sis, separated not just by a novel orientation to understanding clinical cases but also by an incompatible epistemology. Bowlby's interest in observation, research, and the representation of the real rather than the reality of the representation ruled him out of bounds for all but the most unorthodox of psychoanalysts for most of the second half of his life. As Jeremy Holmes (1995) so poignantly observed: "Bowlby's theory and its tremendous ramifications for clinical work were for decades virtually airbrushed out of the psychoanalytic record—rather like some dissident in Stalinist times" (p. 20).

Thus, just as psychoanalysts have consistently and somewhat tendentiously misread attachment theory and found it wanting in richness and explanatory power, so Bowlby consistently focused on the weakest facets of the psychoanalytic corpus, almost as if he wished to forestall a mutually corrective interrelationship. Consequently, Bowlby's followers came from the world of empirical science and laboratory observation. There are exceptions to this trend. Bretherton (1987) presented a thoughtful comparative review of attachment theory, separation-individuation theory, and the theory of infant–mother relatedness presented by Stern. There are some other good examples of integrative attempts, including those of Allen (1995, 2000), Eagle (1995, 1997), Holmes (1993b, 1997), and Marrone (1998). We shall review some of these authors briefly after we have considered potential points of contact between attachment theory and the classical psychoanalytic ideas.

This book will undertake a similar integrative attempt with the aim of demonstrating that the relationship between attachment theory and psychoanalysis is more complex than adherents of either community generally recognize. Indeed there are many points of contact, some obvious, others more subtle, yet others perhaps tenuous. There are also points of significant divergence. As psychoanalytic theory is not at this time a coherent set of propositions, there appears to be no shortcut to exploring areas of overlap by looking individually at each major school of psychoanalytic thought in relation to attachment theory. We shall begin with a brief overview of attachment theory and some key findings of attachment research. Our review of psychoanalytic approaches will start with Freud and end with the work of Daniel Stern. Much that is relevant has to be omitted because of constraints of space and the even more significant limitations imposed by this author's ignorance.

Attachment theory is almost unique among psychoanalytic theories in bridging the gap between general psychology and clinical psychodynamic theory. Many have noted the gulf that exists to this day between theories of the mind that have their roots in empirical social science (largely psychological research), and clinical theories that focus on the significance of individual experience in determining life course, including psychopathology. Paul Whittle (in press) recently described this discontinuity of theories as a fault line that runs across the entire discipline of psychology. Indeed, it is easy to discern the fault line between the tectonic plates of psychoanalysis, where giving meaning to experience is seen as the primary cause of behavior as well as the royal road to its therapeutic change, and the abutting plate of experimental psychology, with its emphasis on parsimony, insistence on reliable observation, and abhorrence of rhetoric and speculative theory-building. Yet attachment theory has a home on both sides of the fault line. How can this be?
John Bowlby’s work on attachment theory started when, at the age of 21, he worked in a home for maladjusted boys. Bowlby’s clinical experience with two boys, whose relationships with their mothers were massively disrupted, made a profound impact on him. A retrospective study he carried out ten years later, examining the history of 44 juvenile thieves (Bowlby 1944), formalized his view that the disruption of the early mother–child relationship should be seen as a key precursor of mental disorder. The one factor that distinguished the thieves from the clinic children was evidence of prolonged separation from parents, particularly striking among those whom he termed “affectionless.” In the late ‘40s Bowlby extended his interest in mother–infant relations by undertaking a review of research findings on the effects of institutionalization on young children (Bowlby 1951). Children who had been seriously deprived of maternal care tended to develop the same symptoms as he had identified in his “affectionless” young thieves. While giving central place to parenting in general and the infant–mother relationship in particular, the 1951 monograph was silent on the mechanisms by which maternal deprivation might be expected to generate adverse consequences. The maternal deprivation literature was itself wide open to alternative interpretations, particularly those that de-emphasized the mother–infant bond (e.g., Rutter 1971). At about the same time, James Robertson, with Bowlby’s encouragement, spent 4 years documenting on film the impact on 18- to 48-month-olds of separation from the parents during an episode of hospital admission or admission to residential nurseries (Robertson 1962). Later, more systematically collected behavioral observations and descriptions that fully confirmed the Robertson material were collected by Christopher Heinicke (Heinicke and Westheimer 1966).

Bowlby was dissatisfied with prevailing views in the first half of the twentieth century concerning the origin of affectional bonds. Both psychoanalytic and Hullian learning theory stressed that the emotional bond to the primary caregiver was a secondary drive, based on the gratification of oral needs. Yet evidence was already available that, in the animal kingdom at least, the young of the species could become attached to adults who did not feed them (Lorenz 1935). Bowlby (1958) was among the first to recognize that the human infant enters the world predisposed to participate in social interaction. Developmental psychology has made this discovery something of a truism (e.g., Meltzoff 1995, Watson 1994). Around the midpoint of the last century, however, Bowlby’s determination to give central place to the infant’s biological proclivity to form attachments to initiate, maintain, and terminate interaction with the caregiver and use this person as a “secure base” for exploration and self enhancement, flew in the face of another kind of (pseudo)biological determinism—one based on the theory of libidinal and aggressive instincts.

Bowlby’s critical contribution was his unwavering focus on the infant’s need for an unbroken (secure) early attachment to the mother. He thought that the child who does not have such provision was likely to show signs of partial deprivation—an excessive need for love or for revenge, gross guilt, and depression—or complete deprivation—listlessness, quiet unresponsiveness, and retardation of development, and later in development signs of superficiality, want of real feeling, lack of concentration, deceit, and compulsive thieving (Bowlby 1951). Later (Bowlby 1969, 1973), he placed these interactions into a framework of reactions to separation: protest → despair → detachment. Protest begins with the child perceiving a threat of separation. It is marked by crying, anger, physical attempts at escaping, and searching for the parent. It lasts for as long as a week, and intensifies at night. Despair follows protest. Active physical movement diminishes, crying becomes intermittent, the child appears sad, withdraws from contact, is more likely to be hostile to another child or a favorite object brought from home, and appears to enter a phase of mourning the loss of the attachment figure (Bowlby 1973). The final phase of detachment is marked by a more or less complete return of sociability. Attempts by other adults to offer care are no longer spurned, but the child who reaches this stage will behave in a markedly abnormal way upon reunion with the caregiver. In the Heinicke and Westheimer (1966) study of separations that ranged from 2 to 21 weeks, two of the children appeared not to recognize their mothers upon reunion, and eight turned or walked away. They alternately cried and looked expressionless. The detachment persisted to some degree following the reunion, and alternated with clingy behavior suggesting intense fear of abandonment.

Bowlby’s attachment theory, like classical psychoanalysis, has a biological focus (see especially Bowlby 1969). Attachment readily reduces to a “molecular” level of infant behaviors, such as smiling and vocalizing, that alert the caregiver to the child’s interest in socializing,
and bring him or her into close proximity with the child. Smiling and vocalizing are attachment behaviors, as is crying, which is experienced by most caregivers as aversive, and engage the caregiver in caretaking behaviors in the hope of terminating the noxious stimulus. Bowlby emphasized the survival value of attachment in enhancing safety through proximity to the caregiver in addition to feeding, learning about the environment, and social interaction, as well as protection from predators. It was the latter that Bowlby (1969) considered the biological function of attachment behavior. Attachment behaviors were seen as part of a behavioral system (a term Bowlby borrowed from ethology). This is key to understanding the heated nature of the controversy between psychoanalysis and attachment theory. A behavioral system involves inherent motivation. It is not reducible to another drive. It explains why feeding is not causally linked to attachment (Harlow 1958) and that attachment occurs to abusive caretakers (Bowlby 1956).

No specific behaviors can be identified with attachment. After three decades of research there appears to be general agreement concerning the key components of attachment as a psychological mechanism. The behaviors that establish and maintain proximity include: 1) signals that draw the caregivers to their children (e.g., smiling), 2) aversive behaviors (such as crying) that perform the same function, and 3) skeletal muscle activity (primarily locomotion) that bring the child to the caregiver. It is self-evident that the vulnerable infant is better protected in close proximity to a genetically related caregiver, and thus its chances of survival to reproduction are increased. The entire system of behaviors has the common function of optimizing proximity across a range of contexts (crawling, smiling, crying, etc). The system exists to ensure a stable internal organization. The organization has a goal and the individual can respond flexibly to environmental changes in a "goal-corrected" manner. Bowlby's martial analogy was to the heat-seeking missile.

There is a subtle but important difference between Bowlby's formulations and those of object relations theorists (e.g., Fairbairn 1952b) at this molecular behavioral level. The goal of the child is not the object, for example, the mother. The goal that regulates the system is initially a physical state, the maintenance of a desired degree of proximity to her. This physical goal is later supplanted by the more psychological goal of a feeling of closeness to the caregiver. Because the goal is not an ob-

ject but a state of being or feeling, the context in which the child lives, that is, the response of the caregiver, will strongly influence the attachment system because if the child perceives the attachment goal to have been attained this will affect the system of behaviors.

