent to the anger occasioned by the infant's beha

avior. She smooths it, and tries to be patient. Her very defenses against expressing

her anger make it impossible for her to be truly responsive to the infant, and

hence he tends to find her compliance unsatisfying. Both this and the often

inappropriate outbursts of irritation which inevitably break through the

defenses add up to rejection. Clear cut, overt rejection is unmistakable. Some highly rejecting mothers

are quite open in their rejection. Such a mother may say that she wishes that the

child had never been born, or she may be less open but never the less say what a

nuisance he is and how he interferes with her life. Or, she may complain more

specifically, pointing out the infant's defects and shortcomings, and dwelling

on her problems with him. To be sure, to talk with the observer about concerns

and problems does not necessarily imply substantial rejection, but to emphasize

these constantly rather than the infant's good points and the pleasure he yields

suggests at least an underlying current of rejection. (In fact, it is well known that

damaged or handicapped babies, who obviously present more problems than

"normal" babies do, tend also to activate more rejection in their mothers.

Therefore, whether or not the "problem" has an adequate realistic basis is irrelevant

even for our purposes.) Another way in which a mother may voice rejection

attitudes, without actually saying that she rejects the infant, is to say, often in a

heavy-handed "joking" manner, all sorts of uncomplimentary things to the

infant while she is interacting with him—"stink pot," "fatso," "stupid," and

the like—or to comment to the observer, in an apparently "objective" way

that this is an ugly infant, uglier than its siblings, or that it has a flat head,

protruding teeth, or a nasty temper (just like his father's) and the like. (Such

uncomplimentary remarks should be distinguished—although this is some

times difficult—from "tough" comments made by an essentially accepting

mother to disguise from the world just how crazy she is about this infant.) Rejection is of course expressed in behavior as well as verbally. When it is

overt, it is unmistakable. The highly rejecting

mother may show her rejection

by constantly opposing the infant's wishes, by a generally pervasive atmosphere

of irritation or scolding, by jerking him about with ill concealed anger, and by

joining battle with him whenever he seems to challenge her power. Less

obvious—and perhaps less highly rejecting—is chronic impatience, or a

punitive or retaliatory putting of the infant away or deliberately ignoring his

overtures, as though the mother were trying to say to the infant: "You snubbed

me, didn't do what I wanted you to do, rejected my overtures, and now I will

'show you'!" Teasing is sometimes a less obvious way of expressing negative

feeling components. Even when the infant responds positively to teasing, there

seems to be some negative aggressive component in the teaser's behavior—and

in extremes teasing is obviously sadistic, even though the sadism may be veiled

by seeming warmth and good humor. This scale is related to the first quarter scale (A3) Acceptance vs. Rejection—

which dealt with the mother's acceptance-rejection in terms of the degree to

which the infant is felt to interfere with her own autonomy. This emphasis

seemed appropriate during the first three months when the chief issue of accept

ance seemed to be one of the mother's autonomy. In the latter part of the first

year, however, the infant has emerged as more of a person in the mother's

eyes—a person who can be some times entrancing or appealing, and some times

irritating and even infuriating. The present scale therefore focuses chiefly on

the balance between positive and negative feelings. Nevertheless, the previous

issue of the mother's acceptance or resentment of the degree to which the infant

infringes on her own autonomy is still relevant and will be taken into consid

eration. The chief difficulty in rating is expected to occur in trying to distinguish

rejection as defined by this scale from ignoring and neglecting, which is dealt

with in another scale. The rater is referred to the discussion of this point in the

introduction to the other scale. A rule of thumb was suggested. If the infant is

in the same room with his mother, and if it is clear that her ignoring of his

signals is deliberate, then the instance in question will be considered reject

ion—especially if there is evidence that the mother is motivated by an angry

or "hurt" desire to punish or to retaliate. (Similarly, the mother who arbitrarily

puts the infant away—for a nap or gives him to someone else—will be

considered rejecting, especially if there is evidence that she is irritated by his

behavior or tired of him.) It is assumed that somehow the infant can perceive

rejection under these circumstances. If, however, the infant is in another

room—as, for example, when he is crying when put down for a nap or waking

from a nap—the mother's failure to respond will be considered ignoring. It is emphasized that this is only a rule of thumb. Ignoring in the sense of

being oblivious to the infant and failing to perceive his signals may be a special

case of rejection, and may have similar motivation, although the implication is

that the negative component is more completely repressed than in rejection.

Indeed some mothers may be both rejecting and ignoring, alternating more or

less overt rejecting with the covert rejection implicit in ignoring. It never the

less seems worthwhile to distinguish these two variables because it seems likely

that babies respond differently to the two patterns of behavior, and that

certain patterns of infant behavior may be associated with relatively overt rejection

in which the angry component can be more clearly sensed, than with the

covert rejection implicit in ignoring. Furthermore, the positive ends of the two

scales—accessibility and acceptance—may be distinguished. Some mothers are

accessible in the sense of being clearly aware of the infant and yet behave in a

rejecting way. Other mothers may be on balance positive in their feelings, and

hence fairly accepting, and yet may become involved in other activities to the

extent that their accessibility is fairly frequently low.

