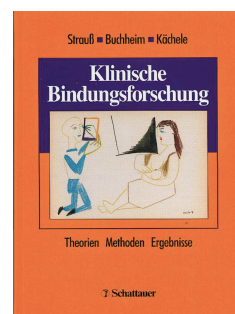
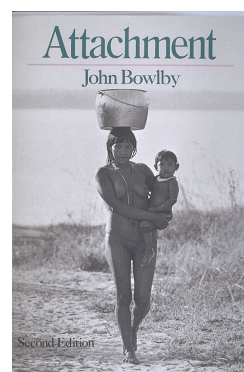


Adult Attachment Measures and Future Aspects of Attachment Research

Faculty Choice

Application of Attachment Theory

- **Developmental Psychology**
 - Transgenerational Transmission of Attachment
- **Clinical Psychology and Psychotherapy**
 - Clinical Implications of Attachment Patterns
 - Therapeutic Relationship
 - Measuring of Change
- **Neurobiology**
 - Animal Research
 - Research in Humans

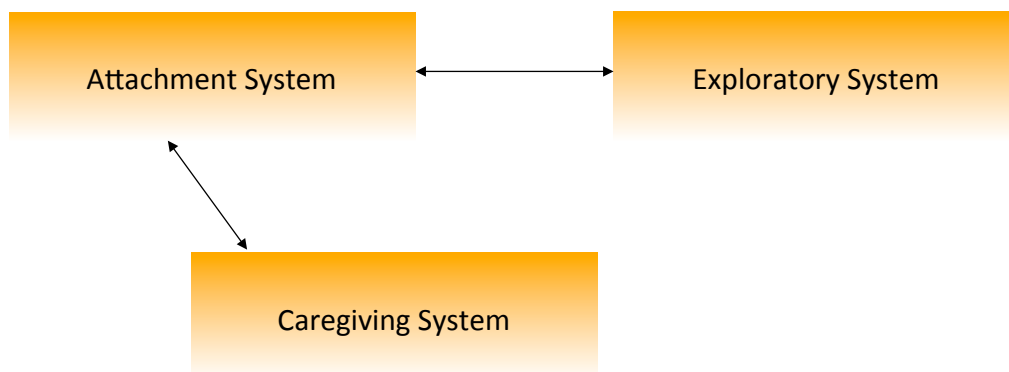


The Attachment Relationship

Bowlby J (1969) *Attachment*, Vol. 1; (1973) *Separation*, Vol. 2;
(1980) *Loss*, Vol. 3, Hogarth Press, London

- tie between child and primary caregiver, goal: seeking proximity in frightening situations (→ survive), distinct from
 - Sexual/romantic relationships (sexual behavioral system)
 - Friendship/peer relationships (affiliative behavioral system)
- Memories about repetitive attachment experiences are stored --> “inner working model of attachment” (schemata)
 - Based on real experience
 - Memories and narratives are maintained by defensive processes
 - Parent’s mental organization of attachment predict attachment development of their own child

Attachment Relevant Systems



weitere Verhaltenssysteme: Gewinnen im Laufe der Entwicklung an Bedeutung

Romantic/Sexual System

Affiliative System

Measures of attachment in research in Infancy

- http://personal.georgiasouthern.edu/~jkennedy/HOAssessATT_02wpd.htm
- **Ainsworth Strange Situation**
 - *This structured laboratory procedure consists of 8 3-minute episodes of increasing stress. During the procedure infants are exposed to an adult female stranger and two short separations from the mother. Behaviors assessed include proximity-seeking and maintaining, avoidance, and resistance. The procedure is usually videotaped for coding. Children are classified into one of 4 categories, called secure, resistant, avoidant, or disorganized. It is assumed that these categories reflect the quality of parenting infants have received during their first year. Reliability and construct validity are excellent. Extensive training is required to code children's attachment classification using this procedure. Suitable for infants 12-24 months old.*
- **Attachment Q-Sort**
 - *Waters and Dean's measure attempts to rate the degree of security of attachment. It also attempts to differentiate attachment from constructs such as sociability and dependency. The instrument can be completed by parents or independent observers. Reliability is adequate, and validity is adequate. 12-36 months.*
- <http://www.psihologija.edu.rs/literatura/20111206113449.pdf>
- http://www.psychology.sunysb.edu/attachment/measures/content/aqs_items.pdf

Measures of attachment in research in early childhood

- **Main-Cassidy System**
 - *Six-year-olds experience a 1-hour separation. Reunion behaviors with the mother are considered to be particularly important. Avoidance and security are measured on a 7-point scale. Attachment categories are the same as above.*
- **Story Completion**
 - *Three-year-olds complete 5 stories by manipulating small family figures which act out an ending to a story. As a set, the stories allow the child to reveal expectations about the attachment figure as an authority figure and source of comfort and protection. Children can be classified as secure or insecure in attachment. Validity of the instrument is weak.*
- **Klagsbrun-Bowlby Adaptation of the Hansburg Separation Anxiety Test**
 - *Six photographs of young children experiencing separations from their parents are presented. This measure is appropriate for children 4-7 years of age. Projective responses are scored for emotional openness and constructive coping. Concurrent validity is acceptable.*
- **Kaplan & Main's Family Drawings System**
 - *This is an analysis of a family drawing which includes a checklist of signs for each of the attachment categories and global rating scales. Used with kindergarten children and 8-9 year olds. Reliability and validity adequate.*

Measures of attachment in research in middle childhood

- **Separation Anxiety Test**

This is a semi-structured interview that taps into children's thoughts and feelings about attachment. Children are shown pictures with a child target experiencing separation. Children are scored for emotional openness, coherence of discourse, anger, pessimism, and blame. Reliability is acceptable.

- **Child Attachment Interview (CAI) Mary Target**

The CAI is a semi-structured interview, in which children are invited to describe their relationships with their primary caregivers. The coding system is informed by the Adult Attachment Interview and the Strange Situation Procedure, and produces 4 attachment categories along with a continuous measure of attachment security based on ratings of attachment-related dimensions.

- <http://www.ucl.ac.uk/psychoanalysis/research/cai.htm>

- **Attachment Questionnaire for Children (AQC)**

- *The AQC is a 1-item self-report measure of children's attachment style that is based on Hazan & Shaver's (1987) single-item measure of adult attachment style. Children are given three descriptions of feelings and perceptions about relationships with other children and are asked to choose the description that best fits them. The measure classifies children according to one of three attachment styles: Secure, Avoidant, or Ambivalent.*

Paper

Human Development 2005;48:155–182
DOI: 10.1159/000085519

Human
Development

The Meaning and Measurement of Attachment in Middle and Late Childhood

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Table 1. Overview of reviewed measures

