

The Capacity for Understanding Mental States: The Reflective Self in Parent and Child and Its Significance for Security of Attachment

PETER FONAGY

*The Anna Freud Centre
and University College London*

MIRIAM STEELE

The Anna Freud Centre

HOWARD STEELE

University College London

GEORGE S. MORAN

The Anna Freud Centre

ANNA C. HIGGITT

St. Mary's Hospital London

ABSTRACT: Epidemiologists and psychoanalysts have been equally concerned about the intergenerational concordance of disturbed patterns of attachment. Mary Main's introduction of the Adult Attachment Interview (AAI) has provided the field with an empirical tool for examining the concordance of parental and infant attachment patterns. In the context of a prospective study of the influence of parental patterns of attachment assessed before the birth of the first child upon the child's pattern of attachment to that parent at 1 year and at 18 months, the Anna Freud Centre—University College London Parent-Child Project reported a significant level of concordance between parental security and the infant's security with that parent. In the context of this study, a new measure, aiming to assess the parent's capacity for understanding mental states, was developed and is reported on in this paper. The rating of Reflective-Self Function, based upon AAI transcripts, correlated significantly with infant security classification based on Strange Situation assessments. The philosophical background and clinical importance of the measure are discussed.

RÉSUMÉ: Les épidémiologues et les psychanalystes sont tout aussi bien concernés et intéressés par la concordance intergénérationnelle de patterns d'attachement perturbés. L'introduction qu'a faite Mary Main de l'Interview d'Attachement Adulte a fourni un outil empirique pour l'examen de la concordance des

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patterns d'attachement parental et infantile. Dans le contexte d'une étude future de l'influence des patterns d'attachement parental évaluée avant la naissance du premier enfant sur le pattern d'attachement de l'enfant envers ce parent à l'âge d'un an et à dix-huit mois, le Centre Anna Freud, University College Londres, Parent-Child Project, a signalé un niveau significatif de concordance entre la sécurité parentale et la sécurité du nourrisson avec ce parent. Dans le contexte de cette étude, une nouvelle mesure, ayant pour but d'évaluer la capacité du parent à comprendre les états mentaux a été développée et fait l'objet d'un rapport dans ce travail. L'évaluation de l'"Observing Self Function," basée sur la transcription de l'Interview d'Attachement Adulte, correspondait de manière significative à la classification de la sécurité du nourrisson basée sur les évaluations de Situation Etrange. L'arrière-plan philosophique et l'importance clinique de la mesure sont discutés.

RESUMEN: Epidemiólogos y psicoanalistas se han preocupado por igual por la concordancia intergeneracional de modelos de unión afectiva alterados. La introducción de Mary Main a la Entrevista de la unión afectiva de adultos le ha dado al campo una herramienta empírica para examinar la concordancia de modelos de unión afectiva tanto del infante como de los padres. En el contexto de un posible estudio de la influencia de los modelos de unión afectiva de los padres evaluados antes del nacimiento del primer niño y hasta el modelo de la unión afectiva del niño hacia el padre o a la madre a la edad de 18 meses, el Centro Anna Freud, el Colegio Universitario de Londres (University College London), el proyecto padre/madre-hijo reportó un significativo nivel de concordancia entre la seguridad paterno-maternal y la seguridad del infante con el padre o la madre. En el contexto de este estudio, una nueva medida que ayuda a evaluar la capacidad del padre o la madre para entender los estados mentales fue desarrollada y sobre ella se reporta en este estudio. La apreciación de la Función de observación propia, basada en la Entrevista de la unión afectiva de adultos, está significativamente correlacionada con la clasificación de seguridad del infante que se basa en las evaluaciones de situaciones extrañas. La importancia del pasado filosófico y clínico de la medida se discute también.

抄録:疫学者と精神分析医は、障害のある愛着パターンが世代を越えて一致することに、等しく関心を持ち続けてきた。Mary MainによるAdult Attachment Interviewの導入は、親と乳児の愛着パターンの一致度を調べる経験的な方法を与え、研究への道を開いてくれた。第1子が生まれる前に評価した親の愛着パターンが、子どもが1才および18ヶ月になった時点でのその親への愛着パターンに及ぼす影響という、プロスペクティブな研究とのつながりの中で、the Anna Freud Center, University London, Parent-Child Projectは、親の安心感とその親のもとでの乳児の安心感との間に、統計的に有意な一致を報告した。この研究とのつながりにおいて、精神現症を理解する親の能力の評価を目的とした、新しい評価法を開発し、ここに報告した。Adult Attachment InterviewをもとにしたObserving Self Function のスコアは、Strange Situation 評価に基づく乳児の安心感分類と有意に相関した。この評価法の哲学的背景と臨床的重要性について論じた。

In recent years, we have been engaged in work in clinical contexts and experimental studies on the nature of the organization of the self (Fonagy, 1989; Fonagy & Higgitt, 1990; Fonagy & Moran, 1990, 1991; Higgitt & Fonagy, in press; Kennedy & Moran, 1991; Steele, 1990). We distinguish a *prereflective "self,"* which is the immediate—that is to say unmediated—experiencer of life and the *reflective self*, the internal observer of mental life, the dialectical complement of the experiencing self. The reflective self knows that the self feels, perceives, reacts, and so on. The reflective self reflects upon mental experience, conscious or unconscious. It registers psychic life and constructs representations of feelings and thoughts, desires and beliefs. Most important, it is aware that its representations of its behavior and actions are shaped by the content of others' mentation. It constructs an image of the self as observed and of the other as observing and in both cases includes a capacity to reflect upon such observations. For example, the representation of oneself as feeling angry or unloved is distinct from simply feeling angry or unloveable.

