International Journal of Developmental Science 10 (2016) 117–124
DOI 10.3233/DEV-16201
IOS Press

Maternal Adult Attachment Interview (AAI) Collected During Pregnancy Predicts Reflective Functioning in AAIs from their First-Born Children 17 Years Later

Howard Steele*, Alejandra Perez, Francesca Segal and Miriam Steele
Department of Psychology at New School for Social Research, Center for Attachment Research, NY, USA

Abstract
This paper reports on the longitudinal links between first-time mothers ($N = 48$) Adult Attachment Interviews (AAIs), provided during pregnancy, and their first-born children's AAIs, provided at age 16 years. The AAIs from the adolescents were scored for reflective functioning (RF), and this was found to be significantly linked to whether their mothers' AAI were appraised as free-autonomous/secure as opposed to insecure-dismissing. Discussion concerns the unique influence of mothers upon their first-born children's development of reflective functioning skills, including the understanding of mind and emotion. Fathers, for whom AAIs were also available, appeared to have no influence on this process. RF scores from the adolescents did not differ as a function of either the previously observed infant-mother attachment or the infant-father attachment.

Keywords
Adult Attachment Interview (AAI), reflective functioning, adolescence, attachment, longitudinal study

Reflective functioning (RF) observed in Adult Attachment Interviews (AAIs) of mothers was first reported in the context of a longitudinal study showing that RF in pregnant women predicts the subsequently developing infant-mother attachment relationship (Fonagy et al., 1991). Since this seminal observation 25-years ago, Reflective Functioning (RF) has been widely applied in studies using the AAI and Parent Development Interview with robust findings showing that RF in parents is associated with security and optimal child development (Benbassat & Priel, 2012; Grienberger et al., 2005; Rosenblum et al., 2008; Smaling et al., 2016). The concept of RF holds some common features with the concept and research on 'theory of mind', with RF usefully thought of as measuring the extent to which an adult has an advanced higher-order theory of mind and emotion (Steele & Steele, 2008). Moderate to high levels of RF are seen in adults who show an awareness of the contents and limitations of one's own mind, and a high level of empathy toward others (Fonagy et al., 1998). A recent review article summarized the relevance of reflective functioning to clinical psychology research (Katznelson, 2014). The concept of RF would not exist without the rich array of writings in the philosophy of mind literature, and in psychoanalysis, long concerned with the influence of early experiences on the development of personality and mental health, and the complex ways in which experience become embedded in the structure and functioning of mental and emotional processes. RF may be seen as the adult's way of making sense of diverse relationship experiences across the lifetime, integrating them into a perspective on how to

*Address for correspondence
Howard Steele, 6th floor, 80 Fifth Avenue, Center for Attachment Research, The New School, New York, NY 10011, USA. E-mail: SteeleH@newschool.edu

understand past and present relationships, and make useful predictions about the how the self and others are likely to think, feel and behave in the future. Yet, attachment begins in infancy, long before language develops (Beebe et al., 2010). By one year of age, infants can display different behavioral manifestations of their attachment systems to each parent understood to be evidence that attachment during infancy is a relationship-specific process, i.e., a one-year old's attachment quality to mother may or may not be similar to the attachment to father (Grossmann et al., 1988; Main et al., 1985; Steele et al., 1996). Still, these two primary relationships, deeply embedded in the inner world, carry immediate and long lasting influences on functioning in the outer world with others (e.g., Fearon et al., 2010; Grossmann et al., 2002; Sroufe, 2005; Steele & Steele, 2005a). And, when security to mother exists in the primary caregiving relationship, adaptation to new caregiving relationships is behaviorally and physiologically more stable, balanced and adaptive (Ahnert et al., 2004).