Measure	Citation	Major variables
<i>Self-Report Measures</i>		
Security Scale	Kerns, Klepac, & Cole [1996]	Felt security with mother/father
Coping Strategies Questionnaire	Finnegan, Hodges & Perry [1996]	Preoccupied & avoidant coping strategies with mother/father
Inventory of Parent and Peer Attachment	Armsden & Greenberg [1987]	Attachment to parent
<i>Projective Techniques</i>		
Modified Doll Story Completion Task	Granot & Mayseless [2001]	Security & insecurity within the attachment relationship; classification as secure, avoidant, ambivalent, disorganized
SAT: Slough & Greenberg System	Slough & Greenberg [1990]	Attachment, self-reliant, avoidant responses to pictured separations
SAT: Resnick System	Resnick [1993]	Classification as secure/autonomous, dismissing, preoccupied/enmeshed
<i>Interview Measures</i>		
AICA	Ammaniti, van IJzendoorn, Speranza, & Tambelli [2000]	Classification as secure, dismissing, preoccupied, unresolved
CAI	Target, Fonagy, & Shmueli-Goetz, [2003]	Classification as secure, insecure

III. SECURITY IN INFANCY, CHILDHOOD, AND ADULTHOOD: A MOVE TO THE LEVEL OF REPRESENTATION

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JUDE CASSIDY

University of Virginia

The aim of this chapter is to discuss individual differences in attachment relationships as they relate to individual differences in mental representation, that is, in the individual's "internal working models" of attachment (Bowlby, 1969/1982b, 1973, 1980; Bretherton, in this vol.). We define the internal working model of attachment as a set of conscious and/or un-

We are grateful to the Institute of Human Development, Berkeley, and to the Society for Research in Child Development for funding that made the study of our sample at 6 years possible. In its earlier phases, the Social Development Project was supported by the William T. Grant Foundation, by the Alvin Nye Main Foundation, and by Bio-Medical Support Grants 1-444036-32024 and 1-444036-32025 for studies in the behavioral sciences. The Child Study Center at the University of California was invaluable in its provision of subjects and in the training provided for our observers and examiners. The National Center for Clinical Infancy Programs provided support and assistance to Nancy Kaplan. This project would not have been possible without the direction and assistance provided by Donna Weston and by Bonnie Powers, Jackie Stadtman, and Stewart Wakefield in its first phases. For the initial identification of infants who should be left unclassified—an identification critical to the present study—we gratefully acknowledge both Judith Solomon and Donna Weston. Carol George participated in the designing of the sixth-year project; Ruth Goldwyn served as adult interviewer; and Ellen Richardson served as the child's examiner. The videotapes and transcripts of the sixth-year study were analyzed by Jude Cassidy, Anitra DeMoss, Ruth Goldwyn, Nancy Kaplan, Todd Hirsch, Lorraine Littlejohn, Amy Strage, and Reggie Tiedemann. Mary Ainsworth, John Bowlby, Harriet Oster, and Amy Strage provided useful criticism of earlier versions of this chapter. The overall conceptualization was substantially enriched by suggestions made by Erik Hesse.

Move to the level of representation

- Measurement of adult attachment began with the Adult Attachment Interview (AAI) (George et al. 1985, Main & Goldwyn 1986).
- It was originally developed to **predict** the attachment pattern of infants to caregivers and was subsequently applied to numerous other research questions.

Adult Attachment Interview (AAI)

(George et al. 1985)

(Main & Goldwyn 1996)

- The AAI measures the current representation of attachment experiences in terms of past and present on the basis of narratives
- 18 questions are about the relationship with parents in childhood, sorrow, illness, first separations, losses of significant others and threatening experiences like sexual or physical abuse

The Adult Attachment Interview: Coding procedure

The interview is analyzed in several stages:

1. Ratings of the subject's probable *experiences* (e. g. loving, rejecting, role reversing).
2. Ratings of the subject's *present state of mind* with respect to attachment (e. g. angrily preoccupied, idealizing, coherent, disorganized)
3. **Classification:** Secure, Dismissing, Preoccupied, Unresolved

Attachment Representations in Mothers, Fathers, Adolescents, and Clinical Groups: A Meta-Analytic Search for Normative Data

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Center for Child and Family Studies, Leiden University

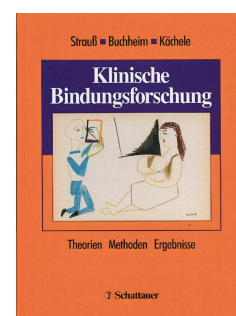
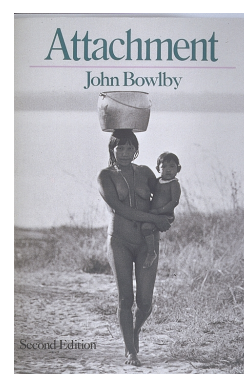
This meta-analysis on 33 studies, including more than 2,000 Adult Attachment Interview (AAI) classifications, presents distributions of AAI classifications in samples of nonclinical fathers and mothers, in adolescents, in samples from different cultures, and in clinical groups. Fathers, adolescents, and participants from different countries show about the same distribution of AAI classifications as nonclinical mothers do. The distribution of nonclinical mothers is as follows: 24% dismissing, 58% autonomous, and 18% preoccupied mothers. About 19% of the nonclinical mothers are unresolved with respect to loss or trauma of other kinds. Mothers from low socioeconomic status show more often dismissing attachment representations and unresolved loss or trauma. Autonomous women and autonomous men are more often married to each other than can be expected by chance, and the same goes for unresolved men and women. Clinical participants show highly deviating distributions of AAI classifications, with a strong overrepresentation of insecure attachment representations, but systematic relations between clinical diagnosis and type of insecurity are absent.

Discriminant Validity of the Adult Attachment Interview

CROWELL, JUDITH A.; WATERS, EVERETT; TREBOUX, DOMINIQUE; O'CONNOR, ELIZABETH; COLON-DOWNS, CHRISTINA; FEIDER, OLGA; GOLBY, BARBARA; and POSADA, GERMAN. *Discriminant Validity of the Adult Attachment Interview*. CHILD DEVELOPMENT, 1996, 67, 2584–2599. The Adult Attachment Interview is a semi-structured interview developed to investigate adults' attachment representations. Subjects are asked to describe their parents as caregivers, explain these descriptions, describe how their parents typically responded to distress, and discuss their current relationships with their parents. They are also asked to describe any significant losses and/or instances of abuse during childhood. Scoring focuses on the accessibility of early experiences to memory and the coherence and plausibility of the subject's narrative. Discriminant validity is always an important issue with such measures because IQ and other cognitively loaded variables offer plausible alternative interpretations or represent important correlates that should be treated as covariates when the measure is used. In addition, complex, multifaceted interviews always pose the risk of assessing general social adjustment rather than a more narrowly defined construct. This study examines the discriminant validity of the AAI vis-à-vis intelligence, social desirability, discourse style, and general social adjustment in a sample of 53 native-English-speaking, married women with preschool children. They were assessed with the AAI, a written IQ test, the Social Adjustment Scale, the Employment Experience Interview (discourse style), and a measure of social desirability. There were modest but significant correlations with IQ scores and social adjustment. There was no relation between AAI classifications and discourse style or social desirability. These results substantially strengthen the case for interpreting the AAI as an attachment-related measure.