Those working with children and even with certain adults are familiar with patients who show an extraordinarily diminished capacity to reflect upon feelings they

are so obviously experiencing. As Christopher Bollas (1990) pointed out recently, this distinction is also apparent in the dream, wherein the self that experiences (the self as pictured in the dream) and the self that takes notice of the phenomenal self as it experiences (the dreamer) achieve separate and distinct mental representation.

In this paper we will illustrate that the evolution of the psychological capacities underlying the internal observation of mental activities, which we will call the "reflective-self function," represents an essential step in emotional development during early childhood. The evolution and awareness of mental processes in the self and other are intrinsically linked. Cognitive aspects of this developmental process have been extensively explored by developmentalists over the last decade, largely under the headings of *metacognition* and *theory of mind* (e.g., Baron-Cohen, Leslie, & Frith, 1985; Flavell, 1976; Harris, 1989; Pillow, 1988). However, the dynamic implications of the growth of the child's understanding of the mental world of the other have yet to be spelled out.

The essential assumptions underlying this point of view are familiar to students of the philosophy of mind (e.g., Dennett, 1978, 1983) as well as psychoanalytic metapsychology (A. Freud, 1965, 1970). One of the capacities that define the human mind is the ability to take account of one's own and others' mental states and, thus, to understand why people behave in specific ways. Our understanding of the world around us is intrinsically tied to our everyday understanding of the human mind. The world we live in can only make sense if we invoke constructs such as wishes, beliefs, regrets, values, or purposes to understand the mental world of the other as well as the mental world of the self. This is the function of the internal observer.

The mind is interpersonal. The interdependence of self-understanding and the understanding of the other is proposed by philosophers of the mind, in the tradition of Wittgenstein (1953, 1969) and Davidson (1983). Davidson proposes that we learn about mental attitudes by taking the standpoint of the third person, the observer. He concludes that only someone who can be said to know, at least to some extent, the mind of another can be said to be able to think, himself. Our capacity to conceive of our subjective state is thus the consequence of our observations of the mental activity of others and our awareness of being observed. The mind, then, or at least the reflective self, is inherently interpersonal; and it evolves in the context of the infant-caregiver relationship.

The development of the reflective self is, thus, intrinsically tied to the evolution of social understanding. It is through an appreciation of the reasons behind the actions of his caretakers and siblings that the child can come to acquire a representation of his own actions as motivated by mental states, desires, and wishes. When do children begin to conceive of human action in terms of mental states, beliefs, and desires? It seems that an understanding of the mental world of intentionality is more complex than an understanding of the world of physical causality (Bretherton, McNew, & Beeghley-Smith, 1981; Wellman, 1985).

Observational and recent experimental studies of human infants converge in confirming the social orientation of the human infant. Winnicott's (1956) descriptions show the infant as part of a complex social world from its earliest months. Trevarthen (1977) has demonstrated that from as early as 2 months infants are capable of distinguishing a voice which is directed at them from one talking to someone else.

At 7 months, infants are already sensitive to the direction of gaze of another person, demonstrating their motivation to share the experience of those around them. Soon after, in situations of uncertainty they monitor the emotional expressions of their mothers, and their own behavior will be appropriately guided by those expressions (Klennert, Campos, Sorce, Emde, & Svejda, 1983). For example, Feiring, Lewis, and Starr (1984) demonstrated that by 9 months babies will interact more positively with a stranger if they have previously seen their mothers interact positively rather than neutrally with him or her. Stern's group (Stern, 1985) demonstrated that by 9 months infants are capable of accurately perceiving the incongruity between their own affective state and that which is reflected by someone else's face.

Observations of this kind amplify how the infant has the capacity to make use of information deriving from mental states, thus showing a rudimentary capacity to deal with the world of feelings and ideas. Appropriate response and clear sensitivity to the caregiver's mental state, however, do not imply a capacity to reflect upon this awareness. It is likely that the first year of infants' social existence is dominated by the physical (as opposed to mental) reflection. The object's actions are not yet conceived of in ways qualitatively distinct from that of the world of physical causality with which the infant is, by now, perfectly familiar. An intuitive awareness of mental states is evident in toddlers. Early in the second year interest in the *feelings* of others starts to manifest, at first nonverbally and increasingly in a verbal way. Two-year-olds are frequently curious about the causes of pain, distress, anger, or pleasure in those around them. In the second year, their understanding remains intuitive, available as a resource in their endeavor to influence other members of the family but it is not yet knowledge in the sense of permitting reflection (Dunn, 1988). Observers of children have repeatedly noted empathic sensing of the mood of another and sympathetic identification with another's distress in the 2-year-old child. Anna Freud and Dorothy Burlingham's (1944) observations clearly document the sensitive behavior manifested by toddlers toward one another.