Attachment theory from the beginning concerned more than attachment. In fact, as a developmental theory it makes sense only in the context of a number of key distinctions about what is not as well as what is attachment. The exploratory behavioral system is subtly interlinked with attachment, with the attachment figure providing the essential secure base from which to explore (Ainsworth 1963). The child's exploratory behavior comes to an abrupt halt when the child finds the caregiver temporarily absent (Rajecki et al. 1978). The absence of the attachment figure inhibits exploration. Thus secure attachment could be expected to be of benefit in terms of a range of cognitive and social capacities. By contrast, the fear system activates the attachment systems and the availability of the caregiver reduces the child's reaction to stimuli that would otherwise be perceived as dangerous (Bowlby 1973). When the fear system is aroused by what Bowlby called "natural" cues to danger (e.g., unfamiliarity, sudden noise, isolation), the child immediately seeks a source of protection and safety, the attachment figure. Thus separation involves two stressors: unprotected exposure and the sense of being cut off from the critical source of protection. Bowlby reserves the term anxiety for the situation where the fear system is aroused in the experienced absence of the attachment figure. The three behavioral systems—attachment, exploration, and fear—regulate the child's developmental adaptation; in combination they provide a means for the child to learn and develop without straying too far or remaining away too long (Ainsworth and Wittig 1969).

The child's tendency to seek companionship when the fear system is not aroused is accounted for by the activation of a sociable or affectional behavioral system. "The child seeks a playmate when he is in good spirits and confident of the whereabouts of his attachment figure" (Bowlby 1969, p. 307). The caregiving system is a subset of parental behavior designed to promote proximity and comfort when the parent perceives that the child is in real or potential danger (Cassidy 1999, p. 10). The caregiving system ideally acts reciprocally to the child's attachment system. In reality, there may be instances where the caregiving system is activated when the child's distress is not associated with real or per-
ceived danger. For example, a caregiver responding to the child's distress that arose out of frustration at not being able to explore by further caregiving (e.g., soothing) is going to aggravate rather than ameliorate the situation.

The attachment bond is a subclass of the so-called affectional bonds or ties, where one individual has great emotional significance for another and is therefore not interchangeable. Closeness to this individual is desired and distress follows separation. An affectional bond becomes an attachment bond when the individual seeks security or comfort from the relationship (Ainsworth 1989). Thus, whilst affectional bonds may or may not be symmetrical, attachment bonds are appropriately normally profoundly asymmetrical: a parent who attempts to seek security from a child is likely to manifest other signs of psychological disorder and to thus generate disorder in the child (Bowlby 1969, p. 377). Affectional bonds also highlight the relationship between attachment and sexuality. Bowlby recognized that there are usually close linkages between attachment and sexual behaviors and went on to write: "... distinct as the two systems are, there is good evidence that they are apt to impinge on each other and to influence the development of each other" (Bowlby 1969, p. 233). The facts that sex can undoubtedly occur without attachment, and that marriages without sex perhaps represent the majority of such partnerships, prove beyond doubt that these systems are separate and at most loosely coupled.

Children have the propensity to form a number of attachment relationships in early life and there appears to be a hierarchy of major caregivers with a preferred principal attachment figure (Bretherton 1980). Among the factors that determine which caregiver is at the top of the hierarchy are issues such as the amount of time the infant spends in that person's care, the quality of the care, the emotional investment of the adult in the child, and the frequent reappearance of the person (Cassidy 1999, Colin 1996). The multiplicity of attachment relationships is an important point of contact between attachment and psychoanalytic theory.

In the first volume of the Attachment and Loss trilogy, Bowlby (1969) was not yet clear about how attachment behavior functioned beyond the termination of the system once physical proximity was ensured. Proximity was the set goal of the attachment system, its measurement was simple and purely behavioral. The absence of the figure gen-

erates the biological need; her return and presence turns it off. Little wonder then that the majority of psychoanalysts were horrified by such apparently simplistic approach that bore the hallmarks of the worst excesses of behaviorist reductionism. As it often appears to be the case (and was the case with critical appraisals of psychoanalytic theory itself), critical opinions tend to fix upon early formulations and hold fast and unchangeable, regardless of changes and advances in the object of the critique (often in response to the very same critiques).

In the 1970s the work of Ainsworth (Ainsworth et al. 1978) helped to refine the attachment concept. She recognized that separation (physical absence of the mother) was not the key to understanding the infant's response to the Strange Situation. It was the infant's appraisal or evaluation of the mother's departure in the context of her expected behavior that accounts for the infant's response. At least in older children upset by laboratory separation, it is not the mother's absence but rather her apparently arbitrary behavior that accounts for the child's distress and the relief occasioned by her return. This more elaborate, dynamic-cognitive model could then be extended to the clinical literature on maternal deprivation that had been reviewed by Bowlby. The disruptions occasioned by separation from the primary caregiver are moderated by an increasingly complex set of (unconscious) evaluative processes.

In the second volume of the trilogy, Bowlby established the set goal of the attachment system as maintaining the caregiver's accessibility and responsiveness, which he covered with a single term: availability (Bowlby 1973, p. 202). In fact it was not until the third section of the book that he addressed the critical role of appraisal in the operation of the attachment system. Here he asserts that availability means confi-

1. This is a 20-minute laboratory test where the child is exposed to two "miniscule separations" of a maximum of 3 minutes each. Mary Ainsworth and her colleagues (Ainsworth et al. 1978) found that the majority of middle-class one-year-old children respond to the mother with proximity seeking and relief at reunion (securely attached—B infants) but about 25 percent respond with subtle signs of indifference (anxious avoidantly attached—A infants) and a further 15 percent respond with proximity seeking but little relief at reunion (anxious resistantly attached—C infants). The results from this assessment will be discussed more fully in the next chapter and throughout the book.
dent expectation, gained from "tolerably accurately" (p. 202) represented experience over a significant time period, that the attachment figure will be available. The attachment behavioral system thus came to be underpinned by a set of cognitive mechanisms, discussed by Bowlby as representational models or following Craik (1943) as internal working models. Bowlby's views were actually quite "Piagetian." 2

The positing of a representational system underpinning attachment permitted a far more sophisticated consideration of individual differences (Bowlby 1973, 1980a). Given the power of the biological forces driving the human attachment system, it is assumed that almost all human beings will become attached. Attachment, as we have seen, may be secure or insecure. Secure attachment implies representational systems where the attachment figure is seen as accessible and responsive when needed. Anxious attachment implies a representational system where the responsiveness of the caregiver is not assumed and the child adopts strategies for circumventing the perceived unresponsiveness of the attachment figure (Ainsworth et al. 1978). Bowlby was prescient in assuming that caregiver responsiveness was critical in determining the security of the attachment system: "the extent to which the mother has permitted clinging and following, and all the behavior associated with them, or has refused them" (Bowlby 1958, p. 370). As we shall see, considerable empirical support has been gathered for this assumption (De Wolff and van IJzendoorn 1997, NICHD Early Child Care Research Network 1997).

Thus the central feature of the internal working model concerns the expected availability of the attachment figure. A complementary working model of the self is also envisioned by Bowlby. The key feature of this is how acceptable or unacceptable the child feels in the eye of the attachment figure. A child whose internal working model of the
caregiver is focused on rejection is expected to evolve a complementary working model of the self as unlovable, unworthy, and flawed. Although not explicitly stated by Bowlby, these models of the attachment figure and the self are transactional, interactive models representing self–other relationships. The development of cognitive science and the concurrent increasing prominence of object relations theory in psychoanalysis led to a variety of constructs in developmental, social, cognitive, and clinical psychology, broadly encompassing relational representations or schemas with the primary function of processing social information (Baldwin 1992, Westen 1991). The similarities and differences between the hypothetical structure envisioned by Bowlby, its reformulation by attachment theorists (see below), and current psychoanalytic thought is one of the major topics of this monograph.

Bowlby's original concept has been thoughtfully elaborated by some of the greatest minds in the attachment field (Bretherton 1991, Bretherton and Munholland 1999, Crittenden 1990, 1994, Main 1991, Main et al. 1985b, Sroufe 1990, 1996) and no attempt to review these exhaustively can be undertaken here. However, it might be helpful to summarize the four representational systems, illustrated in Figure 1–1, that are implied in these reformulations: 1) expectations of interactive attributes of early caregivers created in the first year of life and subsequently elaborated; 2) event representations by which general and specific memories of attachment-related experiences are encoded and retrieved; 3) autobiographical memories by which specific events are conceptually connected because of their relation to a continuing personal narrative and developing self-understanding; and 4) understanding of the psychological characteristics of other people (inferring and attributing causal motivational mind states, such as desires and emotions, and epistemic mind states, such as intentions and beliefs) and differentiating these from those of the self.