Application of Attachment Theory

- Developmental Psychology
 - Transgenerational Transmission of Attachment
- Clinical Psychology and Psychotherapy
 - Clinical Implications of Attachment Patterns
 - Therapeutic Relationship
 - Measuring of Change
- Neurobiology
 - Animal Research
 - Research in Humans



Adult Attachment Representations, Parental Responsiveness, and Infant Attachment: A Meta-Analysis on the Predictive Validity of the Adult Attachment Interview

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Leiden University

About a decade ago, the Adult Attachment Interview (AAI; C. George, N. Kaplan, & M. Main, 1985) was developed to explore parents' mental representations of attachment as manifested in language during discourse of childhood experiences. The AAI was intended to predict the quality of the infant–parent attachment relationship, as observed in the Ainsworth Strange Situation, and to predict parents' responsiveness to their infants' attachment signals. The current meta-analysis examined the available evidence with respect to these predictive validity issues. In regard to the 1st issue, the 18 available samples ($N = 854$) showed a combined effect size of 1.06 in the expected direction for the secure vs. insecure split. For a portion of the studies, the percentage of correspondence between parents' mental representation of attachment and infants' attachment security could be computed (the resulting percentage was 75%; $\kappa = .49$, $n = 661$). Concerning the 2nd issue, the 10 samples ($N = 389$) that were retrieved showed a combined effect size of .72 in the expected direction. According to conventional criteria, the effect sizes are large. It was concluded that although the predictive validity of the AAI is a replicated fact, there is only partial knowledge of how attachment representations are transmitted (the transmission gap).

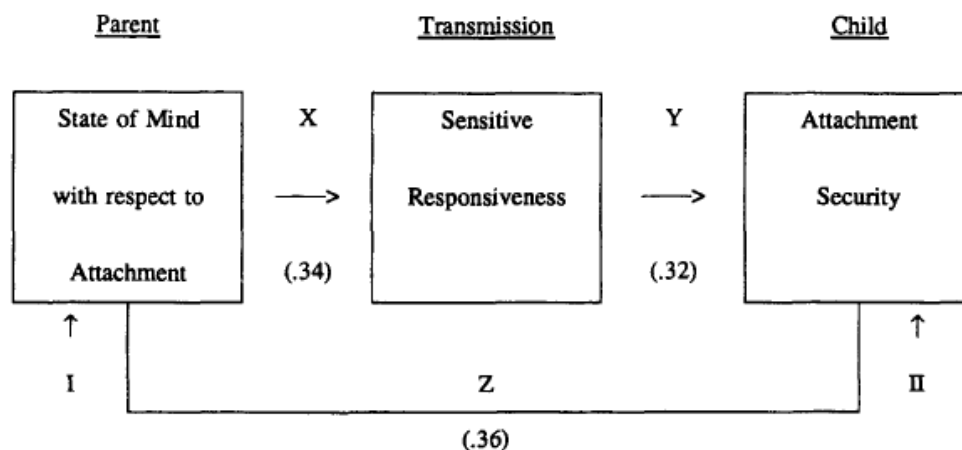


Figure 1. Parents' attachment representation and infant–parent attachment: the transmission gap. X = influence of parental attachment on responsiveness; Y = influence of parental responsiveness on children's attachment security; Z = influence of parental attachment representation on children's attachment through transmission mechanisms other than responsiveness. I = unspecified influences on parents' attachment; II = unspecified influences on children's attachment.

Patterns of Relating

- Hazan & Shaver considered how adults with different attachment histories would **classify themselves** according to the ways they think, feel, and behave in close relationships.
- They argued that the **three** attachment patterns seen during infancy would emerge as three primary **interpersonal** styles during adolescence and adulthood.
- Their original approach presented adults with three patterns of attitudes towards **romantic** relationships and asked subjects to classify

Patterns of Relating

- Following Hazan & Shaver self-classification methods and extensive questionnaire-based scales have evolved.
- A great deal of research has demonstrated the utility of these self-report measures in testing and confirming predictions about attachment theory

Two traditions in attachment research

- Although all attachment measures probe emotional regulation, interpersonal awareness, and behavioral strategies in close relationships, they have been employed by two distinct traditions:
 - **social psychologists**, who have developed and used *self-report measures*,
 - **developmental psychologists**, who have preferred tests that do not rely on conscious self-evaluation using *representational measures*, like interviews

Self-Report measures

- Self-report measures probe conscious attitudes towards relationships and memories of experiences in current relationships;
- therefore, they are not constructed to detect when defenses distort responses.
- Self-report questionnaires are also criticized for being passive (i.e., that they do not detect those attachment phenomena that need to be activated to be manifested).
- Self-report instruments most often focus on views that individuals currently hold about themselves and others in close relationships.

Attachment working models as unconscious structures: An experimental test

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Internal working models of attachment (IWMs) are presumed to be largely *unconscious* representations of childhood attachment experiences. Several instruments have been developed to assess IWMs; some of them are based on self-report and others on narrative interview techniques. This study investigated the capacity of a self-report measure, the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987), and of a narrative interview method, the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985), to measure unconscious attachment models. We compared scores on the two attachment instruments to response latencies in an attachment priming task. It was shown that attachment organisation assessed by the AAI correlates with priming effects, whereas the IPPA scales were inversely or not related to priming. The results are interpreted as support for the assumption that the AAI assesses, to a certain degree, unconscious working models of attachment.

Topics in adult attachment measures

- Adult's memories of attachment to his/her parents,
- Adult's attitudes and experiences in a current romantic relationship,
- General attitudes towards adult romantic relationships,
- Adult's parenting attitudes and behaviors towards one's children are not interchangeable

Categorical or dimensional?

- Measures of attachment either assign individuals to categories of attachment style or measure the degree to which various dimensions of attachment style are present.
- Dimensional models of adult attachment converge on **two dimensions of insecurity**:
 - **Attachment anxiety** (negative sense of self) and attachment avoidance (negative sense of others). Attachment anxiety is characterized by an expectation of separation, abandonment, or insufficient love; a preoccupation with the availability and responsiveness of others; and hyperactivation of attachment behavior.
 - **Attachment avoidance** is characterized by devaluation of the importance of close relationships, avoidance of intimacy and dependence, self-reliance, and relative deactivation of attachment behavior.

Categorical or dimensional?

- Categorical measures of attachment are criticized *theoretically*, for assuming that differences among people within a category are “unimportant or do not exist” (Mikulincer & Shaver), and *analytically*, for their limited statistical power compared with dimensional measures.
- For clinical use, the categorical approach of recognizing phenomena according to their similarity to prototypic “textbook cases” is often preferred.
- Moreover, there is no consensus as to whether attachment phenomena are inherently categorical or dimensional.

Overlapping and distinct constructs

- The nomenclature used in the measurement of adult attachment is complicated. Starting with the AAI, adults are assigned to four categories: “free and autonomous with respect to attachment” (secure), “enmeshed and preoccupied with attachment” (anxious), “dismissing of attachment” (avoidant), and “cannot classify” or “unresolved with respect to trauma” (disorganized).
- The earliest categorical self-report instrument assigned people to three categories (secure, preoccupied, and avoidant), but Bartholomew and Horowitz’s subsequent four-category scheme has secure, preoccupied, avoidant/dismissing, and avoidant/fearful categories.