Sam (20 months) was playing peacefully . . . when suddenly Larry (19 months) took his ball away. Sam looked at his empty hands helplessly and began to cry. Edith (21 months) had watched this scene; she rushed over to Larry, bit him, brought the ball back to Sam, and stroked his hair until he was comforted. . . . (p. 573)

Children in their third year are evidently capable of understanding that other people have feelings and intentions different from their own. In the third year, children begin to talk about their own, and other people's, feelings (Bretherton et al., 1981; Dunn, Bretherton, & Munn, 1987; Kagan, 1961). The foundations for concern and caring are well established by the end of the third year (Blum, 1987). Thus, reflective capacity is part of a line of development that starts from the affective attunement of the first months, through the empathic sensing and responding to the mood of another as observed in infants of 8 months, to the understanding of others' intentions.

The ability to take into consideration the mental state of the other in the planning and structuring of actions is probably reliably acquired in the third year of life (Wimmer & Perner, 1983). A more advanced level of the reflective-self function entails the ability to think about another person's thoughts about a third person's thoughts. As far as we know, this is probably not acquired fully until the sixth year of life

(Flavell, Flavell, & Green, 1983). The developmental steps involved in the growth of the child's understanding of others' mental states is described more fully by Fonagy (1989).

A poorly established capacity to reflect upon mental functioning in oneself and others appears to be associated with serious psychological disorder, both in early life and in later years. Baron-Cohen et al. (1985), in their investigations of autistic children, found an almost total absence of understanding of mental states in others which they link to the communicative and emotional incapacities found in this group of disorders. The importance of this concept for psychoanalytic understanding of serious adult mental disorder, particularly so-called borderline pathology, is discussed in Fonagy and Higgitt (1990) and Fonagy (1991). These authors argue that many so-called primitive modes of thought characteristic of borderline level of functioning such as part-object relatedness, concrete thinking, primitive defenses, lack of self-reflective capacity, excessive projection, and many others may be linked to an incapacity to understand that others have minds. Using case study material, it has been shown that individuals with borderline personality organization are to a greater or lesser extent forced to inhibit their mental processes underlying reflective-self function because their development of adequate social understanding was impaired by adverse early experiences. To the extent that the establishment of a reflective capacity is predicated upon the contemplation of the mental state of one's primary caretaker, it is imperative that the generally prevailing disposition of that person toward the self is on the whole thoughtful and benign. Parental inhibition of mental processes that create representations of the mental world of the other may give rise to many of the characteristic features of borderline personality disorder including the commonly noted difficulty in following the associations of borderline patients, abnormalities in the use of language, the absence of the "as if" nature of the transference, their difficulty in maintaining analytic understanding as a functioning mental entity, the ability to hold an image of the object in the object's absence, and an apparent absence of concern for the object that may manifest as remarkable cruelty. Moreover, as the representation of one's own ideas and desires must form the core of a coherent and mature identity, the relinquishing of the capacity to reflect must inevitably bring with it a fear of disintegration. Its inhibition is defensive insofar as it protects the self representation from being overwhelmed by chaotic (to use Kleinian terminology), *unmetabolized* representations of psychic functioning. Fonagy and Moran (1991) explore how changes in the course of psychoanalytic treatment may be linked to the removal of inhibition over the capacity to conceive of mental processes. Here we would like to explore how this ability to observe and understand mental function in oneself and others relates to the development of attachment between child and mother in the first year of life.

THE PREREFLECTIVE SELF AND ATTACHMENT PROCESSES

The notion of "understanding of mental states" has several important implications for the psychoanalytic theory of normal development, parenting, and the vicissitudes of the infant-caretaker relationship.

With the evolution of the capacity to observe the other as psychically functioning, the internal representations of primary objects must be assumed to undergo a profound

change. Before this change occurs, the mental representation of the other—and indeed anything outside the experiential simple self—will not think, feel, desire, wish, or believe. The object will merely act, behave, or do. It will be represented as interacting with the self in a physical world of temperatures, textures, movements, visual patterns, sounds, and so on. The mother of the young infant may evidence her attunement with the baby through her actions. However, the representation of the mother in the baby's mind is limited to the pleasure in the immediate experience. The internal representation cannot include the mental states of lovingness or concern, only its manifestation: a sense of warmth and safety (Sandler, 1960).

The development of the capacity for mental representation of the psychological functioning of self and other is closely related to affect and its regulation. Attachment theory has taught us that emotions are "wired in" and arise as behavioral signals to the caregiver (Bowlby, 1969). They indicate the presence of physical distress or a psychological experience of loss. If the caregiver defends against, and thus misinterprets or ignores the infant's affects, the infant is left in a noxious state of disequilibrium from which he or she seeks alleviation. Before the ability to observe and respond to the affect as a mental event develops in the infant, the regulation of affect is left to behavioral devices (Spitz, 1965). Fraiberg (1982) had identified a number of these: (a) the looking away from or *avoidance* of the mother whose image is likely to lead to the activation of painful mental representations; (b) the *behavioral reversal* of aggression and its conversion into acts of self-injury such as hair-pulling or head-banging; (c) *immobilization* such as freezing; (d) *fighting* the mother, which quickly gives way to disintegrative states and tantrums.