Infant-Parent Attachments Reflect the Functioning of Internal Working Model(s)

Arguably, a great advance in thinking about the nature of mind within psychoanalysis was achieved by John Bowlby (1969/1982) when he suggested that the inner world is initially structured (in the final quarter of the first year of life) as an internal working model (IWM) of self and other. Bowlby borrowed the term IWM from the engineer and philosopher Kenneth Craik who in 1943 advanced the idea of an IWM with respect to what a rocket needs to reach its distant target. Namely, the rocket needs a capacity to monitor its internal resources and deploy them in response to a changing external environment, all the while holding the goal firmly 'in mind' so that the target is eventually and effectively reached. According to Bowlby (1969/1982), the healthy one-year old child's goal or target, when distressed, ill or worried, is to obtain proximity to the mother or father, deemed attachment figures—typical targets of the child's bids for attachment, and people likely to show the child sensitive responsive care (Ainsworth et al., 1978). Once a sense of security is restored to the distressed child by the attachment figure, the child is free to set off again exploring the environment, revisiting the attachment figure should the pursuit of novelty become overwhelming, or frightening. A cycle can therefore be seen, for the typical securely attached child, such that exploration thrives when the child is settled, and attachment prevails (seeking out and holding on to the parent) when anxiety or fear arises. This is the normal or typical course of infant emotional and social development. And 55%–60% of infants around the globe fit with some variation to this 'secure' pattern – i.e., the child who settles quickly on reunion in the Ainsworth Strange Situation procedure, returning promptly to play. The overwhelming majority of children who have experienced sensitive and responsive care over the first year display this secure pattern uniquely toward the caregiver(s) who consistently acknowledged and assuaged their distress, freely shown in times of need, over the preceding months (Mesman et al., 2016).

As well as security, there are two main forms of insecurity observable in infancy (and older children/adults), noted repeatedly in studies from around the globe since Ainsworth et al. (1978) first identified them. These are insecure-avoidance, and insecure-resistance. The child who follows the pattern of avoidance keeps his or her distress inside, hiding it, suppressing it, trying not to show it (despite physiological evidence of being distressed internally (see Spangler & Grossmann, 1993); such a child after having been alone responds with a lack of interest when the parent returns. The individual who follows the insecure-resistance pattern wears his or her heart on his sleeve so to speak, not hesitating to show distress that is obviously felt deeply. Indeed, an infant with this pattern will typically cry on separation and be inconsolable upon reunion. It is as if the child has learned that in order to get what s/he wants, a great fuss must be created. Parents of such children lacking flexibility and resourcefulness for settling the child, and the infant distress typically persists for the full duration of the three minute reunion episodes in the Ainsworth Strange Situation.

Parent-Specific Infant-Parent Patterns of Attachment and their Prediction from Parents' Spoken Responses to the Adult Attachment Interview

In the original Berkeley work that introduced the AAI (Main et al., 1985), mothers' interviews were uniquely related to the previously observed infant-mother relationship and fathers' interviews were similarly (though less) predictive (than the level of

mothers' influence on the infant-mother relationship) of the infant-father relationship. This suggested a remarkable level of cross-generational consistency, and relationship specificity, in the social and emotional meaning young children derive from their interactions with parents. The American findings set forward by Main et al. (1985) including AAIs from parents of six-year olds and looking backward to infant-parent attachment were replicated in Germany by Grossman et al. (1988). These retrospective cross-generational matches of attachment were confirmed in a prospective design, involving Adult Attachment Interviews (AAIs) with expectant mothers and fathers and subsequent assessments of the infant-mother and infant-father attachment quality (Steele et al., 1996) and replicated widely across linguistic and cultural barriers summarized in two meta-analytic summaries, the first covering some 1500 parent-infant pairs (van IJzendoorn, 1995) and another twenty years later that covered over 4,000 parent-infant pairs (Verhage et al., 2015).