The Journal of Genetic Psychology, 155(4), 471–486

The Adult Attachment Interview and Questionnaires for Attachment Style, Temperament, and Memories of Parental Behavior

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ABSTRACT. Relations between Adult Attachment Interview (AAI) outcomes and data from questionnaires on attachment style, temperament, and memories of parental caregiving behavior were investigated to examine theoretical and methodological specificity of the AAI. The participants were 83 mothers of 1-year-olds. No differences between the three AAI classifications (autonomous, dismissing, or preoccupied) were found. Correlations between scales yielded few significant relations, with the exception of strong relations between some AAI scales for experiences and self-reported memories of parental behavior. The self-report questionnaires for attachment style and memories of parental behavior were therefore found to be not suitable for obtaining information about attachment working models as assessed by the AAI. Furthermore, attachment working models appear independent of temperament.

The Adult Attachment Interview and Self-Reports of Attachment Style: An Empirical Rapprochement

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University of Illinois at Urbana–Champaign

Although 10 studies have been published on the empirical overlap of the Adult Attachment Interview (AAI) and measures of self-reported attachment style, results in this literature have been inconsistently interpreted in narrative reviews. This report was designed as a rapprochement of the AAI and attachment style literatures and includes 3 studies. Study 1 (combined $N = 961$) is a meta-analytic review showing that by J. Cohen's (1992) criteria (mean $r = .09$), the association between AAI security and attachment style dimensions is trivial to small. Study 2 ($N = 160$) confirms meta-analytic results with state-of-the-art assessments of attachment security and also examines attachment dimensions in relation to the Big 5 personality traits. Finally, Study 3 is an investigation of 50 engaged couples that shows that developmental and social psychological measures of attachment security predict somewhat distinct—though theoretically anticipated—aspects of functioning in adult relationships.

Keywords: Adult Attachment Interview, self-reported attachment style, meta-analysis, Big Five personality traits, romantic relationships

Review article

Adult attachment measures: A 25-year review

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Abstract

Objective: Over the past 25 years, attachment research has extended beyond infant–parent bonds to examine dyadic relationships in children, adolescents, and adults. Attachment has been shown to influence a wide array of biopsychosocial phenomena, including social functioning, coping, stress response, psychological well-being, health behavior, and morbidity, and has thus emerged as an important focus of psychosomatic research. This article reviews the measurement of adult attachment, highlighting instruments of relevance to—or with potential use in—psychosomatic research. **Methods:** Following a literature search of articles that were related to the scales and measurement methods of attachment in adult populations, 29 instruments were examined with respect to their utility for psychosomatic researchers. **Results:** Validity, reliability, and feasibility were tabulated on 29 instruments. Eleven of the instruments with strong psychometric properties, wide use, or use in psychosomatic research are described. These include the following: Adult Attachment Interview (George, Kaplan, and

Main); Adult Attachment Projective (George and West); Adult Attachment Questionnaire (Simpson, Rholes, and Phillips); Adult Attachment Scale (and Revised Adult Attachment Scale) (Collins and Read); Attachment Style Questionnaire (Feeney); Current Relationship Interview (Crowell and Owens); Experiences in Close Relationships (Brennan, Clark, and Shaver) and Revised Experiences in Close Relationships (Fraley, Waller, and Brennan); Parental Bonding Instrument (Parker, Tupling, and Brown); Reciprocal Attachment Questionnaire (West and Sheldon-Keller); Relationship Questionnaire (Bartholomew and Horowitz); and Relationship Scales Questionnaire (Griffin and Bartholomew). **Conclusion:** In addition to reliability and validity, investigators need to consider relationship focus, attachment constructs, dimensions or categories of interest, and the time required for training, administration, and scoring. Further considerations regarding attachment measurement in the context of psychosomatic research are discussed.
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Keywords: Attachment; Adulthood; Relationships; Psychosomatic; Psychometrics; Validity

Table 1
Adult attachment instruments

Scale ^a	Authors	Number of items	Subject time ^b	Scoring time ^b	Relationship focus	Yields categories/dimensions	Categories/dimensions measured	Reliability ^c	Validity ^d
<i>Interviewer-assessed instruments</i>									
Adult Attachment Interview (AAI)	George et al. [17], Fonagy et al. [26,44,45], Kobak [42], Fyffe and Waters [43], Grossmann et al. [46]	20	L	VL	Parents	C	Secure/autonomous, dismissing, preoccupied, unresolved/disorganized with respect to trauma	+++	+++
Adult Attachment Interview as a Questionnaire (AAIQ)	Crandell et al. [109]	20	L	L	Parents	C	Secure/autonomous, dismissing, preoccupied, unresolved/disorganized with respect to trauma	++	++
Adult Attachment Projective (AAP)	George and West [23] and Buchheim et al. [52]	8	L	L	Nonspecific	C	Secure, dismissing, preoccupied, unresolved	+	++
Attachment Style Interview (ASI)	Bifulco et al. [114]	NK	VL	VL	Close relationships	C	Secure, enmeshed, fearful, angry/dismissive, withdrawn	+	++
Couple Attachment Interview (CAI)	Cohn and Silver [101]	29	VL	VL	Partner	C	Secure, dismissing, preoccupied	++	++
Current Relationship Interview (CRI)	Crowell and Owens [47]	22	VL	VL	Couples	C	Secure, insecure/dismissing, insecure/preoccupied	++	+++
Marital Attachment Interview (MAI)	Dickstein et al. [122]	16	L	VL	Spouse	C	Secure, dismissing, preoccupied, unresolved with respect to loss or trauma, cannot classify	+	+
Secure Base Scoring System (SSBS)	Crowell et al. [49]	8	VL	VL	Couples	D	Secure base use, secure base support	++	+

Table 1
Adult attachment instruments

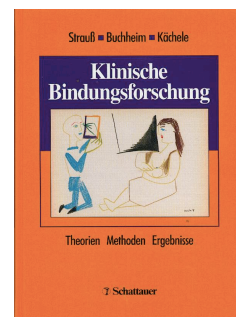
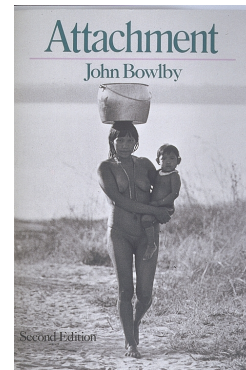
Scale ^a	Authors	Number of items	Subject time ^b	Scoring time ^b	Relationship focus	Yields categories/dimensions	Categories/dimensions measured	Reliability ^c	Validity ^d
<i>Self-report questionnaires</i>									
Adult Attachment Styles	Hazan and Shaver [19]	1	VS	VS	Intimate relationships	C	Secure, avoidant, anxious/ambivalent	++	+
Adult Attachment Questionnaire (AAQ)	Simpson [58]	17	S	VS	Partner	D	Attachment anxiety, attachment avoidance	++	+++
Avoidant Attachment Questionnaire for Adults (AAQA)	Simpson et al. [61]	13							
Avoidant Attachment Questionnaire for Adults (AAQA)	West and Sheldon-Kellor [82]	22	S	VS	General	D	Maintains distance in relationships, priority on self-sufficiency, attachment relationship is a threat to security, desire for close affectional bonds	+	+
Adult Attachment Scale (AAS) and Revised-Adult Attachment Scale (RAAS)	Collins and Read [56] Collins [57]	21 18	S	VS	Partner	D	Comfort with closeness, comfort with depending on others, anxious concern about abandonment	++	+++
Attachment History Questionnaire (AHQ)	Pottharst [132]	51	L	VS	Partner	C and D	Categories: secure, insecure; dimensions: secure attachment, parental discipline, peer system	+	++
Attachment and Object Relations Inventory (AORI)	Buelow et al. [135]	75	L	VS	Parents, peers, partners, and self	D	View of self as: warm, secure, interdependent, not anxious versus distant, dependent/preoccupied, anxious; view of others as: emotionally accessible, responsive versus not accessible, unresponsive	+++	++
Attachment Style Questionnaire (ASQ)	Feeney et al. [73]	40	S	VS	Close relationships	D	Discomfort with closeness, need for approval, preoccupation with relations, viewing relationships as secondary to achievement, lack of confidence	++	++