The need on the part of infants to call upon these behaviors in their interactions with the caregiver are indications of the poor quality (insecurity) of the bond between them. Laboratory assessments of the quality of attachment are, we believe, based upon this developmental process. Ainsworth's (Ainsworth, Blehar, Waters, & Wall, 1978) laboratory technique, referred to in the literature as the "Strange Situation," remains the most widely used systematic technique for the evaluation of the quality of the infant's attachment to the caregiver. In this technique, the infant is presented with an accumulation of anxiety-provoking circumstances which elicit behaviors that would normally cause the child to seek comfort from his or her mother. The distressing features of the situation include the unfamiliarity of the room, introduction to a stranger, and two 3-minute separations from the parent. These features serve to heighten the infant's arousal and provoke an acute call for comfort and reassurance.

Differences between mother-infant dyads can be seen after the two brief separations when the child and mother are reunited. Generally, the children react in one of four ways. (1) Approximately half of the infants greet their mother and seek proximity and/or contact with her before returning to exploratory play. These children are classified as *securely* attached (B). (2) Roughly a quarter of the infants appear to *avoid* proximity with the mother. They do not seek contact with her and such interactions as do occur are distant or they are a mixture of approach and avoidance (A). (3) A third group, roughly 12%, approach their mothers but display signs of anger (*fighting*) or passivity (*immobilization*) (C). (4) A small group of infants show a fourth pattern of response: one of confusion and *disorganization* (D).

The importance of the quality of a child's attachment lies in its powerful influence upon the child's evolving adaptation to the environment. Its pervasive influence upon subsequent social, cognitive, and emotional development has been intensively investigated by developmentalists. Longitudinal studies have shown that attachment in infancy exerts a major influence, for good or ill, on social adaptation, affect regulation, and cognitive resourcefulness, and may result in later psychological disturbance.

Against this background the reunion episodes in the Strange Situation, as outlined above, provide a basis for inferring the nature of the child's internalized view of his or her relationship to his or her mother, specifically, whether or not he or she can successfully (i.e., nondefensively) rely upon her to help alleviate his distress, as the securely attached child convincingly demonstrates. Where the child relies on *defensive* strategies for mediating distress, the infant is likely to appear either superficially undistressed (avoidant) or inconsolable (resistant) upon reunion with mother.

The Strange Situation paradigm has been designed to focus specifically upon the infant's relationship with a caregiver. The insecure infant responds defensively by manifesting one or more of the behavioral strategies noted by Fraiberg (1982). Avoidant classification is associated mostly with strategies of avoidance, and the resistant classification with limited fighting and immobilization. All infants make some use of defensive behavioral strategies, but those rated as insecure in the Strange Situation seem to have come habitually to rely on the defensive behaviors of avoidance or resistance in order to relieve distress.

THE INTERNAL OBSERVER AND THE ROLE OF CAREGIVER

The reflective self plays a central role in parenting. The infant is as helpless mentally as physically. The caregiver needs to have the capacity to contain the infant's overwhelming affects, anticipate his or her psychological as well as physical needs, adapt readily to his or her perspective, and manipulate the external world to fit it. Attunement requires an awareness of the infant as a psychological entity with mental experience. It presumes a capacity on the part of the caregiver to reflect on the infant's mental experience and *re-present* it to the infant translated into the language of actions the infant can understand. The baby is, thus, provided with the illusion that the process of reflection of psychological processes was performed within its own mental boundaries. This is the necessary background to the evolution of a firmly established reflective self.

The view is consistent with the findings recently reported by Main (in press). Her pilot studies with Kaplan indicate that the reflective self is more highly developed in those 6-year-olds who were more secure with their mothers at 12 months. Secure attachment was associated with (1) spontaneous self-reflective remarks in 6-year-olds, (2) the presence of self-talk (Vygotsky, 1966) in toddlerhood, (3) an appreciation of the inherent opacity of mental states (viz. that parents cannot read a child's thoughts), and (4) spontaneous metacognitive monitoring of thinking and memory (i.e., the child commenting on his or her own ability to remember or think about his or her life history).

Why should the secure child have a better-developed reflective self? The child's reflective self develops in response to the psychic capacity of the caregiver. We differ

in our capacity to think about behavior in terms of psychological rather than physical determinants. The caregiver who manifests this capacity at its maximum will be the most likely to be able to respect the child's vulnerable emerging psychological world and reduce to a minimum the occasions on which the child needs to make recourse to the primitive defensive behavior characteristic of insecure attachment. Further, the caregiver who has a well-established capacity to see her own and others' actions in terms of mental states will be able to perceive the causes of defensive behavior in her child. The parent with more limited reflective ability may fail accurately to identify that her own behavior is the primary cause of her infant's distress, thus, inadvertently, reinforcing her infant's felt need for such behavioral strategies.