Integrating Parent-Specific Attachments into a Higher Order Sense of Self

A longstanding unresolved issue for the attachment field is the question of how children come to integrate their histories of specific attachment to diverse caregivers (typically mother and father) into a coherent sense of self. This question is addressed, at least in part, by the current research reported here involving Adult Attachment Interview (AAI) responses from 16-year old adolescents for whom their early attachments to mother and father are known (Steele & Steele, 2005b). And the AAIs from the 16-year olds have been scored in terms of Reflective Functioning, permitting us to look backward at our previous measures of their infant-mother, infant-father relationships and their parents' AAI responses (Steele et al., 1996) to ask which of the earlier obtained attachment measures may be associated to their 16-year old self? The data set permitting this investigation is the London Parent-Child Project, a longitudinal study of intergenerational patterns of attachment. The longitudinal findings –, from pregnancy in one generation to 12-years of age in the next generation, – were summarized in Steele and Steele (2005a) where we noted that the maternal influence was strongly influential on inner world emotional outcomes, including talk about emotions, in the children over time, while the paternal influence appeared more evident when we looked at mental health outcomes, parent- and self-report. This is the first report on the mid-adolescent follow-up, and the focus is exclusively upon RF in the AAIs from the 16-year olds and the extent to which previously collected attachment measures (AAIs for the parents expecting their first child and infant-parent Strange Situation assessments of the infant-mother and infant-father attachments) might be predictive of this outcome 17 years later.

The current paper then addresses a central question, what are the unique influences of mother or father or both parents, on the developmental trajectory from infant relationship-specific patterns of attachment to person-specific adult patterns of attachment where the secure pattern is typified by narratives which show coherence, integration and reflective functioning. For example, does one parent, e.g., mother – as Freud (1940) postulated – have precedence in influencing the path of self-development and extent of integration achieved within the mind of the developing individual? When is such integration ordinarily achieved?

These questions are the subject of much ongoing developmental research. In our prior work with the London Parent-Child Project we argued that interviews with 11-year olds concerning self, friends and family may be scored in terms of overall coherence as an indicator of attachment security in middle childhood/early adolescence (Steele & Steele, 2005b). In that report early attachment to mother and father was related to coherence at age eleven, but for boys only; while girls' coherence was more simply linked to their early relationship to mother. These long-term effects of early attachment remained even after controlling for current levels of warmth reported by the children in their ongoing relations with parents.

When we looked at emotion understanding and expressivity measures obtained from the first-born children including themes of limit-setting and warmth in story completions at age give years (Steele et al., 2003), understanding of mixed emotions at age six years (Steele et al., 1999), and social cognition at age 11 (Steele et al., 2002), we observed that it was mothers' AAI security *not fathers*' that was systematically shown to have a significant influence on their first-born child's understanding of emotion and mind.

Variations in the adult's understanding of self and other, mind, emotion and behavior, is detailed in the Reflective Functioning Manual (Fonagy et al., 1998) as applied to Adult Attachment Interviews. Thus, as the first-born children in our London study approached their 16th birthday we administered

the Adult Attachment Interview and included ratings of reflective functioning to gain a sense of how they thought and felt about self and others in mid-adolescence. We then aimed to compare the adolescents' levels of RF with the AAIs from their mothers and fathers collected before the adolescents were born. Given the robust and consistent previously observed influence of mothers upon the emotional and mental development of their first-born children (Steele & Steele, 2005a), we favored the hypothesis that mothers', more than fathers, would have a significant influence on their adolescent children's reflective functioning.

Method

Sample

The participants for the present study were British adolescents aged 16-17 years whose parents had volunteered 17+ years previously to participate in the London Parent-Child Project (Steele & Steele, 2005a). Forty-eight adolescents were interviewed with the AAI in their family home, representing 50% attrition from the first time they were observed in the project at 12-months of age when 96 infants were observe with their mothers in the Strange Situation (Fonagy et al., 1991) but the distribution of parental (mother/father) AAI and infant-parent Strange Situation (with mother/with father) for the full sample (Steele et al., 1996, $N = 90$ families) did not differ significantly from the distributions observed for the sample of 48 which is the focus of the current report. In other words, attrition is due to factors other than attachment insecurity, such that the current sample of 48 may be deemed representative in attachment terms of the full sample, a typical community low-risk sample.