In the late 1970s the story was elaborated once again by two of the most thoughtful theoreticians in the field, Alan Sroufe and Everett Waters (Sroufe and Waters 1977a). The set goal of the attachment system was "felt security," rather than physical distance regulation. Thus, internal cues such as mood, illness, or even fantasy could be seen as relevant to the child's response to separation, as well as external events and the social environmental context. Felt security as a concept extended the applicability of the concept of attachment from early

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2. The influence of Piaget on Bowlby is less frequently recognized than that of ethologists like Konrad Lorenz and Robert Hinde. Yet both Lorenz and Piaget were attendees of the discussion groups that Bowlby organized at the World Health Organization in Geneva on parental care and personality development. These meetings were commissioned by Ronald Hargreaves, a friend of Bowlby's and another University College Hospital graduate, who was in charge of the mental health work of WHO at the time and should be credited with considerable vision in promoting a socially sophisticated approach to psychiatry.
Potential external threats to appraisals of availability take up a considerable portion of the 1973 book. Bowlby is impressed by symbolic communication of abandonment, such as threats of suicide, of leaving, or of sending the child away. While such experiences are posited as "actual," in this domain the reality of a threat and the child's psychic reality clearly overlap. Bowlby, for example, refers to metaphoric communications by the parent (e.g., "you will be the death of me"), interpreted concretely by the child as threatening availability. Domestic violence is a particularly potent source of developmental problems precisely because the fear of harm coming to the parent leads to anticipations of unavailability, confirmed by the inaccessibility of the mother at moments of acute marital conflict (Davies and Cummings 1995, 1998). The consistent observation that open communication can reduce the extent to which disruptive events, such as parental anger, are perceived as threatening (Allen and Hauser 1996, Allen et al. 1996) implies a reduced role for fantasy as a source of bias in the appraisal of availability.

In his later works, Bowlby (1979, 1980a, 1987) was increasingly influenced by cognitive psychology and particularly by the information processing model of neural and cognitive functioning. Just as cognitive psychologists defined representational models in terms of access to particular kinds of information and data, Bowlby suggested that different patterns of attachment reflect differences in the individual's degree of access to certain kinds of thoughts, feelings, and memories. For example, avoidant insecure models of attachment permit only limited access to attachment-related thoughts, feelings, and memories, whereas others provide exaggerated or distorted access to attachment-relevant information. Thus, for Bowlby, cognitive as well as emotional access to attachment-relevant information emerges as a function of the nature of the past relationship between infant and caregiver.

During the late 70s and 80s, attachment research came to be increasingly concerned with child maltreatment, physical and sexual abuse. The disorganized/disoriented classification of strange situation behavior marked by fear, freezing, and disorientation (Main and Solomon 1986) was linked to maltreatment of the child (e.g., Cicchetti and Barnett 1991) and unresolved trauma in the history of the parent (Main and Hesse 1990). The frightened/frightening behavior of the parent is assumed to undermine the child's attachment organization (Main and
The attachment figure being at once the signal of safety and of danger can be readily seen to potentially undermine the entire attachment behavioral system. Childhood maltreatment accounts for some but not all attachment disorganization observed in infancy. The potential reasons for the disorganization of the attachment system were therefore extended to include experiences that were more subtle but nevertheless deeply unsettling from an infant's point of view. Moments of dissociation or strange, frightened expressions have been observed in parents of infants whose strange situation behavior was classified as disorganized (Schuengel et al. 1999a; Schuengel et al. 1999b). Infant disorganization has been linked to later psychopathology in a number of longitudinal investigations (Lyons-Ruth 1996b, Shaw et al. 1996), including dissociative symptoms in particular (Carlson 1998). While attachment is still seen as all-pervasive, research and theory on attachment disorganization offers a more satisfactory theoretical link between early attachment experience and personality disturbance than has thus far been available and is therefore the cutting edge of current clinical attachment research (Lyons-Ruth and Jacobovitz 1999, Solomon and George 1999a).

The biological basis of attachment remains rooted in animal studies. Myron Hofer's work with rodent pups identified regulatory interactions within the mother–infant relationship that have clear analogies to what is proposed here (Hofer 1995, Polan and Hofer 1999). Hofer's work over three decades has revealed that the evolutionary survival value of staying close to and interacting with the mother goes way beyond protection and may be expanded to many pathways available for regulation of the infant's physiological and behavioral system. Hofer's view is that the attachment “relationship provides an opportunity for the mother to shape both the developing physiology and the behavior of her offspring through her patterned interactions with her infant” (Polan and Hofer 1999, p. 177). Attachment is not an end in itself—it is a system adapted by evolution to fulfill key ontogenetic physiological and psychological tasks. Hofer's reformulation of attachment in terms of regulatory processes, hidden but observable within the parent–infant interaction, provides a very different way of explaining the range of phenomena usually discussed under the heading of attachment. The traditional attachment model is clearly circular. The response to separation is attributed to the disruption of a social bond, the existence of which is inferred from the presence of the separation response. What is lost in “loss” is not the bond but the opportunity to generate a higher order regulatory mechanism: the mechanism for appraisal and reorganization of mental contents. In this context attachment is conceptualized as a process that brings into being complex mental life into being from a multi-faceted and adaptable behavioral system. Some, but by no means all, of such mental function is unique to humans. The mechanism that generates these (the attachment relationship) has evolutionary continuity across nonhuman species. Just as in rat pups the ontogenetic development of biological regulators crucially depends on the mother–infant unit, so in human development psychological interpretive capacity evolves in the context of the repetitive interactions with the mother.

So how does attachment theory differ from more traditional psychoanalytic ideas? Attachment theory continues to make use of three out of Rapaport and Gill's (1959) five basic psychoanalytic viewpoints. The perspective that Bowlby took forward most forcefully into his new theory was the genetic viewpoint (his developmental view). The structural point of view was also taken forward and elaborated substantially in the context of modern cognitive psychology. The adaptive point of view also has a clear central place in the context of the detailed description of caregiver–child psychology. All three of these principles are evident at work in Bowlby's original formulations and are still at work in more recent adaptations of the work. However, two points of view were explicitly discarded. These were the economic and the dynamic viewpoints (although in the last volume of his trilogy a whole section is devoted to perceptual defense and other unconscious processes).

To most psychoanalysts of the '50s and '60s the latter points of view were far more critical to the definition of the discipline than the first three. To make matters worse, Bowlby added a number of new perspectives to psychoanalytic thinking that at the time were hard to digest. These were: an ethnological (what we now recognize as a sociobiological) perspective on mental function, an object relations perspective, with relationships rather than bodily drives as motivators of behavior, an epistemological perspective that privileged the external environment, and a research perspective that cast aspersions on the value of traditional clinical reports as the sole data source of psychoanalytic inquiry. It is hardly surprising that he was less than popular with his colleagues.
- A rapprochement has become possible because of a number of concurrent historical events and changes. These are: 1) A shift within attachment theory from a focus on infant behavior and its determinants in the child's physical environment to a broader concern with internal representations in the infant and the parent; 2) increasing concern within psychoanalysis with systematic observation and empirical research, together with a severe shortage of paradigms that are scientifically acceptable (reliable and valid) and provide information of interest to psychoanalytic clinicians and theoreticians; 3) the breakdown of the theoretical hegemony that governed psychoanalysis in the United States (and to a lesser extent in Europe), which led to more openness to the possibility of plurality in theory, where clinical usefulness and intellectual appeal are the primary criteria for the acceptability of new ideas; and 4) a growing recognition within attachment theory of a certain sense of "paradigm boundedness," recognition of the limitations of a purely cognitive science approach in clinical work and a need for alternative theoretical frames of reference to enrich research and theory building of relevance to clinicians. So on both sides the wish for integration might be developing.

Key Findings of Attachment Research

It is beyond the scope of this brief monograph to offer any kind of comprehensive summary of the findings of three decades of attachment research. Certain empirical observations have already been alluded to above. In this section we shall briefly overview selected findings that have contributed to the development of attachment theory and/or are likely to have a bearing on its evolving relationship to psychoanalysis. There are, fortunately, excellent recent reviews of this work; in particular the edited volume by Cassidy and Shaver (1999) represents a definitive summary, and Allen's (2000) monograph is an accessible yet authoritative integration of clinically relevant findings.

THE MEASUREMENT OF ATTACHMENT IN CHILDHOOD

Advances in attachment theory have, in part, been driven by discoveries concerning individual differences in attachment behavior in
infants and adults. Research on the determinants of attachment security critically depends on reliable and valid measures of attachment class. A range of instruments and coding systems are available to assess attachment classification. As most findings to be considered here depend on these instruments, it is helpful to consider briefly what they are based on and what they offer.

The Strange Situation

The strange situation, devised by Mary Ainsworth and her colleagues (Ainsworth et al. 1978), is a simple laboratory procedure to measure attachment in infants of 1–2 years. It involves two episodes of brief separation between the infant and the caregiver. The infant’s behavior during separation, but particularly upon reunion with the caregiver, is classified into one of four categories: securely attached (B), anxiously attached avoidant (A), anxiously attached ambivalent/resistant (C), and disorganized/disoriented (D). The secure pattern of distress at separation and reassurance by the reunion is thought to reflect an internal working model characterized by confidence that the caregiver will be comforting. The anxious avoidant pattern is thought to indicate the infant’s lack of confidence in the caregiver’s availability, leading to a strategy of trying precociously to control or down-regulate emotional arousal, to show little distress during separation and definite disinterest at reunion, in an immature attempt to cope with separation. Anxious ambivalent/resistant infants, who show distress at separation but are not comforted by the caregiver’s return, appear to have adopted the strategy of exaggerating or up-regulating affect in order to secure the caregiver’s attention. The disorganized/disoriented infant, in general, seeks proximity to the mother in strange and disoriented ways, for example, approaching the mother backwards, hiding, suddenly freezing in the middle of a movement, or just staring into space (Main and Solomon 1990).