A clear prediction follows: that in any individual case a caregiver's capacity to conceive of and think about relationships in terms of mental processes and functions will determine the infant's security with that caregiver. We put this hypothesis to the test in the context of the Anna Freud Centre—University College London Parent-Child Project.

THE LONDON PARENT-CHILD PROJECT

Much recent developmental research has explored the association between the manner in which a caregiver recalls her own early experience and the security of the relationship between her and her child (Grossmann, Fremmer-Bombik, Rudolph, & Grossmann, 1989; Main & Goldwyn, in press; Main, Kaplan, & Cassidy, 1985; Morris, 1981; Ricks, 1985). The study of the repetition of relationship patterns across generations has an extensive history in the psychoanalytic literature (Bowlby, 1958, 1969, 1973, 1980; Fraiberg, Adelson, & Shapiro, 1975; Freud, 1940) and in child psychiatric research (Frommer & O'Shea, 1973; Rutter & Madge, 1976; Rutter, Quinton, & Liddle, 1983). In searching for the bases of differences between infants in their patterns of attachment, researchers have also begun to explore systematically how knowledge of the mother's childhood experience may help predict the infant-mother relationship (Belsky & Isabella, 1988; Grossmann et al., 1989; Haft & Slade, 1989; Main et al., 1985; Ricks, 1985; Spieker & Booth, 1988; Sroufe, 1988) and account for the intergenerational continuity of caregiver-child relationship patterns.

Research in this area was substantially advanced by Mary Main's development of a semistructured interview for classifying the adult's mental representation concerning relationships. The Adult Attachment Interview (Main & Goldwyn, 1990) asks a series of questions and probes designed to elicit as full a story as possible about the adult interviewee's childhood attachment experiences and his or her current perceptions of the effects of those experiences on present functioning. It is from the manner in which these experiences are conveyed, rather than the nature of the experiences themselves, that an overall classification is made of the adult's current state of mind with respect to attachment. These classifications, Dismissing (D), Preoccupied (E), or Free/Autonomous (F), bear a systematic association to the Strange Situation classifications of infant patterns of attachment: Avoidant (A), Resistant (C), and Secure (B), respectively (Main & Goldwyn, 1990; Main et al., 1985). Main and Goldwyn (1990) report a high concordance coefficient of .61 (Cohen's Kappa) between the mother and child attachment classifications. The figure is particularly impressive

because these interviews were conducted with parents and then correlated with their child's security of attachment as measured 5 years *previously* (Main et al., 1985). These important results have been confirmed by Grossmann et al. (1988) in an independent investigation using a modified method of scoring the interview protocols.

The Anna Freud Centre—University College London Project sought to discover whether mothers' and fathers' attachment classifications, derived from Adult Attachment Interviews collected before the birth of the child, would be related to the child's attachment to them at ages 12 and 18 months, respectively. The sample consisted of a predominantly middle-class group of 100 first-time mothers and 100 first-time fathers.

The audio-recorded interviews were transcribed verbatim. They were carefully rated in accordance with Main's system on a number of scales pertaining to personal history and current state of mind concerning that history; most important, the interviews were classified into one of three major groups: Autonomous-Secure, Dismissing-Detached, and Preoccupied-Entangled with respect to attachment. The individuals classified as Autonomous-Secure are open and organized in discussing their relationship history, whether positive or negative. The interview categorized as Dismissing-Detached is produced by someone who is noticeably guarded on the topic of relationships, and where answers to questions are often cursory attempts to limit discussion. The individual impressing one as Preoccupied is typically overwhelmed by the topic of relationships, embroiled in feelings of resentment, and often unable to give a coherent account of the past difficulties or traumas that preoccupy his or her attention.

We found a strong predictive association between expectant mothers' mental representations of relationships and the subsequent status of the infant-mother relationship (Fonagy, Steele, & Steele, in press). Here we will only briefly summarize our findings. Based on prenatal administration of the Adult Attachment Interview, we were able, in 75% of the cases, to predict successfully whether an infant would be coded avoidant or securely attached to mother at 1 year in the Strange Situation. Mothers who, before the birth of their child, manifested detachment in their account of their own childhood tended mostly to have infants who behaved toward them in a notably avoidant manner upon reunion in the Strange Situation. In particular, among mothers of infants manifesting avoidance upon reunion, defensive strategies (including idealization, derogation, repression, isolation, intellectualization, and splitting) were far more marked in their accounts of their childhood relationships. We also found an association between the infant's security of attachment to father at 18 months and the father's interview conducted before the birth of the child. This association was somewhat weaker but was independent of the observations of the mother-child relationship. Thus, the child's relationship with father at 18 months was not dependent on the security of the child's relationship with mother. The child's relationship with each parent seemed to be independently determined by the respective parent's internal representation of relationships to his or her parents.