Measures

The Adult Attachment Measure (AAI) was developed by George, Kaplan, and Main (1985) together with a complex 200-page documents detailing how to rate and classify the interviews (Main et al., 2003), made available to researchers who attend a two-week Adult Attachment Interview Institute, and summarized in a book chapter (Main et al., 2008). The AAI has been extensively validated as a measure of parenting competence, and as a robust correlate of mental health (Bakermans-Kranenburg & van IJzendoorn, 2009). The current paper relies on the principal three-way classification of AAIs into autonomous-secure (F) and insecure (preoccupied/E or dismissing/Ds) responses. These three nominal judgments, reliably applied to AAIs (with inter-rater agreement >96% between the two authors of this paper, each highly experienced with the AAI) are usefully thought of as emotion-regulation strategies. The interview judged F reflects a valuing of attachment and a balanced regulation of positive and negative emotion as recalled and experienced in the interview. The interview judged E reflects an entanglement with attachment and a lack of containment of negative emotions, with recalled (often angry) emotions being experienced and shown in the present context of the interview. Finally, interviews judged Ds variously reflect a devaluing of attachment, impoverished recall for childhood, and untenable claims to having experienced a favorable or 'normal' attachment history. AAIs were collected from the parents of the adolescents 17 years prior, during the prenatal period when the parents were expecting their first child. For the 48 mothers, in the current report, the three-way assignment of their interviews is relied upon. This resulted in 28 (58%) maternal AAIs judged autonomous-secure, 12 (25%) judged insecure-dismissing, and eight (17%) judged insecure-preoccupied. This distribution suggests that despite the attrition of the sample over time, in terms of maternal attachment, the sample available for the 17-year follow-up were representative both of the original larger group and of meta-analytic findings from community samples (Bakermans-Kranenburg & van IJzendoorn, 2009).

The interviews from the adolescents were scored, with respect to the current results, for evidence of reflective functioning (Fonagy et al., 1998; Steele & Steele, 2008), an 11-point scale indexing how well or poorly the adolescents could show an understanding of the nature of mental states (e.g., their opacity, and susceptibility to disguise), of reciprocal links between mental states and behavior, a developmental perspective and sensitivity to the demands of the present (interview) context. RF was scored by MS with 25% of the interviews also being scored by HS – each blind to the identity of the interviewee. Agreement on the twelve reliability cases was very high (ICC = .94) and so MS's scores for RF were relied upon for the results. For the 48 adolescents interviewed, their scores for reflective functioning appeared somewhat lower than community samples of adults where a mean between four and five is expected; whereas for the current sample

of 16-year olds mean = 3.38, SD = 2.03, range = 0–7. Notably the ceiling score of 7 was only achieved by adolescents whose mothers' or fathers' AAIs from pregnancy were judged secure-autonomous, or who had been securely attached to mother or father during infancy.

Results

We first looked at whether RF in the adolescents was associated with verbal intelligence measures we held (from when the children were 11-yeards old and re the parents from the original pregnancy assessment). RF from the 16-year olds was not linked to these measures, nor was RF linked to gender of the child. We then considered the possible early attachment influences upon adolescent reflective functioning (RF) scores in a series of four one-way ANOVAS where RF scores of the adolescents were grouped by their own attachment to mother (at 12 months), to father (at 18 months), and to the AAI classifications assigned to their mothers' interviews and their fathers' interviews. These four ANOVA results are shown below in Table 1. Notably, from these four ANOVAs, only one, regarding mothers' AAIs, yielded a significant F-value and this is show near the top of Table 1 below.

Table 1 reveals that when grouped by maternal AAI status three-way, first-born adolescents scores for reflective functioning resulted in an overall significant result, $F(2,45) = 4.11, p < 0.05$, two-tailed. Inspection of the pair-wise means revealed that this significance derived from the difference between lower RF scores of those adolescents whose mothers had provided insecure-dismissing AAIs in pregnancy, as compared to the higher RF score for those whose mothers had provided autonomous-secure AAIs, pointing to a robust maternal attachment influence on the development of reflective functioning in adolescence. In order to gain and estimate of the strength of this association, a bivariate correlation was computed between maternal AAI security (insecure versus secure) and their adolescents RF, with $r = 0.37, p < 0.01$, suggesting that 14% of the variance between these variables is held in common, suggestive of a large effect size ($d = 0.8$).