Table 1
Adult attachment instruments

Scale ^a	Authors	Number of items	Subject time ^b	Scoring time ^b	Relationship focus	Yields categories/dimensions	Categories/dimensions measured	Reliability ^c	Validity ^d
Continued Attachment Scale (CAS)	Berman et al. [138]	12	VS	VS	Parents	D	Cognitive and behavioral components of parental attachment	+	++
Client Attachment to Therapist Scale (CATS)	Mallinckrodt et al. [141]	36	S	VS	Therapist	C	Secure, avoidant/fearful, preoccupied/merger	++	+
Experiences in Close Relationships (ECR) and Experiences in Close Relationships-Revised (ECR-R)	Brennan et al. [59] Fraley and Shaver [27]	36 36	S	VS	Partner (or general)	D	Attachment anxiety, attachment avoidance	++	+++
Measure of Attachment Qualities (MAQ)	Carver [145]	14	VS	VS	General	C	Security, avoidance, ambivalence/worry, ambivalence/merger	++	+
Mother Father Peer Scale (MFPS)	Epstein [147]	70	L	VS	Parents and peers	D	Acceptance/rejection, independence/overprotection, defensive idealization	+	++
Maternal Separation Anxiety Scale (MSAS)	Hock et al. [149]	35	S	VS	Child	D	Maternal separation anxiety, perception of separation effects on child, employment-related separation concerns	++	++
Parental Attachment Questionnaire (PAQ)	Kenny [150]	55	L	VS	Parents (of adolescents)	D	Affective quality of relationships, fostering of autonomy, provision of emotional support	++	++
Parents of Adolescents Separation Anxiety Scale (PASAS)	Hock et al. [153]	35	S	VS	Adolescent children	D	Anxiety about adolescent distancing, comfort with secure base role	+	++
Parenting Bonding Instrument (PBI)	Parker et al. [84,85]	50	L	VS	Parents	D	Parental care, parental protection	++	+++
Reciprocal Attachment Questionnaire for Adults (RAQA)	West et al. [80], West and Sheldon [81], and West and Sheldon-Kellor [82,83]	15	S	VS	Most important attachment figure	D	Proximity seeking, separation protest, feared loss, perceived availability, angry withdrawal; compulsive: care giving, self-reliance, and care seeking	++	++
Reciprocal Questionnaire (RQ)	Bartholomew and Horowitz [21]	4	VS	VS	Partner	C and D	Secure, preoccupied, dismissing, fearful	+	++
Relationship Scales Questionnaire (RSQ)	Griffin and Bartholomew [71]	30	S	VS	Partner	C and D	Categories: secure, preoccupied, fearful, dismissing; dimensions: model of self and model of others	+	++
Revised Inventory of Parental Attachment (R-IPA)	Johnson et al. [160]	30	S	VS	Children	D	Trust/avoidance, symptom distress, social role, interpersonal relations, physical aggression	+	+
Vulnerable Attachment Style Questionnaire (VASQ)	Bifulco et al. [22]	23	S	VS	Support	D	Insecurity, proximity seeking	++	++

Application of Attachment Theory

- Developmental Psychology
 - Transgenerational Transmission of Attachment
- Clinical Psychology and Psychotherapy
 - Clinical Implications of Attachment Patterns
 - Therapeutic Relationship
 - Measuring of Change
- Neurobiology
 - Animal Research
 - Research in Humans



Clinical application

- None of the measures of adult attachment in current use was developed for clinical research.
- However there is evidence to support the theoretically derived links between the quality of patient–provider relationship, health care utilization, and other medical and psychotherapeutic outcomes

AAI – clinical application

- Rigorous psychometric testing and meta-analyses of the AAI demonstrate stability and discriminant and predictive validity in both clinical and nonclinical populations.
- In a recent meta-analysis of 61 clinical samples, strong associations were found between psychiatric diagnoses and attachment insecurity. Studies of adult attachment representations have demonstrated significant associations between insecurity and clinical status in patients with anxiety disorders, borderline personality, and violence. Patients with borderline personality disorder or histories of abuse or suicidality often have unresolved/disorganized and unclassifiable transcripts [35].

Attachment & Human Development
Vol. 11, No. 3, May 2009, 223–263

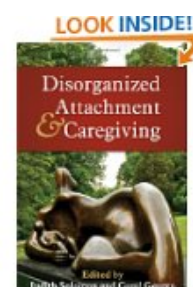
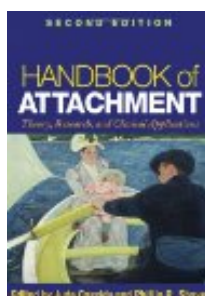
 **Routledge**
Taylor & Francis Group

The first 10,000 Adult Attachment Interviews: distributions of adult attachment representations in clinical and non-clinical groups

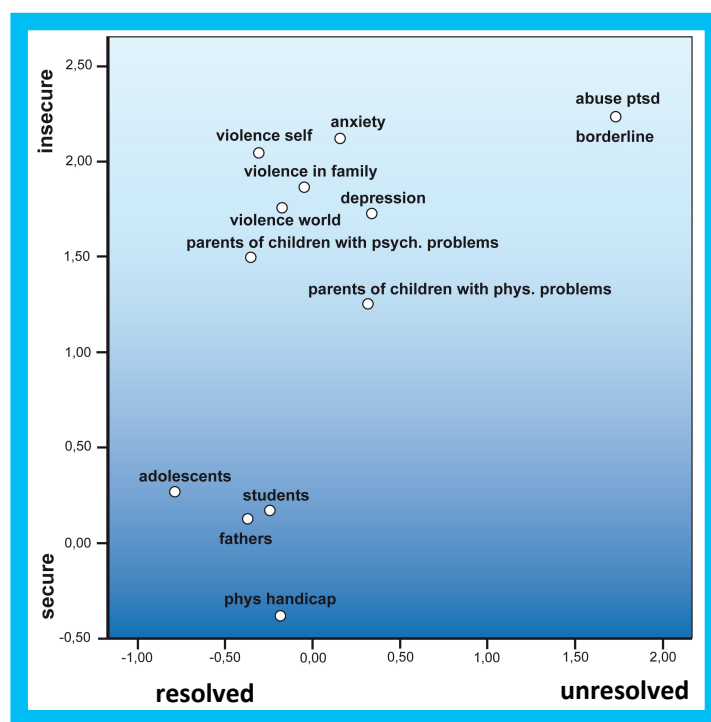
Marian J. Bakermans-Kranenburg and Marinus H. van IJzendoorn*