There is current controversy concerning the stability of the classification obtained in the strange situation. The patterns described by Ainsworth are of interest to attachment theorists if they reflect the persistent cognitive emotional structures governing the attachment behavioral system described by Bowlby (1973). While early studies clearly indicated that attachment classification obtained in the strange situation met the criteria of stability, more recent investigations have been quite disappointing. For example, relatively recently, and out of line with previous investigations, Belsky and colleagues reported that less than 50 percent of infants tested were given the same category in the ABC classification upon a retest three months later (Belsky et al. 1996a). The stability of the D classification has been generally high (Lyons-Ruth et al. 1991). On the whole, stability appears to be low in high-risk samples where major changes in family function are common (Solomon and George 1999b).

The Cassidy and Marvin System

The Cassidy and Marvin system is a five-category attachment classification for pre-school and kindergarten children (2½ to 4½) (Cassidy and Marvin 1992). The reunion of secure children is described as smooth, open, warm, and positive, while those of ambivalent children are described as strong on proximity-seeking but babyish and coy. Avoidant children appear somewhat detached and nonchalant, avoiding physical or psychological intimacy. The disorganized category of infant attachment is sometimes seen at this age as controlling, sometimes as punitive behavior, as well as there being behaviors characteristic of infant disorganization. There is also an insecure other classification for behaviors that cannot be described in terms of the above four categories. There are two alternative systems for this age group: Crittenden’s pre-school assessment of attachment (Crittenden 1992) and Main and Cassidy’s attachment classification for kindergarten-age children (Main and Cassidy 1988). While the Cassidy and Marvin system is the best investigated of the three, none of these systems has been subjected to the kind of rigorous assessment that the strange situation test underwent, thus attachment data from this age group should be treated with some caution.

Measures Based on Symbolic Representation

There are a range of measures based on the assumption that for children aged 5 and above behavioral measures of attachment will be of limited use and children’s symbolic production will provide a more accurate indication of the status of the control system governing attachment behaviors. Coding systems have been developed to assess children’s
responses to the Separation Anxiety Test (SAT), a range of images depicting attachment related scenes (Slough and Greenberg 1990). In this context secure children would discuss dealing with separation as depicted in the pictures in constructive ways, avoidant children would appear at a loss as to suggesting methods of coping, ambivalent children might combine anger with the parent in the picture with a wish to please the parent, while disorganized children would express fear or disorganized disoriented thought processes (Kaplan 1987). An alternative measure based on symbolic representation is a doll play involving separation and reunion stories (Bretherton et al. 1990). This was developed further by Carol George and colleagues (Solomon et al. 1995) as well as David Oppenheim (Oppenheim et al. 1997). While the SAT is the most commonly used symbolic measure of attachment, there is increasing evidence that the quality of story stem completion narratives might be a highly satisfactory assessment of the IWM in 5–7-year-olds (e.g., Steele 1999).

A similar but more complex and sophisticated approach was recently reported by Green and colleagues (Green 2000). An innovative aspect of the approach is the deliberate arousal of the child’s attachment system by the experimenter up to the point when he or she shows concern in relation to the narrative that is being presented in the context of a doll house story completion task. The assessment appears to be acceptable and productive in use with children up to 7 years of age. The classification has good psychometric properties and a strong relationship was found with mother’s AAI classification.

The Child Attachment Interview (CAI)

The CAI has been successfully extended to cover lower age groups. The interview has been shown to be valid for adolescents as young as 12–14 (Ammaniti et al. 1990, Ammaniti et al. in press) and was used by Trowell in a study of sexually abused preadolescent girls. The Child Attachment Interview (Target et al. in preparation) is a developmentally appropriate interview and coding system for 8–14 year olds with the potential to be extended for verbal 6–7 year olds. The CAI is a modified version of the AAI with radical changes to interviewer instructions and probes. The interviewer does not expect the child to produce a narrative, and the focus of the interview is not the past but the current relationship with the parent. The coding system offers a secure–insecure classification that has been shown to be reliable and stable as well as strongly associated with parental AAI’s.

The Attachment Q-sort

An alternative approach to classifying the child’s behavior in the laboratory or mental representations as these emerge in semi-projective or projective tests is the actual observation of the behavior of the child in the home over a relatively prolonged period (2–6 hours over separate visits) (Posada et al. 1995, Waters 1995, Waters and Deane 1985). The measure is both stable and reliable. Recently, some concern has been expressed that the AQS measures a construct somewhat different from the strange situation (van IJzendoorn et al., in press). The relationship between the strange situation and the AQS is moderate at best and it is possible that the AQS is more sensitive to confounding by temperamental differences than the strange situation. Nonetheless, many results concerned with attachment security do use the AQS as the primary measure of attachment.

The Adult Attachment Interview (AAI)

Foremost amongst the measures of adult attachment that captured the interest of psychoanalysts is the Adult Attachment Interview (George et al. 1996). The interview is a narrative about childhood similar to the sort that might be taken in the course of any psychotherapy assessment. It has the special feature of getting to sensitive childhood issues rapidly and persistently—what Mary Main rather aptly refers to as “surprising the unconscious.” Interview protocols are transcribed and classified according to a coding system that privileges narrative form (Main and Goldwyn 1998a,b). At the heart of the system is Grice’s (1989) cooperative principle of rational discourse. Interview narratives that score high on coherence come from speakers who give evidence for what they say, are succinct yet complete, relevant to the topic at hand, and clear and orderly. Attachment security in the coding system (the autonomous classification—F) is most closely associated with high coherence. There are three insecure patterns: the dismissing (idealizing or derogatory about attachment—Ds), the preoccupied (angry or passive—E), and the unresolved in relation to loss or abuse (U). The
D's and E categories map both conceptually and empirically onto the avoidant and ambivalent/resistant infant categories respectively. The U category, while specific to signs of cognitive disorganization in parts of the interview where the subject is questioned about loss or abuse, corresponds to the general disorganization of the attachment system assumed to characterize D infants.

The Adult Attachment Interview was quickly adopted by researchers because of its unique capacity to predict the infant's attachment classification from the caregiver's AAI narrative, even before the birth of the infant. This has now been demonstrated in at least 14 studies (van IJzendoorn 1995). Furthermore, AAI classifications are stable over a two-month period and independent of verbal and performance IQ, autobiographical memory, social desirability, interviewer effects, and general discourse styles (Bakermans-Kranenburg and van IJzendoorn 1993, Crowell et al. 1996, Fonagy et al. 1991b, Sagi et al. 1994). The AAI predicts maternal sensitivity but not sufficiently to explain its association with the strange situation classification (Pederson et al. 1998). A comprehensive review of the impressive body of research findings that have accumulated using the AAI is provided by Hesse (1999).

The Current Relationship Interview

Drawn up to be analogous to the AAI, the Current Relationship Interview assesses the security or insecurity of current attachment relationships (Crowell and Owens 1996). An interview is rated secure if the subject is able convincingly to describe his or her own and the partner’s secure base behavior or describe negative partner behavior in a coherent way. Dismissing and preoccupied interviews reflect insecurity by idealization and anxious dissatisfaction respectively. An interview is coded unresolved when a romantic relationship is currently exerting a disruptive influence on cognitive organization. There is a weak but statistically significant relationship between the AAI and the CRI (Gao 1998, cited in Crowell 1999).

Self-Report Measures of Adult Attachment

A wide range of questionnaire measures purporting to measure adult attachment are currently available. Self-report measures of attachment history include: the Attachment History Questionnaire (Potthast 1990), the Inventory of Parent and Peer Attachment (Armsden and Greenberg 1987b), and the Reciprocal and Avoidant Attachment Questionnaire (West and Seldon-Keller 1994). There are also measures of the security of romantic attachment: the Attachment Style Questionnaire (Hazan and Shaver 1987), and, building on this, the Relationship Questionnaire (Bartholomew and Horowitz 1991). These are simple instruments where brief descriptions are offered of a person's general attitude to relationships and the subject is asked to indicate which description he or she feels greatest affinity with. Descriptions are of a secure, a fearful, a preoccupied, and a dismissing individual. A more traditional questionnaire version of this instrument was provided by Griffin and Bartholomew (1994). Excellent reviews of these and other measures are provided by Stein (1998) and Crowell and colleagues (1999).

DETERMINANTS OF ATTACHMENT SECURITY

Following the Bowlby–Ainsworth model, the determinants of attachment security may be seen as either proximal or distal. Proximal determinants impact on the quality of the parent–infant relationship and principally concern infant temperament and maternal sensitivity. Distal predictors are assumed to act on proximal determinants. But this kind of mediational model is only relatively infrequently explored by researchers and even less often shown to be accurate.

Infant temperament is not generally regarded as a powerful determinant of attachment security. Vaughn and Bost (1999) conclude their exhaustive review thus: “attachment security cannot be considered as redundant with temperament in the explanation of personality and/or in explanation of qualities of interpersonal actions” (p. 218). In general, parent reports of temperamental difficulty, negative reactivity, and emotionality are independent of secure/insecure classification. However, irritability in early infancy does appear to increase the risk of insecurity by potentiating (increasing the impact of) inadequate caregiving practices when social disadvantage places caregivers under specific stress (e.g., Susman-Stillman et al. 1996, van den Boom 1994).