Discussion

The current brief report considered longitudinal influences on reflective functioning observed in Adult Attachment Interviews (AAIs) obtained from 16-year old first-born adolescents. Available for consideration were the earlier observed infant-mother (12-month) attachment status, infant-father (18-month) attachment status, and their mothers' and fathers' AAIs from *before* the adolescents were born. The only significant results arose from consideration of the mothers' AAIs.

Given that in our prior work with the London Parent-Child Project, we found that with respect to social-emotional outcomes observed in the children, especially tasks that required the child to label

Table 1
Reflective Functioning Scores Assigned to AAIs of 16-year olds'

Grouped by their Mothers' Prenatal AAI Classifications ($N = 48$)				
Dismissing (Ds)	Preoccupied (E)	Autonomous-Secure (F)	*F*-value	Pairwise
$n = 12$	$n = 8$	$n = 28$		Comparison
2.2 (1.8)	2.9 (2.2)	4.0 (1.9)	4.1*	F > Ds
Grouped by their Father's Prenatal AAI Classifications ($N = 48$)				
Dismissing (Ds)	Preoccupied (E)	Autonomous-Secure (F)		
$n = 10$	$n = 4$	$n = 34$		
3.6 (2.1)	3.0 (2.2)	3.4 (2.0)	0.10 (NS)	
Grouped by their Attachment to Mother at 12 months ($N = 48$)				
Avoidant (A)	Resistant (C)	Secure (B)		
$n = 17$	$n = 6$	$n = 25$		
2.7 (1.9)	3.5 (2.3)	3.8 (2.1)	1.4 ($p = 0.27$, NS)	
Grouped by their Attachment to Father at 18 months ($N = 47$)				
Avoidant (A)	Resistant (C)	Secure (B)		
$n = 13$	$n = 0$	$n = 34$		
3.3 (1.7)		3.4 (2.2)	0.04 (NS)	

Note. Pairwise comparisons rely on Bonferroni Test. *$p < 0.05$.

emotion faces (Steele et al., 2008), shown an understanding of mixed emotions (Steele et al., 1999), or show an understanding of when a cartoon signifies distress and imagine a way of coping with distress (Steele et al., 2002), it was mothers' (not fathers') AAI security that uniquely predicted these outcomes. So the observation that adolescent's reflective functioning skills are linked to maternal AAI security is consistent with this pattern. The significant contrast is between the children of mothers with autonomous-secure as opposed insecure-dismissing interviews. The children of mothers with insecure-preoccupied interviews were not significantly different from the other AAI maternal groups. The conversational style of the preoccupied speaker is one that may or may not engender reflective functioning, depending on what the listener does with the complaints and ruminations likely to be expressed by the preoccupied speaker. In contrast, the conversational style of the dismissing speaker is likely to be barren of mental state terms such that reflective functioning in the listener (akin to the speaker) is likely to be inhibited. This would appear to be the case for the adolescent children of mothers whose AAIs were judged insecure-dismissing.

Interestingly, it was the interview with mothers, from before the adolescent was born, that predicted forward in time over seventeen years. And the observed infant-mother attachment at one-year did not link up with reflective functioning in adolescence. Yet the AAI from the pregnant mothers did. This is perhaps most usefully understood in terms of how autonomy/security in the AAI is a marker of competent parenting vis-à-vis infants, children and adolescents, indicating a mother capable of adapting as needed to the differing emotional demands of her child over time. That is an expectant mother who appears coherent and valuing of attachment, whether her attachment experiences were favorable or not, is likely to be the kind of mother who parents in a competent way across childhood and adolescence. And, somehow, for mothers in the sample studied who initially provided autonomous-secure AAIs, their parenting is likely to have involved routine conversations with their growing children about ups and downs, regrets and promises/opportunities at school, in friendships and vis-à-vis one's general feelings such that the majority of their adolescent children provided AAIs rated moderate to high for reflective functioning.