The Acceptance vs. Rejection of Infant's Needs Scale

9. Highly accepting. M is highly accepting of B and his behavior, even of

behaviors which other mothers find hurtful or irritating. She values the fact

that infant has a will of his own, even when it opposes hers. She is pleased to

observe his interest in other people or in exploring the world, even though this

may on occasion lead him to ignore her overtures. She even finds his anger

worthy of respect. She can, on rare occasions, be irritated or frustrated by B's

behavior, but this tends to be brief—soon over and done with—and it does not

occur to her to feel that B himself is a worthy target upon which to focus her

anger. She not only loves B, but she respects him as an individual. At the same

time she accepts the responsibility for caring for him, and does not chafe against

the bonds which tie her down temporarily and which restrict her from activities

in which she would otherwise enjoy participating. 7. Accepting. The balance of feeling is still clearly toward the positive, and

accepting, loving side, and irritation and resentment are infrequent in comparison.

This mother does not show as much respect for the infant as a separate,

autonomous person as do mothers with higher ratings, and she may not show

as much obvious acceptance of the fact that he has a will of his own, that he is

often interested in other people and things, and that he can get angry. She is

generally patient with B, and her patience seems a matter of genuine acceptance

of his demands and inefficiencies rather than overcompliant, long suffering,

pseudopatience. She seems to suppress (or repress) relatively little of her feelings

toward B, perhaps chiefly because there is relatively little undercurrent of

negative feelings, especially toward him. Moreover, she generally accepts the

limitations to her own autonomy presented by B and her care of him. 5. Ambivalent. M seems chiefly positive in her feelings toward B, and on

occasions she obviously enjoys him; nevertheless, resentment or hurt may break

through in inappropriate ways. The inappropriateness is largely a matter of M

taking some behavior of the infant's—angry, frustrated behavior, or assertion of

will, or momentary preference for other people or things—as a deep seated

mother directed hostility, opposition or rejection, and this leads her to retaliate

with behavior that is essentially rejecting behavior. Or, M may be somewhat

impatient and irritable with the infant at times, rejecting him when he ceases

to be compliant or endearing, and yet there is enough

positive interaction to

preclude a lower rating. Or, M may point out either frequently or inaccurately

that B rejects her, in that he seems to prefer someone else or will not come to

her readily; her dwelling upon behavior that she interprets as rejection seems

likely to imply an underlying resentment of rejecting B. Or, M may tease B when he is

upset, angry, or otherwise difficult—and the teasing, of course, aggravates the

difficulty. For a rating of “5” the expressions of negative feeling must not be

predominant over positive, mutually enjoyable interaction, whatever the

assessment of underlying dynamics; if they are, the rating should be lower. 3. Substantially rejecting. M’s negative responses, veiled or open, are

frequent enough to outweigh expressions of positive feelings toward B—

although she is neither as openly nor as strongly rejecting as women with lower

ratings. Ways in which her anger or resentment toward B may be expressed are

as follows: (a) by putting him away from her when he does not do what she

wants—or by deliberately ignoring him as a retaliation—and this is not merely

a matter of insensitivity but a clear rejection of him; (b) by dwelling in conversation

on B’s bad points and the problems he occasions rather than upon his

good points, accomplishments, and the pleasure he yields; (c) by saying critical,

uncomplimentary, nasty things to and about B in his presence even though

these are "joking" (although it is difficult, these should be distinguished from

"tough" comments designed to conceal strong positive feelings); (d) by a veiled

irritation with B which underlies a long suffering in g, pseudo patient compliance

to his demands (which are perfunctory compliances and hence not satisfying),

and which occasionally becomes overt in impatient, rejecting behavior;

(e) marked impatience; (f) a sadistic undercurrent which is largely concealed

but which comes out in little ways. Also, here, one might classify the mother

who shows hurt, retaliatory behavior more frequently or more strongly than

the "5" or "4" mother. 1. Highly rejecting. M is clearly rejecting of B and her positive feelings

toward him are frequently overwhelmed by her resentment, angry, rejecting feelings

ings. This may be manifested in any one or a combination of different ways. She

may openly voice an attitude of rejection, saying that she is sorry that she ever

had him. Or, she may somewhat less openly voice her rejection by implying

that he is a great nuisance, and that he interferes substantially in her life and

with what she would like to be able to do. Or, she may complain about B more

specifically, pointing out his defects and shortcomings

m in gs. Even though she may

refrain from verbalizing her rejection of B, she may manifest it by a constant

opposition to his wishes, by a generally pervasive atmosphere of irritation and

scolding, by jerking him about with ill concealed anger, and by joining battle

with him whenever he seems to challenge her power. There may be positive

aspects in her relationship with B which suggest that she can enjoy B, but these

are rare and isolated in their manifestations. Note: Difficulties have been encountered in rating highly defended mothers

who seem bland or emotionally detached, and who give evidence neither of

positive acceptance as defined by scale points "9" and "7" nor of the hostile

components of feelings or behavior as specified by the other scale points. It

seems best to rate such women "5," despite the fact that they do not show the

expressions of negative feeling specified in the definition of that scale point. It

is understood that the intermediate points "4" or "6" may also be used,

depending upon the tendency for either negative or positive feelings to break

through the generally emotionless facade. It is further understood that there

may be enough veiled rejection in a seemingly "matter of fact," emotionless

mother to justify a rating of "3" as the rating point is presently defined.

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