Centre for Child and Family Studies, Leiden University, The Netherlands

(Received 18 October 2008; final version received 12 February 2009)

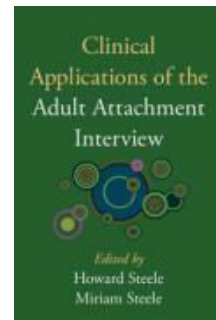


More than 200 adult attachment representation studies, presenting more than 10,500 Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985) classifications, have been conducted in the past 25 years. In a series of analyses on the distributions of the AAI classifications in various cultural and age groups, fathers, and high-risk and clinical samples, we used the distribution of the combined samples of North American non-clinical mothers (23% dismissing, 58% secure, 19% preoccupied attachment representations, and 18% additionally coded for unresolved loss or other trauma) to examine deviations from this normative pattern, through multinomial tests and analyses of correspondence. The analyses were restricted to AAI classifications coded according to the Main, Goldwyn, and Hesse (2003) system. We did not find gender differences in the use of dismissing versus preoccupied attachment strategies, and the AAI distributions were largely independent of language and country of origin. Clinical subjects showed more insecure and unresolved attachment representations than the norm groups. Disorders with an internalizing dimension (e.g., borderline personality disorders) were associated with more preoccupied and unresolved attachments, whereas disorders with an externalizing dimension (e.g., antisocial personality disorders) displayed more dismissing as well as preoccupied attachments. Depressive symptomatology was associated with insecurity but not with unresolved loss or trauma, whereas adults with abuse experiences or PTSD were mostly unresolved. In order to find more reliable associations with clinical symptoms and disorders, future AAI studies may make more fruitful use of continuous AAI scales in addition to the conventionally used categorical classifications.



Bakermans-Kranenburg & van IJzendoorn (2009) The first 10,000 Adult Attachment Interviews: distributions of adult attachment representations in clinical and non-clinical groups. *Attachment & Human Development* 3: 223-263

Clinical Applications of the Adult Attachment Interview



Edited by

HOWARD STEELE
MIRIAM STEELE

Foreword by JUNE SROUFE

Afterword by DEBORAH JACOBVITZ

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72 Spring Street, New York, NY 10012
www.guilford.com

July 1998

*The value of this manual is likely to depend upon accompanying training by the authors,
or by others whom they have trained and found to be reliable*

REFLECTIVE-FUNCTIONING MANUAL

Version 5

FOR APPLICATION TO ADULT ATTACHMENT INTERVIEWS

Peter Fonagy, Mary Target, Howard Steele and Miriam Steele

Demand Questions

-why did your parents behave as they did during your childhood?

-do you think your childhood experiences have an influence on who you are today?

-any setbacks?

-did you ever feel rejected as a child?

-in relation to losses, abuse or other trauma, how did you feel at the time and how have your feelings changed over time?

-have there been changes in your relationship with your parents since childhood?

Coding Scales – 1 → 9

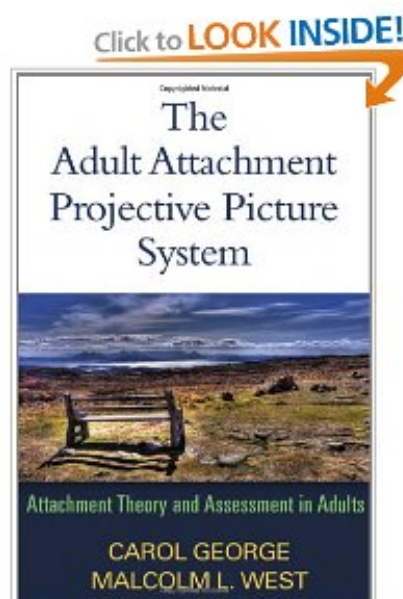
• RF: -1

- Response must:
- be distinctly anti-reflective (i.e., hostile or actively evasive, usually because question
- is perceived as an assault or attack)
- *or*
- bizarre (impossible to understand without making the assumption of irrationality on
- the part of the subject)
- *or*
- inappropriate in the context of the interview

• RF: 9

- Transcript shows exceptional sophistication, is commonly surprising, quite complex or
- elaborate and consistently manifests reasoning in a causal way using mental states.
- Shows consistent reflective stance across all contexts.
-

- ***Research Summary will be on Friday by Pia Tohme***



AAP Classification System

George & West, 1999, 2012
www.attachmentprojective.com

- Agency of Self
 - Internalized secure base, capacity to act
- Relationships with Others
 - Connectedness: The story character is connected to others in a behavioral system relationship = attachment-caregiving, friend-peer, romantic-marriage
 - Synchrony: Goal-corrected partnership = sensitive care or mutual enjoyment (Bowlby, 1969)
- Defensive Processes
 - patterns of deactivation, cognitive disconnection (ambivalence), segregated systems (attachment fears) in all attachment stories

AAP Validity

George & West (2012), Buchheim & George (2011)

- Sample = 144 adults (18-64; 100 women, av. 36 yrs., 44 men av. 26 yrs.); Canada (51%) + US
- Interjudge reliability: 4 groups (F, Ds, E, U)
 - Judges 1-2, 90% ($\kappa = .85$)
 - Judges 1-3, 85% ($\kappa = .79$)
- Concurrent validity → AAI (George, Kaplan & Main, 1984/1985/1996)
 - concurrent reliability: 4 groups
 - 90% ($\kappa = .84$)
- Discriminant validity
 - No significant differences among AAP classification groups on verbal intelligence or social desirability

Adult Attachment Projective Picture System

George et al. (1999); George & West 2012)

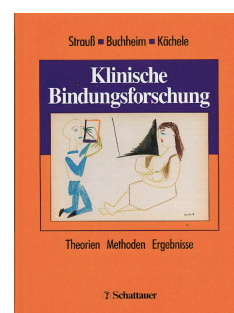
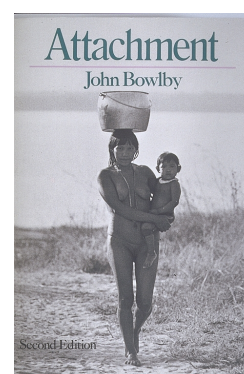
Feasible for an experimental setting:

- **AAP in an fMRI environment**
 - Buchheim, Walter et al. 2006, Psychopathology;
 - Buchheim, Walter et al. 2008, Psychiatry Res: Neuroimaging
- **AAP and Oxytocin**
 - Buchheim, Heinrichs, Gündel, 2009, PNEC

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Application of Attachment Theory

- **Developmental Psychology**
 - Transgenerational Transmission of Attachment
- **Clinical Psychology and Psychotherapy**
 - Clinical Implications of Attachment Patterns
 - Measuring of Change
 - Therapeutic Relationship
- **Neurobiology**
 - Animal Research
 - Research in Humans