Maternal caregiving makes a clear contribution to attachment security. In particular, maternal sensitivity, responsiveness to distress,
predict not only the child's security of attachment but, even more remarkably, the precise attachment category that the child manifests in the strange situation (van IJzendoorn 1995). Thus, dismissing AAI interviews avoidant strange situation behavior while preoccupied interviews predict anxious-resistant infant attachment. Lack of resolution of mourning (unresolved interviews) predict disorganization in infant attachment (see below). Temperament (child → parent effects) seems an inadequate account of the phenomena since the AAI of each parent, collected and coded before the birth of the child, predicts the attachment classification of the infant at 12 and 18 months (Fonagy et al. 1991b, Steele et al. 1996a).

Recent evidence by Slade and her colleagues provided an important clue about the puzzle of intergenerational transmission of attachment security. They demonstrated that autonomous (secure) mothers on the AAI represented their relationship with their toddlers in a more coherent way, conveying more joy and pleasure in the relationship, than did dismissing and preoccupied mothers (Slade et al. 1999a). We believe that the parent's capacity to adopt the intentional stance towards a not-yet-intentional infant, to think about the infant in terms of thoughts, feelings, and desires in the infant's mind and in their own mind in relation to the infant and his or her mental state, is the key mediator of the transmission of attachment and accounts for classical observations concerning the influence of caregiver sensitivity (Fonagy et al. 1991a). Those with a strong capacity to reflect on their own and their caregiver's mental states in the context of the AAI were far more likely to have children securely attached to them—a finding that we have linked the parent's capacity to foster the child's self-development (Fonagy et al. 1993b). We have also found that mothers in a relatively high-stress (deprived) group characterized by single-parent families, parental criminality, unemployment, overcrowding, and psychiatric illness would be far more likely to have securely attached infants if their reflective function was high (Fonagy et al. 1994). This is preliminary support for the Freudian notion (1920) that those who do not remember and come to terms with the past are destined (are more likely) to repeat it, at least with their children.

The child's social context is an equally important, even if theoretically distal, determinant of attachment security. On the whole, parents with better functioning personalities are more likely to have
securely attached infants (Del Carmen et al. 1993, Maslin and Bates 1983). Children with greater exposure to more severely depressed mothers are more likely to be classified insecure (Lyon-Ruth et al. 1986, Radke-Yarrow et al. 1985, Teti et al. 1995), as are children living with significant marital disharmony (Erel and Burman 1995) and those living with mothers with inadequate social support (Crittenden 1985, Crnic et al. 1986). Many of these effects are small, relatively unreliable, and thus commonly not replicated. Belsky (1999a) suggests that predictors of attachment security should be conceived of as other risk factors in developmental psychopathology and considered to be additive or even interactive with one another. In any case, current evidence suggests that proximal predictors (e.g., mother–infant interaction) of attachment are relatively weak and distal predictors (e.g., parental psychopathology) are weaker still. The weakness of the prediction from either source may suggest powerful genetic effects or the restricted range of measurement in most psychosocial studies, which tend to sample psychosocial environments from within a fairly restricted, homogeneous range (Maccoby 2000).

PREDICTION FROM EARLY ATTACHMENT TO LATER DEVELOPMENT

Bowlby was unequivocal in his conviction that differences in the security of infant–mother attachment would have long-term implications for later intimate relationships, self-understanding, and psychological disturbance. Individual differences in attachment classification have been studied in relation to an exceptionally wide range of later outcomes, spanning cognitive capacities such as verbal IQ, interpersonal capacities, skills, and psychopathology. The findings from these studies only partially support claims for the formative nature of early attachment relationships (Belsky and Cassidy 1994, Thompson 1999). While secure attachment in infancy predicts more positive subsequent parent–offspring interaction in the short term (e.g., Slade 1987), researchers failed to find strong and enduring direct associations between secure attachment in infancy and parent–child interactions at ages 6 and beyond (e.g., Grossmann and Grossmann 1991). Some studies do demonstrate considerable concordance between assessments of attachment classification in parent–child dyads at various ages (Main and Cassidy 1988, Wartner et al. 1994). Substantial continuity of secure versus insecure classifications from the ages of 18 months to 20 years has also been reported using the Adult Attachment Interview (Hamilton in press, Waters et al. in press), 72 percent and 77 percent respectively. Stability has been less remarkable in other samples (Grossman et al. 1999, Weinfield et al. in press). It is highly unlikely that continuity is to be expected in the natural course of development. The likelihood of developmental continuity probably critically depends on important mediating conditions in the ecology of the family life that are not yet known and could not be monitored in these studies.

The Bowlby–Ainsworth model would also lead one to expect accurate prediction from the infant–mother relationship to other close dyadic relationships. There is tentative evidence that a secure infant–mother relationship predicts more harmonious interaction with siblings (e.g., Teti and Ablard 1989, Volling and Belsky 1992), and a substantial body of data suggests that, at pre-school and at age 10, more appropriate relationships evolve between children who were securely attached in infancy and their teachers and counselors (e.g., Weinfield et al. 1999). There are mixed findings concerning the superiority of those with a history of secure attachment in more general social competence. In some studies, such as the Minneapolis Project and the two German samples, secure attachment history predicts greater peer competence even to adolescence. In other studies, long-term follow-ups to pre-school, middle childhood, and beyond reveal small or insignificant effects (Berlin et al. 1995, Howes et al. 1994, Lewis and Feiring 1989, Youngblade and Belsky 1992). Most recently the young adult follow-up of the Bielefeld longitudinal study (Grossman et al., in press), demonstrated substantial continuity on a relatively small sample of 38 young adults in terms of their partnership representations. The young adults’ quality of discourse about their partnership was strongly predicted by a composite index of maternal sensitivity and valuing of attachment. Twenty-two-year-olds who had experienced a mother rated as sensitive to a pre-verbal as well as a verbal young child had a coherent discourse about their partnership which gave evidence of self-reflection and respect of the partner’s autonomy. Particularly striking in these results was that maternal sensitivity to the infant in the first year appeared to significantly predict by itself the quality of discourse about a partnership.
at age 22. Thus there are a few reliable, long-term consequences of attachment security in infancy, but do these justify the classic theoretical portrayals of mother–infant attachment as the prototype of all later relationships?

Evidence linking attachment in infancy with personality characteristics is again stronger in some studies than in others. In the Minnesota Study, pre-schoolers with secure attachment histories were consistently rated by teachers as higher in self-esteem, emotional health, agency, compliance, and positive affect, and this persisted to assessment at age 10 (Ellicker et al. 1992, Weinfield et al. 1999). The most recent findings from this cohort still show a prediction from infancy to adult measure of psychiatric morbidity with many potential confounding factors controlled for (Carlson 1998, Weinfield et al. 1999). However, not all studies are able to replicate these findings (e.g., Feiring and Lewis 1996). In contrast to Bowlby’s prediction, the secure, avoidant, and resistant classifications tend not to be strongly related to later measures of maladaptation; it is the disorganized/disoriented infant category that appears to have the strongest predictive significance for later psychological disturbance (Carlson 1998, Lyons-Ruth 1996a, Lyons-Ruth et al. 1993, Ogawa et al. 1997) and we shall explore this association in detail in the section below. More generally, associations between secure infant attachment and personality characteristics such as ego resilience appear in some samples and not others, and the prediction of behavioral problems from insecurity, when observed, appears to be moderated by intervening experiences such as gender differences, environmental stress, or the child’s intellectual capacity (Erickson et al. 1985, Fagot and Kavanagh 1990, Lyons-Ruth et al. 1993). Across a range of studies, it is striking that consistent personality sequelae of secure attachment are difficult to identify. Each of the factors looked at is likely to be influenced by a range of determinants, none of which can be controlled for across these longitudinal investigations. Evidence that suggests that attachment is the foundation for later adaptation is neither reliable nor consistent. It is precisely these kinds of gaps between theory and evidence that, in our view, should call attachment theorists’ attention to the need to open dialogue with other theoretical approaches, including numerous psychoanalytic ideas.

To be specific, evidence is accumulating that suggests that, while the residue of early attachment might not be very apparent in overt functioning, it may have discernible effects on the mental processes that underpin personality and psychopathology. This evidence comes from studies that attempt to identify associations between attachment history and representational capacities concerning self, other, and self–other relationships. For example, securely attached children describe themselves in generally more positive terms, but are also capable of admitting that they are not perfect, while insecurely attached children are less willing to admit to flaws, although they are more negative in terms of their self-description (Cassidy 1988). Children with secure attachment histories remember positive events more accurately than negative events (Belsky et al. 1996). In another study, children deemed to be securely attached obtained higher scores on two assessments of emotional understanding, explained by their greater competence in understanding negative emotions (Laible and Thompson 1998). Attachment classification of first-graders predicted the extent to which children attributed benign motives to story characters (Cassidy et al. 1996). Infant attachment has also been shown to predict performance on theory of mind tasks (Fonagy 1997). To anticipate our final argument somewhat, the early relationship environment is crucial not because it shapes the quality of subsequent relationships (for which evidence is lacking, as we have seen) but because it serves to equip the individual with a mental processing system that will subsequently generate mental representations, including relationship representations. The creation of this representational system is arguably the most important evolutionary function of attachment to a caregiver. Adopting this perspective helps redress the prevailing bias against the centrality of the family as the major force in socialization, but it also shifts the emphasis from content of experience to psychological structure or mental mechanism and involves expanding on current ideas of the evolutionary function of attachment.