The figure of 75% concordance obtained in our study is consistent with those obtained in retrospective administration (Main & Goldwyn, 1990, 75%, A/B/C; Grossmann et al., 1988, 77%, B/non-B), and concurrent administration (Ainsworth & Eichberg, in press, 80%, A/B/C/D) of these instruments. The unique value of the AAI in longitudinal attachment research is strongly supported by our study. We have

reported elsewhere (Steele, Steele, & Fonagy, 1991) that standard questionnaire measures of personality (Eysenck & Eysenck, 1975), psychopathology (Langner, 1962), vocabulary skills (Raven, Court, & Raven, 1986), self-esteem (O'Brien, 1981), or marital satisfaction (Huston & Robins, 1982) failed to predict the child's security of attachment. Although a number of these instruments shared some variance with the AAI, this was independent of the variance that the AAI shared with the Strange Situation classification.

AN OPERATIONAL DEFINITION OF THE REFLECTIVE SELF

In coding the Adult Attachment Interviews in the usual manner, it became evident to us that it was possible to explore the process underlying the intergenerational continuity of attachment patterns in terms of the internal observer. We constructed a scale to assess the parent's quality of understanding of another's intentionality. At the low end of the scale were parents who were unwilling or unable to reflect on their own intentions or those of others. At the high end were parents who showed the ability to understand the motivations of their parents and themselves as an adult and earlier as a child.

Raters were asked to review the transcripts for evidence of reflective-self function. *Low level indications* of such an ability consisted of platitudes, generalizations, or banal reflective statements, for example, "One has a try to appreciate others' points of view"; "It always seemed as if the grass was greener on the other side."

Moderate evidence was reflected in genuine psychological statements that went beyond the banal but lacked the specificity of authentic reflective-self statements. Examples included: "I try my best, but I find it difficult to know what is right"; "My parents behaved according to cultural dictates."

Strong evidence was given in statements that indicated the subject's ability to understand psychological states, including conscious and unconscious motivations, underlying their own reactions and those of others, especially their parents. For example, when asked:

Q. *How do you think your childhood experience may affect your behavior as a parent?*

a parent with a well-functioning reflective self answered:

A. My concern is that I can fluctuate between black and white, that I could be capable of doing just this with my kid like my mother did, or the other extreme of sort of smothering him with constant attention. . . .

Five of the nine points are anchored in the scale for assessing reflective-self function:

1. *No Reflective-Self Function*

There is scant evidence that the individual thinks either about the motives that guided parents' and others' behavior toward him or her or about their own actions and responses. For example:

Q. *Why did your parents behave as they did?*

A. I don't know.

3. *Poor Reflective-Self Function*

Reference is made to others' motives but this is grounded in external reasons, such as the situation they found themselves in ("There was a war on at that time, you know"), or the culture ("They had rather Victorian attitudes"). Reference to the subject's own motivations are rare. If an account is given in mental-state terms, it is blatantly inadequate.

Q. *Was there anything that you would consider a setback in your development?*

A. (sighing) Well, interesting that you should ask that . . . I mean, ever since the concept of maturity, you know, formed in my consciousness I have always been aware of being some distance from it. It's easy to rationalize, you come out with trite . . . er . . . er . . . half-baked . . . er . . . psychological interpretations.

5. *Generalized or Inaccurate Reflective-Self Functioning*

Here the interviewee indicates a general understanding of human motives but either fails to apply this to his or her own experiences or draws conclusions that are implausible or superficial. Individuals in this category may appear to be taking mental states and relationships into consideration, but the conclusions they draw are clearly self-serving and/or self-deceptive.

Q. *How would you describe your relationship to your parents during your childhood?*

A. I am the apple of my father's eye and come first and he absolutely, I mean he does absolutely idolize me . . . and I think it's amazing that my mother has never been remotely jealous of me in any way at all! . . . and she's just genuinely never held that against me at all and is fantastic!

7. *Accurate but Incomplete Reflective-Self Functioning*

Here the interviewee shows a clear ability to contemplate multiple beliefs and desires. Mental states are frequently seen in interaction, and the interviewee manifests an ability to reason accordingly; for example, "My parents didn't like each other very much, so it was important for them to make good friends with us." The willingness to contemplate the mental state of the other extends to malevolent behavior of the parents and the response of the experiencing self. For example:

She (my mother) was quite abusive to me, both verbally and physically aggressive — an abusive sort of character. . . . I mean when I was small I didn't stand up to her because she was bigger and she used to have the power but I stood up to her in my willfulness, she never managed to crush that part of me that in somebody else might have been crushed. I kept plugging in there sort of thing so there was aggression on both sides. . . .

The limitation in such accounts may be one or more of the following: (1) obvious gaps or omissions (e.g., there may be in-depth explorations of one parent but the other is ignored); (2) A self-imposed restriction to one category of mental states (e.g., noting the influence of beliefs but not of affects or desires), or limiting the account to conscious states and ignoring nonconscious aspects of motivation.