Are fathers irrelevant to this process of children acquiring a well-functioning model of mind, emotion and relationships? The jury is out on this question, as much further longitudinal research including fathers is called for before such a conclusion can be embraced. The current sample size was modest at best, and there is a general paucity of research on fathers compared to that of mothers, though the work of Karin Grossmann, Klaus Grossmann and their students stands as a shining example of how fathers should be studied, with care and attention to the ways they are like, yet also different from, mothers (Grossmann et al., 2002). Grossmann et al. (2002) identified the important influence fathers have during the toddler period when their sensitivity and responsiveness in the domain of play may be vital for optimal social outcomes reaching long into the future. And with respect to the role that fathers' reflective functioning may have on their adolescent children, Benbassat and Priel (2012) have recently shown that paternal RF may be a significant moderator of the associations between parenting behaviors and adolescents' mental health outcomes. This finding echoes an earlier observation in our work with the London Parent-Child Project, when we found direct influences of paternal RF on their first-born children's mental health as the children entered school, age six, and as they entered adolescence, 11-12 years (Steele & Steele, 2008). So as we explore other aspects of the young adults' lives in the London Parent-Child Project, we may find discrete influences upon their well-being coming from their fathers as well as their mothers. But as far as the outcome of Reflective Functioning (RF) in the AAI is concerned, we can conclude that the maternal influence appears to be the lone significant influence. No doubt, for the young adult who has developed moderate to high RF, understanding of the links among thoughts, emotions and interactive behavior with others, including with mothers and fathers, will be enhanced.

Author's Note

This paper was prepared in honor of the 80th birthday of Klaus Grossmann, a stalwart supporter of our work with the London Parent-Child Project, a towering figure in the field of attachment and developmental psychology, and a dear friend. The authors are also grateful to the participating families in the London Parent Child Project, and the funding sources for the research over the years including the Kohler Stiftung of Germany, the Economic and Social Research

Council (ESRC) of the UK, the Social Sciences Research Council (SSRC) of Canada, and the Commonwealth Scholarship Fund of the UK. At the time of preparing this report, Miriam Steele and Howard Steele were receiving support from the New York Health Foundation (2014-2016).

References

Ahnert, L., Gunnar, M. R., Lamb, M. E., & Barthel, M. (2004). Transition to child care: Associations with infant–mother attachment, infant negative emotion, and cortisol elevations. *Child Development, 75*, 639-650. doi: 10.1111/j.1467-8624.2004.00698.x

Ainsworth, M., Blehar, M., Waters, E., & Wall, S. (1978). *Patterns of attachment*. Hillsdale, NJ: Erlbaum.

Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2009). The first 10,000 Adult Attachment Interviews: Distributions of adult attachment representations in clinical and non-clinical groups. *Attachment & Human Development, 11*, 223-263. doi: http://dx.doi.org/10.1080/14616730902814762

Beebe, B., Jaffe, J., Markese, S., Buck, K., Chen, H., Cohen, P., . . . Feldstein, S. (2010). The origins of 12-month attachment: A microanalysis of 4-month mother–infant interaction. *Attachment & Human Development, 12*, 3-141. doi: http://dx.doi.org/10.1080/14616730903338985

Benbassat, N., & Priel, B. (2012). Parenting and adolescent adjustment: The role of parental reflective function. *Journal of Adolescence, 35*, 163-174. doi: http://dx.doi.org/10.1016/j.adolescence.2011.03.004

Bowlby, J. (1969/1982). *Attachment and loss: Vol. 1. Attachment*. New York, NY: Basic Books.

Fearon, R. M. P., Bakermans-Kranenburg, M. J., van IJzendoorn, M. H., Lapsley, A. M., & Roisman, G. I. (2010). The significance of insecure attachment and disorganization in the development of children's externalizing behavior: A meta-analytic study. *Child Development, 81*, 435-456. doi: 10.1111/j.1467-8624.2009.01405.x

Fonagy, P., Steele, H., & Steele, M. (1991). Maternal representations of attachment during pregnancy predict the organisation of infant-mother attachment at one-year. *Child Development, 62*, 891-905. doi: 10.1111/j.1467-8624.1991.tb01578.x

Fonagy, P., Steele, M., Steele, H., Moran, G. S., & Higgitt, A. C. (1991). The capacity for understanding mental states: The reflective self in parent and child and its significance for security of attachment. *Infant Mental Health Journal, 12*, 201-218.