ATTACHMENT AND PSYCHOPATHOLOGY

Psychopathology in Childhood

Numerous studies of low risk samples failed to identify the simple relationship between insecure attachment in the first two years of life and emotional or behavioral problems in middle childhood (e.g., Feiring
and Lewis 1996). In a sample drawn from a high social risk population, children who showed early insecure relations were also consistently observed to be more prone to moodiness, poor peer relations, and symptoms of depression and aggression, right up to pre-adolescence (Weinfield et al. 1999). Two recent follow-ups of this sample showed powerful prediction to psychopathology in adolescence. Anxiety disorder in adolescence was most likely to be associated with ambivalent attachment in infancy (Warren et al. 1997). Overall, avoidant infants showed the highest rate of disorders (70 percent) and resistant infants were no more likely to have diagnosable psychiatric disorder than secure ones. In the same sample, dissociative symptoms at 17 and 19 years were predictable from avoidant classification and disorganized behavior scores (Ogawa et al. 1997).

Lyons-Ruth and her colleagues followed up 64 high-risk infants (Lyons-Ruth 1995, Lyons-Ruth et al. 1989). Seventy-one percent of hostile pre-schoolers had been classified as disorganized at 18 months compared to 12 percent of those originally classified as secure. More than half of children classified as disorganized in infancy and who had a mother with psychosocial problems were seen as hostile in kindergarten, compared with less than 5 percent of those with neither of these risk factors. Similar risk was found in relation to teacher-rated externalizing problems at age 7 in the low IQ subgroup disorganized in infancy. Internalizing symptoms, by contrast, were predicted by avoidant, not disorganized infant classification. Shaw and colleagues (Shaw et al. 1997, Shaw and Vondra 1995), studying a high-risk sample in Pittsburgh, found that attachment insecurity modestly predicted pre-school behavior problems at age 3, and robustly and uniquely predicted problems at age 5. Sixty percent of disorganized children showed clinically elevated aggression compared to around 30 percent of the two other insecure classifications and 17 percent of securely classified children. Children with both disorganized attachment and parental rating of difficult temperament were in the 99th percentile for aggression. Children with just one of these two risk factors were within the normal range. Both these studies suggest that disorganized attachment may be a vulnerability factor for later psychological disturbance in combination with other risk factors. In addition, there is a rich body of literature, reviewed by Greenberg (1999), that shows strong associations between concurrent measurement of attachment and psychopathology. However, cross-sectional investiga-

ations always leave open the possibility that nonsecure attachment is but a further indication of the child’s psychological disturbance.

Attachment and Adult Psychopathology

There is general agreement that attachment security can serve as a protective factor against psychopathology, and that it is associated with wide range of healthier personality variables such as lower anxiety (Collins and Read 1990), less hostility, and greater ego resilience (Kobak and Scérey 1988), and greater ability to regulate affect through interpersonal relatedness (Simpson et al. 1992, Vaillant 1992). Insecure attachment appears to be a risk factor and is associated with such characteristics as a greater degree of depression (Armsden and Greenberg 1987a), anxiety, hostility and psychosomatic illness (Hazan and Shaver 1990) and less ego resilience (Kobak and Scérey 1988).

Very few studies have linked attachment patterns and adult psychopathology. These have been subjected to detailed scrutiny by Dozier (Dozier et al. 1999). Aggregating across five studies, it seems that psychiatric disorders are nearly always associated with nonautonomous, insecure states of mind and that unresolved status is highly overrepresented in this group. In one longitudinal study (Allen et al. 1996), derogation and lack of resolution of abuse predicted criminal behavior and hard drug use in a high-risk sample. Although it has been suggested that a dismissing state of mind might be associated with antisocial personality disorder, eating disorders, substance abuse, and dependence, and preoccupied states of mind would be linked with disorders that involve absorption in one’s own feelings such as depression, anxiety, and borderline personality disorder, the available studies do not support this kind of simplistic model (e.g., Fonagy et al. 1996). Eagle (1999) cites evidence that while preoccupied/enmeshed individuals experience more psychological distress, avoidantly attached individuals show a greater incidence of somatic symptoms and illnesses.

There are several problems with these kinds of studies. First, the co-morbidity of Axis I disorders, particularly in relatively severe clinical groups where co-morbidity is extremely high, preclude any simple links between attachment classification and a unique form of psychiatric morbidity. Second, the coding systems for establishing attachment classes are not truly independent of clinical conditions and some con-
sistent associations might be simple cases of item overlap. Third, the adult attachment coding systems were not developed with clinical groups in mind, and therefore it is not clear if or how the severity of psychiatric morbidity per se might distort the assignment of an attachment classification. Currently we are lacking the validity studies necessary to establish the usefulness of currently available attachment measures for categorization of psychopathology.

More recently a line of work linking attachment classification and treatment outcome has emerged, where attachment classification is used as a predictor within specific diagnostic groups. Dismissing adults appear to be relatively resistant to treatment and within the context of therapy. Arguably, they deny their need for help in order to protect themselves from the possibility that the caregiver will be eventually unavailable. They might be rejecting of treatment, rarely asking for help (Dozier 1990). Preoccupied adults have a more general inability to collaborate with and take in the therapist's words and support, but then become dependent and call therapists between hours (Dozier et al. 1991). A synthetic view of this literature has been suggested by Sidney Blatt and colleagues (Blatt and Blass 1996, Blatt et al. 1995, Blatt et al. 1998). Blatt and his coworkers have proposed a dichotomy that overlaps in a highly informative way with the Bowlby–Ainsworth–Main categorization. They envision a dialectic between two developmental pressures that defines the evolving representations of self—other relationships: the needs for a sense of relatedness and a sense of autonomous identity (Blatt and Blass 1996). These developmental needs are thought to be in synergistic interaction throughout ontogeny and a lack of balance implies psychopathology. Anacritic pathology (an exaggerated need for relatedness—preoccupation/entanglement) is present in dependent, histrionic, or borderline personality disorder. Introspective pathology (an exaggerated quest for identity—dismissing or avoidant pathology) is thought to characterize schizoid, schizotypal, narcissistic, antisocial, or avoidant individuals. John Gunderson (1996) writing about BPD from

an attachment theory perspective, for example, identifies precisely the anacritic pathology of these patients when pointing to their total incapacity to tolerate aloneness.

The person-centered approach of the attachment theory perspective thus has the potential greatly to deepen our understanding of psychiatric disturbance, as categorized by DSM-IV, by adding a dynamic developmental standpoint. For example, Blatt and colleagues, using the relatedness–autonomy dialectic, can differentiate two types of depression: a dependent (anacritic) and a self-critical (introjective) type (Blatt and Bers 1993). Thus, depression in individuals with borderline personality disorder is characterized by emptiness, loneliness, desperation vis-à-vis attachment figures, and labile, diffuse affectivity. For non-borderline individuals with major depression, these aspects correlate negatively with the severity of depression, whereas for borderline individuals, the same symptoms correlate almost perfectly with severity within the limits of the reliability of measurement (Rogers et al. 1995, Westen et al. 1992).

Response to treatment is powerfully predicted by this distinction. For example, in the NIMH trial of psychotherapy for depression (Blatt et al. 1998, Elkin 1994), perfectionist individuals (introjective type) were unlikely to improve after the first few sessions, whereas patients with a high need for approval (anacritic types) improved significantly in the second half of the treatment (Blatt et al. 1995). In general, it is possible that dismissing patients will tend to do poorly in most short-term treatments (Horowitz et al. 1996). Blatt argues that this may be the consequence of the anticipation of the separation in individuals for whom identity is a clear organizing issue. By contrast, dismissing individuals might do better in long-term psychoanalytic psychotherapy where their self scrutiny is adequately supported, their guilt does not become overwhelming and (unlike the anacritic, preoccupied types) they do not become so entangled in their therapeutic relationship that they can no longer derive benefit from this (Blatt and Ford 1994, Fonagy et al. 1996). The value of the psychoanalytic approach is highlighted by the fact that the majority of studies of depression neither explores nor differentiates between these groups, although the experience of psychological distress in the two groups is critically different. The person-centered attachment theory approach that takes the representational world as its focus can potentially be very helpful in refining our predictions concerning psychological disturbance.
THE DISORGANIZATION OF ATTACHMENT

The most promising area of attachment research from a psychoanalytic point of view is undoubtedly the study of disorganized/disoriented attachment behavior. As was described above, disorganized/disoriented attachment is marked in the strange situation by displays of contradictory behavior patterns sequentially or simultaneously, undirected, incomplete, or interrupted movements, stereotypes, anomalous postures, freezing, apprehension regarding the parent or disoriented wanderings (Main and Solomon 1986, 1990). Main and Hesse’s (1990) now classical contribution linked disorganized attachment behavior to frightened or frightening caregiving: infants who could not find a solution to the paradox of the figures who they wished to approach for comfort in times of distress (Main 1995). In the intervening decade, a great deal has been learned about disorganized attachment. A meta-analysis of studies of disorganized attachment (Van Ijzendoorn et al., in press) estimated its prevalence at 14 percent in middle-income samples and 24 percent in low-income groups. The stability of the classification of disorganized attachment is reasonable (r = .36) (Van Ijzendoorn et al., in press), with some indication that lack of stability may be accounted for by increases in the number of disorganized infants between 12 and 18 months (Barnett et al. 1999, Lyons-Ruth 1991, Vondra et al. 1999).