9. Complete Reflective-Self Function

The individual falling into this category would be expected to manifest an organized and consistent understanding of the motivations guiding the behavior of the self and the parents. Such an individual shows awareness of the qualitative differences between the mental functioning of the child and the adult, and his or her reflections on childhood experience give a clear indication of this discrimination; for example, "As a child you feel that your mother will be able to sort everything out and it takes a long time before you discover that her capacities are limited, just as yours are." The interviewee makes reference to unconscious desires, emotions, and ideas in an attempt to make sense of past or present behavior: "I suppose I must have been frustrated by being so dependent on my mother, and everything; otherwise I wouldn't have had so many tantrums." The subject also shows awareness of how relationships can affect each other: "It was difficult for her to like me. He adored me so much and treated me as someone so special. It would have been super-human of her not to feel jealous."

THE INFLUENCE OF PARENTS' REFLECTIVE-SELF FUNCTIONING ON INFANT SECURITY

Four of us independently rated the 200 prenatal interviews on the parents' reflective-self function scale. Interrater reliabilities were relatively high. For the mother interviews, the median reliability was .70; for the father interviews it was even higher (.75). The satisfactory reliabilities enabled us to aggregate the raters' scores and assign each interview to one of the points on the scale. Not surprisingly, reflective-self functioning was strongly associated with the classification of the interviews according to the Main system. (See Table 1.) Reflective-self function ratings were independent of important demographic variables. Cultural factors as indicated by social class, socioeconomic status, and ethnic background showed no significant correlation with reflective-self function ratings. Furthermore, neither maternal or paternal education nor verbal intelligence (as measured by a vocabulary test) related significantly to this scale.

Table 1
Mean (and SD) Reflective-Self Function Scores of Mothers and Fathers Grouped According to AAI Classification

	AAI classification			ANOVA
	Detached	Autonomous	Entangled	
Mothers	3.72	5.87	3.86	$F = 6.11$
	(.70)	(1.0)	(.75)	$df = 2,94$
	$n = 27$	$n = 60$	$n = 15$	
Fathers	3.67	5.00	4.0	$F = 14.6$
	(.78)	(1.0)	(.98)	$df = 2,81$
	$n = 16$	$n = 58$	$n = 10$	

We were primarily interested in the strength of the association between reflective-self functioning of the caregiver before the child was born and the child's security of attachment to that individual at 1 year or 18 months. We examined the proportion of mothers of avoidant, resistant, and secure infants falling into the six self-function categories. (See Table 2.) Although 52% of mothers of secure infants fell into the top two categories, only 10% of avoidant infants' mothers did so.

Table 2

Distribution of Parents' Reflective-Self Function Scores (M = Mother, F = Father) by the Child's Security Classification with that Parent (Expected Frequencies Shown in Parentheses)

		Infant classification		
		Avoidant	Resistant	Secure
No reflective-self function	M	4 (1.6)	0 (.6)	1 (2.8)
	F	3 (1.4)	0 (0)	2 (3.6)
Poor reflective-self function	M	18 (11.8)	4 (4.2)	15 (21.0)
	F	18 (12.7)	0 (0)	28 (33.3)
Generalized reflective-self function	M	9 (14.7)	6 (5.2)	31 (26.1)
	F	3 (9.7)	0 (0)	32 (25.3)
Accurate reflective-self function	M	0 (2.9)	1 (1.0)	8 (5.1)
	F	0 (.3)	0 (0)	1 (.7)

The distribution of resistant infants' mothers' reflective-self function was comparable to that of mothers of secure infants. The distribution of mothers' reflective scores was significantly different from chance (chi square = 14.4, $df = 2$, $p < 0.001$). The association between infant security of relationship and father's self function was somewhat weaker (chi square = 7.35, $df = 1$, $p < 0.01$), but so was the association with AAI categories.

How does the classification based on reflective-self functioning relate to the scales on which all interviews are rated in a standard way? The product-moment correlations between the AAI scales and reflective-self function scores are shown for mother and father interviews in Table 3.

Table 3

Correlation of Reflective-Self Function Ratings with AAI Scales

AAI scales	Mothers	Fathers
Loving relation with mother	.426	.425
Loving relation with father	.439	.279
Role reversal in parental relationship	-.298	.130
Quality of recall	-.633	-.246
Current anger with parents	-.123	.200
Idealization of relationships	-.424	-.214
Derogation of relationships	-.349	-.253
Coherence of transcript	.734	.638

The strongest relationship was to the all-important dimension of coherence. Interviews that are coherent have few internal contradictions and constitute spontaneous, credible discourse. Incoherence is common in parents of insecure children. (See Main et al., 1985; Fonagy et al., in press.) Reflective-self function yielded a greater point-biserial correlation with infant security than coherence (the strongest predictor of attachment classification) (see Fonagy et al., in press) or any other AAI scale ($r = .51$ and $.36$ for mothers and fathers, respectively). When reflective-self function was controlled for, coherence no longer related significantly to infant security. This implies that the predictive power of coherence lay in its close association with reflective-self function.

Reflective-self functioning also related strongly to observer ratings of the infant's behavior in the Strange Situation. In particular, infants of mothers with high ratings on this scale showed less avoidant behavior and more contact maintenance ($r = -.37$ and $-.30$, respectively). (See Table 4.)