Attachment and Psychosomatic Medicine: Developmental Contributions to Stress and Disease

ROBERT G. MAUNDER, MD, FRCP(C), AND JONATHAN J. HUNTER, MD, FRCP(C)

Objective: The object of this study was to evaluate the evidence linking attachment insecurity to illness. Attachment theory describes lifelong patterns of response to threat that are learned in the interaction between an infant and his or her primary caregiver. Despite its biopsychosocial domain, attachment theory has only recently been applied to psychosomatic medicine. **Method:** MEDLINE and PsychInfo databases were searched from 1966 to 2000 for English language papers with key words "attachment" and "object relations." Papers and their cited references were reviewed if they were directly related to physical illness, symptoms, or physiology. A hypothetical causal model was developed. **Results:** Direct and indirect evidence from survey studies supports an association between attachment insecurity and disease. Animal studies and human experiments suggest that attachment contributes to individual differences in physiological stress response. There is also less robust support for insecure attachment leading to symptom reporting and to more frequent health risk behaviors, especially substance use and treatment nonadherence. Evidence supports the prediction from attachment theory that the benefits of social support derive more from attachment relationships than nonattachment relationships. **Conclusions:** Although the available data are suggestive rather than conclusive, the data can be organized into a model that describe attachment insecurity leading to disease risk through three mechanisms. These are increased susceptibility to stress, increased use of external regulators of affect, and altered help-seeking behavior. This model warrants further prospective investigation. **Key words:** Attachment, disease model, stress, development, biopsychosocial.

ATTACHMENT AND DISEASE

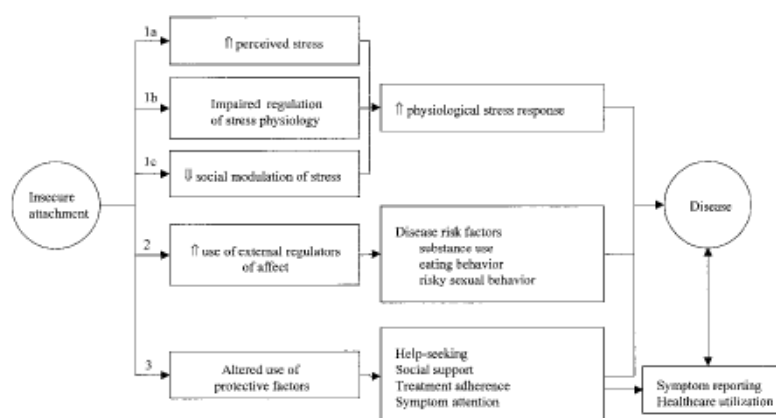


Fig 1. Model of hypothesized mechanisms by which attachment security could contribute to disease.

Discussion

- This review finds supportive evidence for the hypothesis that attachment insecurity contributes to physical illness especially psychosomatic disorders:
 - *Attachment insecurity may increase perceived stress*
 - *Insecure Attachment may alter use of protective Factors*
 - *Thus attachment style may be a predictor of stress vulnerability and disease risk for a number of diseases*

Adult Attachment Patterns and Individual Psychotherapy: A Review

Sarah I.F. Daniel

Attachment theory provides an empirically grounded framework for understanding important aspects of interpersonal functioning in children as well as adults. Recently attachment theory has found increasing use within the field of individual psychotherapy with adults. This article outlines the theory and measurement of individual differences in adult attachment, and the relevance of such *adult attachment patterns* to psychotherapy. It then offers a review and discussion of empirical findings regarding the effects of client and therapist attachment patterns on process and outcome in individual psychotherapy with adults. Empirical studies have linked adult attachment patterns to differences in client and therapist in-treatment behaviour, to differences in the quality and development of the therapeutic alliance, and to differences in therapeutic outcome. Although empirical studies on the subject are still few in number, evidence is emerging for the importance of adult attachment patterns in the therapeutic relationship.

(Reprinted with permission from Clinical Psychology Review 26 (2006) 968–984)

INTERDISCIPLINARY DIALOGUES

Use of the Adult Attachment Interview to measure process and change in psychotherapy

HOWARD STEELE¹, MIRIAM STEELE¹, & ANNE MURPHY²

¹*Department of Psychology, New School for Social Research, New York;* ²*Early Childhood Center for Babies, Toddlers and Families, Albert Einstein School of Medicine, Bronx, New York, USA*

(Received 18 January 2008; revised 29 October 2008; accepted 3 November 2008)

Abstract

The Adult Attachment Interview (AAI), developed and extensively tested in the domain of developmental psychology, has relevance to psychotherapy research. The authors compare and contrast the ways that social psychologists and developmental psychologists have operationalized the concept of attachment security and discuss corresponding implications for psychotherapy research. In addition, they provide an overview of the AAI and its development, reliability, and validation in developmental psychology and summarize recent work linking AAI responses with distinctive types of psychopathology. A summary of recent work showing the AAI to be a useful indicator of positive outcome in psychotherapy for adults with diverse problems, including depression, borderline personality disorder, and posttraumatic stress disorder, is provided.

Change in Attachment Patterns and Reflective Function in a Randomized Control Trial of Transference-Focused Psychotherapy for Borderline Personality Disorder

Kenneth N. Levy, Kevin B. Meehan,
Kristen M. Kelly, Joseph S. Reynoso, and
Michal Weber
City University of New York

John F. Clarkin and Otto F. Kernberg
Joan and Sanford I. Weil Medical College of Cornell University

Changes in attachment organization and reflective function (RF) were assessed as putative mechanisms of change in 1 of 3 year-long psychotherapy treatments for patients with borderline personality disorder (BPD). Ninety patients reliably diagnosed with BPD were randomized to transference-focused psychotherapy (TFP), dialectical behavior therapy, or a modified psychodynamic supportive psychotherapy. Attachment organization was assessed with the Adult Attachment Interview and the RF coding scale. After 12 months of treatment, participants showed a significant increase in the number classified secure with respect to attachment state of mind for TFP but not for the other 2 treatments. Significant changes in narrative coherence and RF were found as a function of treatment, with TFP showing increases in both constructs during treatment. No changes in resolution of loss or trauma were observed across treatments. Findings suggest that 1 year of intensive TFP can increase patients' narrative coherence and RF. Future research should establish the relationship between these 2 constructs and relevant psychopathology, identify treatment components responsible for effecting these changes, and examine the long-term outcome of these changes.