Fonagy, P., Target, M., Steele, H., & Steele, M. (1998). *Reflective-Functioning Manual, version 5 for application to Adult Attachment Interviews*. Unpublished manuscript, Psychoanalysis Unit, University College London.

Freud, S. (1940). An outline of psycho-analysis. *The International Journal of Psycho-Analysis, 21*, 27.

George, C., Kaplan, N., & Main, M. (1985). *Attachment interview for adults.* Unpublished manuscript, University of California, Berkeley.

Grossmann, K., Fremmer-Bombik, E., Rudolph, J., & Grossmann, K. E. (1988). Maternal attachment representations as related to patterns of infant-mother attachment and maternal care during the first year. In R.A. Hinde & J.S. Hinde (Eds.), *Relationships within families: Mutual influences* (pp. 241-260). Oxford: University Press.

Grossmann, K., Grossmann, K. E., Fremmer-Bombik, E., Kindler, H., & Scheuerer-Englisch, H. (2002). The uniqueness of the child–father attachment relationship: Fathers' sensitive and challenging play as a pivotal variable in a 16-year longitudinal study. *Social Development, 11*, 301-337. doi: 10.1111/1467-9507.00202

Katznelson, H. (2014). Reflective functioning: A review. *Clinical Psychology Review, 34*, 107-117. doi: http://dx.doi.org/10.1016/j.cpr.2013.12.003

Kelly, K., Slade, A., & Grienenberger, J. F. (2005). Maternal reflective functioning, mother–infant affective communication, and infant attachment: Exploring the link between mental states and observed caregiving behavior in the intergenerational transmission of attachment. *Attachment & Human Development, 7*, 299-311. doi: http://dx.doi.org/10.1080/14616730500245963

Main, M., Goldwyn, R., & Hesse, E. (2003). *The Adult Attachment Interview: Scoring and classification system, version 7.2.* Unpublished manuscript, University of California at Berkeley.

Main, M., Hesse, E., & Goldwyn, R. (2008). Studying differences in language usage in recounting attachment history: An introduction to the AAI. In H. Steele & M. Steele (Eds.), *Clinical applications of the Adult Attachment Interview* (pp. 31-68). New York, NY: Guilford Press.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs of the Society for Research in Child Development, 50*, 66-104. doi: 10.2307/3333827

Mesman, J., Van IJzendoorn, M.H., & Sagi-Schwartz, A. (2016). Cross-cultural patterns of attachment: Universal and contextual dimensions. In J. Cassidy, & P.R. Shaver (Eds), *Handbook of attachment: Theory, research, and clinical applications (3rd ed.*, pp. 853-877). New York: Guilford Press.

Rosenblum, K. L., Mcdonough, S. C., Sameroff, A. J., & Muzik, M. (2008). Reflection in thought and action: Maternal parenting reflectivity predicts mind-minded comments and interactive behavior. *Infant Mental Health Journal, 29*, 362-376. doi: 10.1002/imhj.20184

Smaling, H. J., Huijbregts, S. C., Suurland, J., Heijden, K. B., Mesman, J., Goozen, S. H., & Swaab, H. (2016). Prenatal reflective functioning and accumulated risk as predictors of maternal interactive behavior during free play, the still-face paradigm, and two teaching tasks. *Infancy, 21*, 766-784. doi: 10.1111/infa.12137

Spangler, G., & Grossmann, K. E. (1993). Biobehavioral organization in securely and insecurely attached infants. *Child Development, 64*, 1439-1450. doi: 10.1111/j.1467-8624.1993.tb02962.x

Sroufe, L. A. (2005). Attachment and development: A prospective, longitudinal study from birth to adulthood. *Attachment & Human Development, 7*, 349-367. doi: http://dx.doi.org/10.1080/14616730500365928

Steele, H., & Steele, M. (2008). On the origins of reflective functioning. In F. Busch (Ed.), *Mentalization: Theoretical considerations, research findings, and clinical implications. Psychoanalytic inquiry book series*, 29 (pp. 133-158). New York, NY: Analytic Books.