Table 4

Correlation of Parents' Reflective-Self Function Ratings and Infant Behavior in the Strange Situation (M = Mother; F = Father)

	Ratings of infant behavior				Overall security classification
	Proximity seeking	Contact maintenance	Resistance	Avoidance	
M	.255 ($p < 0.006$)	.300 ($p < 0.002$)	.020 (n.s.)	-.375 ($p < 0.001$)	.508 ($p < 0.001$)
F	.140 (n.s.)	.167 (n.s.)	-.124 (n.s.)	-.235 ($p < 0.02$)	.36 ($p < 0.001$)

DISCUSSION

These results are consistent with our view that a key determinant of infant security is the caregiver's capacity to provide the infant with an environment that paves the way to the establishment of a secure relationship. A caretaker with a predisposition to see relationships in terms of mental content permits the normal growth of the infant's mental function. His or her mental state anticipated and acted on, the infant will be secure in attachment—that is, less reliant upon defensive behaviors to maintain psychic equilibrium. The heirs to defensive behaviors—primitive mechanisms of defense such as splitting and massive denial—will limit the insecure child's capacity to make full use of his or her potential to reflect on mental states. This handicap will ultimately constrain his or her capacity to provide an adequate psychological environment for his or her own infant. This, in our view, may in part explain the intergenerational concordance in attachment.

We believe that cross-generational prediction is possible because attachment security in infancy is based on parental sensitivity to, and understanding of, the infant's mental world. The parent's capacity to understand the infant is rooted in the construction of coherent mental representations based on the parent's own attachment history. Along with other laboratories (Ainsworth & Eichenberg, 1990; Main et al., 1985) we

too (Fonagy et al., 1991) found that of the 18 or so rating scales standardly used with the AAI, internal coherence of the transcript was the best single indicator of AAI classification and child's attachment status. The coherence of the parents' perception of their past derives from their unhindered capacity to observe their own mental functioning, to have a plausible view of themselves and their objects as human beings, thinking, feeling, wishing, believing, wanting, and desiring. We assume, then, that coherence may be a measure of reflectiveness, and it is the latter attribute of the caregivers that has direct implications for their relationship to the infant.

Viewed in this way, the notion of security takes on a somewhat new meaning. Placing our emphasis upon the parent's confident anticipation of the child's mental state as one of the essential processes underlying secure attachment may force us to reconsider the nature of security in the child's mind. In our view, a child may be said to be secure in relation to a caregiver to the extent that, on the basis of his or her experience, he or she can make an assumption that his or her mental state will be appropriately reflected on and responded to accurately. The child's confidence in this assumption will enable her or him to be more assured about the safety of the world of ideas and desires; she or he will feel secure in relation to her or his mental world. Prior to the point where the child achieves complete mental separation from the primary caregiver, the firmness of the assumption will be naturally a characteristic of a relationship rather than the child. Prior to the completion of the subphase of separation-individuation (Mahler, 1963), the child's mental world will always be shared with that of the object. With development, security will increasingly characterize the child's relation to her or his mental activity rather than current relationship patterns. The capacity to reflect on the mental world of others and the self assumes that the individual perceives the world of intentions, feelings, and beliefs to be a safe environment for exploration. We believe that this sense of safety, which evolves as part of an initially shared mental process between infant and caregiver, stays with the child as a relatively stable aspect of mental functioning.

This view is consistent with Main and Goldwyn (1990), whose metacognition scale is in many respects similar to our notion of reflective self. The primary difference lies in the emphasis in Main's scale upon reflection by the subject on his or her own cognitive capacity (Flavell, 1976). In contrast, our scale emphasizes the use of psychological constructs to understand the behavior of self and other. The advantage of Main's scale is that it does not confound the subject's tendency to self-reflection with his or her accuracy in so doing. Our scale, by collapsing accuracy and habitual mode of thinking, runs the risk of ascribing a high degree of reflective-self function to individuals who are able to tell a plausible but inaccurate psychological story.

Finally, we considered a number of alternative accounts of our findings. The concept of reflective-self function is clearly related to the somewhat outdated notion of psychological-mindedness. Psychological-mindedness has always been a rather vague construct which was poorly operationalized, and our work may be viewed as an attempt to fill this gap. It was most clearly defined in studies attempting to predict responsiveness in psychotherapy. In this role, the concept seems to have only limited usefulness, but its relationship with self-reflectiveness ratings remains to be explored.

Ratings of reflective-self functioning did not relate to any of the measures we used of mothers' or fathers' personality. Scores on neuroticism, extraversion, psychoticism,

and the lie scale were unrelated to our measure as was the screening instrument of general psychiatric symptoms we used. Similarly, self-esteem appeared not to be different in individuals with higher self-reflection. A simple vocabulary test also failed to relate substantially to our measure. In any case, personality, social, and demographic prenatal indications were unrelated to the child's attachment classification. The relatively high discriminatory validity of our measure encourages us to regard our findings as a small step forward in the study of transgenerational psychic processes.

Replication studies are needed, both to verify the usefulness of the concept for attachment research, and to decide if AAI transcripts are sufficiently robust to support judgments concerning an individual's perception and theories about the mental world of the other.

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