There is no substantial evidence to suggest that temperamental or constitutional variables can account for attachment disorganization (Van Ijzendoorn et al., in press), although an isolated study found that newborn behavioral organization measured by the Brazelton neonatal behavioral assessment scale predicted disorganization at one year. Disorganization has been shown to be associated with a pattern of mild mental lag, where mental scores lag behind the Bayley Motor scores (Lyons-Ruth et al. 1991).

There is evidence that infants with disorganized attachment behaviors manifest significantly higher salivary cortisol levels during the strange situation (Hertsgaard et al. 1995, Spangler and Grossman 1993). Cortisol is a stress hormone that in excess is toxic and can cause damage to the hypothalamus. Infants late adopted from East European orphanages (i.e., those who stayed eight months or more in the orphanage) are, not surprisingly, predominantly disorganized in their attachment at age 4 (Chisolm 1998, Marcovitch et al. 1997). Normal diurnal variation of cortisol secretion appears to be altered among Romanian orphans with peak values occurring in late morning or early afternoon rather than on rising as one would normally expect (Carlson et al. 1995). Cortisol elevation appears associated in this group with developmental scores on the Bayley scale (Carlson and Earls 1997). Blunted cortisol responses have been shown in other maltreated samples (e.g., Hart et al. 1995). There is good evidence from animal models that repeated exposure to high levels of circulating steroids such as cortisol results in destruction of actual brain material to which the organism adjusts by becoming hyporesponsive to stress and decreasing cortisol release (Sapolsky 1996, Yehuda et al. 1998). The general pattern of results seems consistent with a model where early overactivity of the ANS leads the organism to respond to subsequent stressors in irregular manner, normal, hypo-, or hyper-reactivity (Figueroa and Silk 1997).

The Causes and Course of Disorganized Attachment

Quite a lot is known about the putative causal associates of disorganized attachment. The prevalence of attachment disorganization is strongly associated with the presence of family risk factors such as maltreatment, major depressive or bipolar disorder, and alcohol or other substance misuse. For example, 82 percent of maltreated infants in a low income sample are classified as disorganized, compared with 18 percent of a matched control group (Carlsson et al. 1989). In a meta-analysis, depressive symptoms in the mother and infant attachment disorganization only showed a marginally significant relationship (Van Ijzendoorn et al., in press). This null finding highlights a weakness of meta-analytic aggregation. The majority of studies exploring the effect of maternal depression fail to examine the critical variable, that is, the extent to which the infant is actually exposed to a severely depressed caregiver over a prolonged period. In individual studies where chronic exposure to severe depression was independently demonstrated, the association with attachment disorganization appears to be strong (Lyons-Ruth et al. 1990, Teti et al. 1995).

Nine studies of 548 infant–mother pairs found an association between disorganization of attachment in the infant and evidence of unresolved attitude to episodes of loss or abuse in the parent's Adult Attachment Interview (van Ijzendoorn 1995). Three studies have helped to
clarify this superficially mysterious association between seemingly easily dismissable slips in the mother's narrative and the infant's bizarre behavior in the strange situation. Jacobovitz and colleagues reported a strong association between unresolved status on the AAI before the child was born and observations of frightened or frightening behavior towards a firstborn child at 8 months (Jacobovitz et al. 1997). These behaviors included intrusiveness, baring teeth, entering apparently trance-like states, and so on. If the loss around which there was lack of resolution happened before the mother was aged 17, maternal frightened or frightening behavior was more evident. Interestingly, these unresolved mothers did not differ from the rest of the sample in terms of other measures of parenting such as sensitivity or warmth.

In a similar study, Schuengel and colleagues found that mothers classified as unresolved and insecure displayed significantly more frightened or frightening behavior than those classified unresolved secure (Schuengel et al. 1999a). Surprisingly, however, secure mothers who were not classified unresolved appeared to display even more frightened or frightening behavior. Maternal frightened or frightening behavior predicted infant attachment disorganization, but the strongest predictor was maternal dissociated behavior in interactions with the child. In an independent investigation Lyons-Ruth and colleagues also found that frightened and frightening behavior predicted infant disorganization (Lyons-Ruth et al. 1999), particularly when extreme parental misinterpretation of the specific content of an infant's attachment related communication and competing caregiving strategies that both elicited and rejected infant attachment were also rated. Frightened and frightening and disrupted affective communication behaviors were character-

istic only of mothers of disorganized insecure infants. Mothers of disorganized secure infants in this study exhibited a fearful inhibited pattern of behavior. There was less hostility in the interaction even when communication was disrupted. In sum, maternal frightened or frightening behaviors appeared to be related to infant disorganized attachment via parental unresolved states of mind. While mothers of disorganized infants appear no less sensitive than do other mothers (Van Ijzendoorn et al., in press), they have been repeatedly identified as deviant in more specific assessments of interactions. For example, disorganized insecure 20-month-olds tended to initiate aggressive conflicts with their mothers, refusing their mother's social initiatives (Hann et al. 1991).

There is general agreement based on both cross-sectional and longitudinal investigations that disorganized infant attachment shifts into controlling attachment behavior in middle childhood. The meta-analysis reports an association of .55 (Van Ijzendoorn et al., in press), although this is based on only two longitudinal studies. George and Solomon described the parenting associated with such controlling behavior on the part of the child as characterized by a sense of helplessness and even fear of the child (George and Solomon 1996). By contrast, the child's model of relationships as derived from doll play appears to be characterized by themes of catastrophes, violent fantasies, helplessness, or total inhibition (Solomon et al. 1995). It is interesting to note that in some studies these children emerge as possessing fewer concrete and formal operational skills (Jacobsen et al. 1994, Jacobsen et al. 1997, Moss et al. 1998, Moss and St. Laurent 1999). In peer relationships, observational studies suggest that disorganized children are less competent in play quality and conflict resolution (Wartman et al. 1994). Jacobovitz and Hazen (1999), observing peer interaction, found that disorganized 4- to 5-year-olds showed quite different models of interaction with two peers. They proposed that this could be explained by the unintegrated internal working models of relationships that such children work with.

Disorganized Attachment and Childhood Aggression

We have considered above the relationship of disorganized attachment history and clinical problems in general. Here we shall restrict our review to three specific clinical problems that have been empirically linked to disorganized attachment: childhood aggression, disor-

It appears that the sequel to disorganized attachment in early life may be a quite subtle and complex form of relational disturbance that at times includes unpredictable and unwarranted aggression but is perhaps better captured as a general sense of interpersonal incompetence on the part of the child. Since Bowlby’s original work on juvenile delinquents (Bowlby 1944), there has been considerable speculation concerning the role of attachment in disturbances of conduct (Atkinson and Zucker 1997, Fonagy et al. 1997, Greenberg 1999, Shaw et al. 1996). The currently popular four- or five-way categorization of attachment patterns is too general to permit the development of a model that may generate specific treatment approaches (Rutter and O’Connor 1999). Insecure attachment may simply indicate inadequacies of parenting of the kind often noted in this group. Alternatively, it may predispose children to transactional experiences that more immediately generate conduct problems (Shaw et al. 1996). Most probably, attachment processes are intimately involved in the development of specific psychological functions or mechanisms that are key in the organization of appropriate behavior. Thus, attachment difficulties may specifically create problems in affect regulation and social cognitive skills, which are known to be dysfunctional in groups with conduct problems.

Importantly, these mental processing deficiencies and biases are present early on and have been shown to predict the course and outcome of preschool disturbance of conduct (e.g., Weiss et al. 1992). Not surprisingly these children have considerable difficulties in the playground and peer rejection can quickly ensue (Kupersmidt et al. 1990). Rejected children tend to forge alliances with other children who are similar to them and with whom they share an interest in deviant ac-

tivities (Dishion et al. 1995). Behaviors that increase the likelihood of peer rejection (e.g., reactive impulsive behaviors) add significantly to the prediction of later delinquency, beyond the prediction based on aggressive behavior alone (Loeber 1990). Social cognition appears to be strongly associated with family background, independent of the contributions of language and age (Cutting and Dunn 1999). All these facts are at least consistent with the view that disorganized attachment represents the point of origin of one path to conduct disorder.