Steele, H., Steele, M., & Fonagy, P. (1996). Associations among attachment classification of mothers, fathers and their infants. *Child Development, 67*, 541-555. doi: 10.2307/1131831

Steele, H., Steele, M., Croft, C., & Fonagy, P. (1999). Infant-mother attachment at one-year predicts children's understanding of mixed-emotions at six years. *Social Development, 8*, 161-178. doi: 10.1111/1467-9507.00089

Steele, H., & Steele, M. (2005). The construct of coherence as an indicator of attachment security in middle childhood: The Friends and Family Interview. In K. Kerns & R. Richardson (Eds.), *Attachment in middle childhood* (pp. 137-160). New York, NY: Guilford Press.

Steele, H., & Steele, M. (2005). Understanding and resolving emotional conflict: The view from 12 years of attachment research across generations and across childhood. In K. E. Grossmann, K. Grossmann, & E. Waters (Eds.), *Attachment from infancy to adulthood: The major longitudinal studies* (pp. 137-164). New York, NY: Guildford Press.

Steele, H., Steele, M., & Croft, C. (2008). Early attachment predicts emotion recognition at 6 and 11 years old. *Attachment & Human Development, 10*, 379-393. doi: http://dx.doi.org/10.1080/14616730802461409

Steele, M., Steele, H., & Johansson, M. (2002). Maternal predictors of children's social cognition: An attachment perspective. *Journal of Child Psychology and Psychiatry, 43*, 189-198. doi: 10.1111/1469-7610.00096

Steele, M., Steele, H., Woolgar, M., Yabsley, S., Johnson, D., Fonagy, P., & Croft, C. (2003). An attachment perspective on children's emotion narratives: Links across generations. In R. Emde, D. Wolf, & D. Oppenheim (Eds.), *Revealing the inner worlds of young children* (pp. 163-181). Oxford: Oxford University Press.

van IJzendoorn, M. H. (1995). Adult attachment representations, parental responsiveness, and infant attachment: A meta-analysis on the predictive validity of the Adult Attachment Interview. *Psychological Bulletin, 117*, 387-403. doi: http://dx.doi.org/10.1037/0033-2909.117.3.387

Verhage M. L., Schuengel C., Madigan S., Fearon R. M. P, Oosterman M., Cassibba R., ... van IJzendoorn, M. H. (2015). Narrowing the transmission gap: A synthesis of three decades of research on intergenerational transmission of attachment. *Psychological Bulletin, 142*, 337-366. doi: http://dx.doi.org/10.1037/bul0000038

Bio Sketches

Howard Steele is Professor and Chair of the Clinical Group in the Psychology Department at the New School for Social Research. He is Co-Director of the Center for Attachment Research at The New School, and is founding and senior editor of the academic journal *Attachment & Human Development*. He is also the founding and past president of the Society for Emotion and Attachment Studies.

Miriam Steele is Professor and Co-Director of the Center for Attachment Research in the Psychology Department, at The New School for Social Research. She is an Anna Freud Center trained psychoanalyst, and has just completed a 7-year term as Director of Clinical Training for the PhD in Clinical Psychology at The New School.

Alejandra Perez is Director of the MSc course at University College London and The Anna Freud Center in Psychoanalytic Developmental Psychology. She trained in psychoanalysis at the British Psychoanalytic Society as she also completed a PhD in attachment research (with the Steeles) at University College London. Dr. Perez collected the Adult Attachment Interviews from the 16-year olds, as did Francesca Segal.

Francesca Segal flirted seriously with the idea of completing a PhD in Psychology, contributing to the current paper in the process, but finishing her first novel, *The Innocents*, overtook her attention, as did the wide acclaim it received. The novel is a nod to Edith Wharton's *The Age of Innocence,* winning numerous awards for its subtle, complex and humorous depiction of family life and romance.