Not all aggressive children follow the same pathway toward impaired peer relations and social maladaptation. Only half of all children who are physically aggressive in elementary school are rejected by their peers (Bierman et al. 1993, Coie et al. 1996). Those who are aggressive and rejected appear to be at somewhat greater risk (Bierman and Wargo 1995, Coie et al. 1996). Accepted aggressive children use their aggression strategically to attain social goals (Coie and Lenox 1994). Both rejected aggressive and accepted aggressive children show proactive aggressive behavior, but rejected aggressive boys are more likely to show reactive, poorly modulated forms of aggressive behavior (tantrums, outbursts, whining) (Bierman et al. 1993). Pope and Bierman (1999) suggest that rejected aggression may be a marker of social-emotional deficit that affects the process of social adaptation over time. Behaviors manifested by aggressive rejected children (immaturity, angry reactivity, negative affectivity, low frustration tolerance, irritability, social incompetence, frequent expression of personal distress, and inattention) may indicate deficiencies in the capacity to regulate negative affect in the context of interpersonal relations. This is a regulatory capacity that might have been undermined by the early disorganization of attachment (Hofer 1995, Sroufe 1996).

Aggression in these children may be an indication of an incapacity to respond flexibly and strategically in emotionally arousing situations (Fox 1994, Thompson 1994). Emotion dysregulation forces the child to use narrow and rigid response hierarchies (Cole et al. 1994) that lead to impairments in interpersonal relations. Social difficulties that arise directly out of a failure to regulate negative emotion include difficulties in performing regulatory tasks such as shifting attention from disturbing stimuli, suppressing impulsive reactions, engaging in planning and problem-focused coping, engaging comprehensive and unbiased interpretation and evaluation of social information, exploring the
Disorganized Attachment and Dissociation

Individuals with unresolved trauma or loss experiences as measured by the AAI are demonstrably more prone to dissociative experiences (Hesse and Main 1999). Carlson's (1998) study identified a direct association between dissociative symptoms at 17 and disorganized attachment at 12 and 18 months. An insightful suggestion by Liotti linked dissociative symptoms to parental experience of loss. Basing his prediction on the link between lack of resolution of mourning and disorganized attachment, Liotti (1995) found that individuals with dissociative symptoms were more likely to have parents who suffered a major loss immediately prior to their birth or during the first years of their life. The association was confirmed with a normative sample by Hesse and van IJzendoorn using a self report scale measuring the propensity for dissociation (Hesse and Main, in press). Not all individuals with attachment histories of disorganization are likely to manifest dissociative symptoms. In the most comprehensive follow-up of the Minnesota sample, scores on the dissociative experiences scale were only shown to be elevated for those individuals with disorganized attachment histories who had suffered major trauma, such as death of an attachment figure or extended separation from the mother before 54 months (Ogawa et al. 1997).

Disorganized Attachment and Relationship Violence

Disorganized attachment in adulthood is generally linked with unresolved states of mind on the AAI (U), preoccupied overwhelming by trauma (E3) or cannot be classified categories (CC). These categories occur more commonly in groups with severe trauma-related psychopathology (Allen et al. 1996, Fonagy et al. 1996, Patrick et al. 1994, Stalker and Davies 1995) and those with criminal convictions (Levinson and Fonagy, submitted, van IJzendoorn et al., in press). They are also more common in individuals currently involved in intimate relational violence (Owen and Cox 1997, West and George, in press). Further, mothers who report high levels of partner violence are likely to have infants with disorganized attachment (Holtzworth-Munroe et al. 1997, Lyons-Ruth and Block 1996). In general, evidence strongly links the disorganization of attachment relationships with severe relationship
pathologies, normally described as "borderline personality organization" in psychoanalytic writings (e.g., Kernberg 1987).

PATHWAYS FROM INFANCY TO ADULT PATHOLOGY

Attachment theory is of interest to psychoanalysts principally because of the model it provides for the integration of early childhood experience with later development, particularly the emergence of psychopathology. As this brief review has demonstrated, there is considerable, although not overwhelming, evidence for the continuity of interpersonal experience from infancy to later development. There are a number of research-based models to account for observed continuities, which it is interesting to consider side-by-side with the psychoanalytic models (see below). The simplest model, originally posited by Lamb (Lamb 1987, Lamb et al. 1985) and seriously considered by Belsky (1999a) and Thompson (1999), is not in terms of continuity mental structures but merely social environments, more specifically that of the quality of care. The most parsimonious account of the effect of early experience is that correlations between early experience of a pattern of caregiving that is sometimes neglectful, sometimes overtly hostile, and later development are indicative of the continuity of this pattern rather than its particularly strong impact.

There have been numerous attempts at designing studies that might challenge this simplistic account (e.g., Chisolm 1998, Fisher et al. 1997, Hodges and Tizard 1989, Marcovitch et al. 1997). O'Connor and Kreppner (O'Connor et al. 2000) report an adoption study that asked a specific question about the long-term impact of early privation in four contexts: attachment, peer relationships, attention regulation, and cognition. The length of early privation varied between 6, 24, and 42 months but was not correlated with subsequent social experience. Duration of deprivation was strongly linked to attachment disturbance, peer disturbance, inattention and hyperactivity, and cognitive ability. Attachment disturbance showed no signs of improving at age 6 relative to age 4, although peer problems decreased somewhat.

Winnicott (1958a) and Roy (2000) contrasted 19 children from group homes with the same number in foster care (controls). The two groups were unusually well matched. There was a marked difference in observed inattentiveness or hyperactivity between the in-care groups and the controls. Hyperactivity was also far more marked on teacher ratings in children raised in group homes than those raised in foster homes. In general, the results suggest that the different pattern of childrearing in institutional and foster families is the key cause of the elevated levels of hyperactivity and inattention rather than the child's biological background.

Marvin and Britner (1999) looked at attachment classifications in the UK Romanian adoptees at 4 and 6 years. The number of secure children was, overall, less than would be expected by chance. Security of attachment was highest in the group who spent the shortest period in the orphanage, but the percentage of disorganized classifications was particularly striking. It was far above what would be expected in a UK population of comparable IQ and social class. Once again, there was little evidence of recovery with development. These and other similar studies confirm that, at least for relatively extreme levels of deprivation, early experience does not require continuity to have its impact.

A second mechanism that explains continuity involves the representation of relationships. In this framework sensitive, responsive parenting during infancy may be assumed to generate a working model of relationships in which positive expectations regarding intimacy and care from others are indelibly encoded, and this cognitive affective structure goes on to selectively affect perception, cognition, and motivation (Bretherton and Munholland 1999). Because of the reciprocal links between working models of attachment figures and those of the self (see above) it is generally believed that secure attachments will lead to a generalized sense of competence and self-esteem. Expectations of lack of understanding and care might evoke reciprocal parental behavior of increased hostility and negativity though the child's provocativeness or other means (Richards and Walters 1991, Shaw et al. 1997). Thus insecure attachment may come to play a causal role in later maladaptation through the gradual crystallization in transactional parent–child interactions of working models characterized by mistrust, anger, anxiety, and fear (Main 1995). The growing literature of pervasive attributional biases that Dodge and colleagues have repeatedly demonstrated in clinical groups (Coe and Dodge 1998, Crick and Dodge 1994, Matthys et al. 1999) is of course consistent with this view with some direct support (Cassidy et al. 1996).
Attachment may mark changes in neural organizations that are involved in later psychological disturbance. For example, it is possible that emotion regulation established in early childhood may alter fear conditioning processes in the amygdala (LeDoux 1995) or connections between the prefrontal cortex and the limbic system (Schore 1997). There is evidence for elevated cortisol secretion and delayed return to baseline in those with insecure disorganized attachment (Spangler and Schieche 1998). Systematically identifying the potential biological links that underpin attachment will be the task of the current decade.

A further potential pathway for mediation may be rooted in the isomorphism of behavioral disturbance and disturbed attachment behaviors. Greenberg (1999) suggests that behaviors labeled as disruptive may also be viewed as indications of attachment strategies aimed to regulate a relationship with the caregiver. For example, oppositional behavior may serve the function of regulating the caregiver's proximity to and monitoring of the child. Similar links may exist between the controlling behavior of the disorganized attachment pattern (Main and Hesse 1990) and the ambivalent pattern of anxious resistance (Cassidy 1995).

The most likely mediation of insecure or disorganized attachment to later maladaptive or pathological outcome is through a combination of risk factors, none of which singly carry clinical implications but which together may be associated with a substantial elevation of risk. Insecure attachment may combine with family social adversity, ineffective parenting skills, and atypical child characteristics to generate significant risk of behavioral disorder. This is the dominant risk model in modern developmental psychopathology (e.g., Garbarino 1995, Garmezy and Masten 1994, Rutter 1999).

It is misleading to attempt to trace commonality and differences between Freud's thinking and current attachment theory. Freud's theory does not represent a homogenous corpus (Sandler et al. 1997). Traditionally, his contribution is divided into four phases. The first is the pre-psychoanalytic phase, covering a series of papers, mostly on neurological topics; second is the affect-trauma model, during which Freud put forward the view that the etiology of neurosis rested in the actual events of childhood development (Freud and Breuer 1895); third is the topographical model, which emphasized fantasy driven by biological drive states (Freud 1900, 1905); the fourth phase included the dual instinct theory (Freud 1920) and the structural model of the mind (Freud 1923). Each of these phases has distinct points of correspondence with and divergence from attachment theory, and a skillful Freud scholar could readily construct a picture in which the originator of psychoanalysis is seen as a either a friend or a foe of attachment theory.