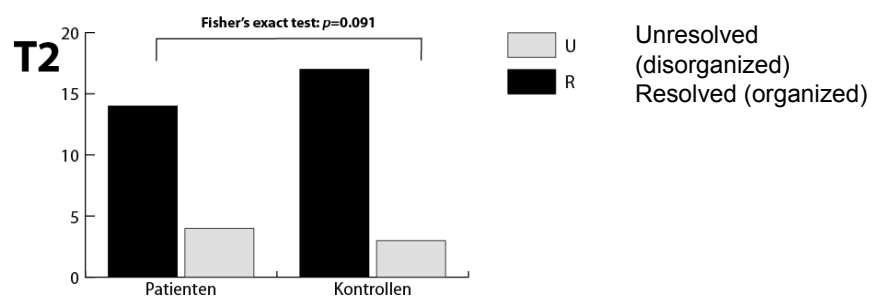
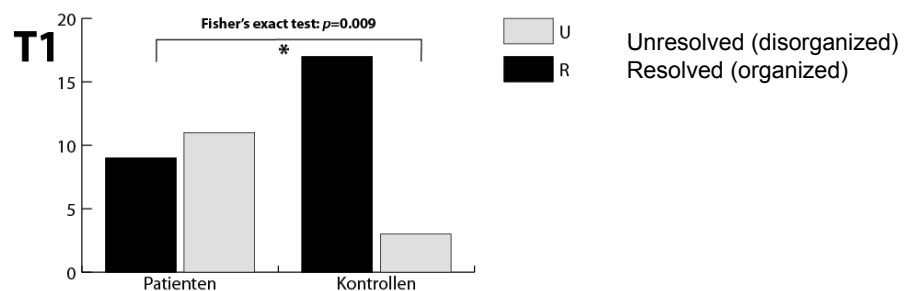
Keywords: attachment, reflective function, borderline personality disorder, randomized controlled trial

Table 5
Change in RF, Coherence, and Lack of Resolution of Loss and Trauma From Time 1 to Time 2

Measure	TFP (N = 22)				DBT (N = 15)				SPT (N = 23)			
	Time 1		Time 2		Time 1		Time 2		Time 1		Time 2	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
RF	2.86	1.16	4.11	1.38	3.31	0.95	3.38	1.15	2.80	0.80	2.86	1.28
Coherence	2.93	1.34	4.02	1.69	3.00	1.64	3.25	1.41	3.25	1.33	3.16	1.20
Resolution of Loss	2.39	2.62	1.80	2.11	2.63	2.80	2.78	3.02	1.52	1.98	1.68	2.08
Resolution of Trauma	2.09	2.22	1.41	1.48	2.44	2.54	2.06	1.96	1.61	2.29	1.23	2.10

Note. TFP = transference-focused psychotherapy; DBT = dialectical behavior therapy; SPT = supportive psychotherapy; RF = reflective function.

Change of attachment status after 15 months of treatment



McNemar Test, verbessert U→R : verschlechtert R→U 7:0, $p=.008^{**}$

Buchheim et al. (2012) Bindung, Psychotherapie und Bildgebung: Einblick in eine neurowissenschaftliche Studie zur psychoanalytischen Psychotherapie bei chronisch depressiven Patienten.

In: Böker H, Seifritz E (Hrsg) Psychotherapie und Neurobiologie: Ein Blick in die Zukunft. Huber, Bern

Attachment Style

Kenneth N. Levy, William D. Ellison, Lori N. Scott, and Samantha L. Bernecker

Pennsylvania State University

Attachment theory, developed by Bowlby to explain human bonding, has profound implications for conducting and adapting psychotherapy. We summarize the prevailing definitions and measures of attachment style. We review the results of three meta-analyses examining the association between attachment anxiety, avoidance, and security and psychotherapy outcome. Fourteen studies were synthesized, which included 19 separate therapy cohorts with a combined sample size of 1,467. Attachment anxiety showed a d of $-.46$ with posttherapy outcome, while attachment security showed a d of $.37$ association with outcome. Attachment avoidance was uncorrelated with outcome. The age and gender composition of the samples moderated the relation between attachment security and outcome: samples with a higher proportion of female clients and a higher mean age showed a smaller relation between security and outcome. We discuss the practice implications of these findings and related research on the link between attachment and the therapy relationship. © 2010 Wiley Periodicals, Inc. *J Clin Psychol*: In Session 67:193–203, 2011.

Keywords: psychotherapy; client characteristics; attachment; meta-analysis; therapy relationship; treatment adaptation

Summary

- Clients' attachment security tends to be positively associated with therapeutic alliance according to a recent meta-analysis (Diener, Hilsenroth, & Weinberger, 2009).
- Perhaps the capacity to develop a positive therapeutic alliance is enhanced by a client's level of attachment security



Client self rated adult attachment patterns and the therapeutic alliance: A systematic review

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Therapeutic alliance
Attachment

ABSTRACT

Attachment theory has been proposed as a suitable framework within which to understand and explore the therapeutic alliance. This review systematically explores research that has examined the relationship between clients' self reported attachment patterns and the therapeutic alliance. Methodological characteristics and study findings are reviewed and discussed with the aim of concluding whether assessing clients' attachment patterns would be beneficial to therapy. In spite of inconsistencies with regards to the measurement and conceptualisation of attachment and the alliance, the evidence suggests that clients who rate themselves as having a more secure attachment pattern are likely to rate the alliance as stronger. The implications of this for therapeutic practice are discussed.

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Table 1
Descriptions of the 18 studies.

Study number & reference	Country	Sample population & setting	Therapy	Attachment measure	Alliance measure	Level of analysis
1. Lindgren, Barber, and Sandahl (2008)	Sweden	Outpatients suffering burn out depression	Group manualised psychodynamic therapy total of 18 × 90 minute sessions	RSQ (omitted secure subscale)	CALPAS-G client rated (computed total score & mean score over sessions 3, 5, & one other session & development over sessions 3–5)	Individual level (N = 18)
2. Romano, Fitzpatrick, and Janzen (2008)	Canada	Volunteer students on a counselling course	One to one common factors counselling on average 14 sessions	ECRS pre-therapy CATS after each session	WAI client rated (computed mean over session 5–9 on total, bond, goal & task)	Individual level (N = 59)
3. Tereno, Soares, Martins, Celani, and Sampaio (2008)	Portugal	Inpatient females with eating disorders & their parents	–	AAS-R	WAI (only bond subscale used)	Group level (anorexic N = 30, bulimic N = 27)
4. Janzen, Fitzpatrick, and Drapeau (2008)	US	Undergraduate students on counselling course at university counselling centre	One to one common factors counselling total of 12–15 sessions	ECRS-pre-therapy CATS-after session 1–4 (computed composite avoidant-fearful/secure subscale)	SIS client rated (analysed scores from sessions before, during and after client identified a relationship building incident)	Individual level (N = 30)
5. Goldman and Anderson (2007)	US	University students at a university counselling centre	One to one mostly eclectic therapy, 2 × CBT, 3 × unspecified	AAS revised-pre-therapy (computed single security dimension)	WAI client rated (used total score from sessions 1–3)	Individual level (N = 30)
6. Tasca, Balfour, Ritchie, and Bissada (2007)	US	Females suffering with binge eating disorder at hospital eating disorders clinic	Group manualised PIP and CBT total of 17 sessions	ASQ pre-therapy (used item means from four scales only: preoccupied, discomfort with closeness, need for approval and relationships as secondary)	CALPAS-G client rated (used total item mean score & growth over sessions 1–16)	Group level (GPIP n = 33, GCBT n = 32)
7. Fuertes et al. (2007)	US	On going therapy dyads	One to one therapy various orientations median of 16 sessions	ECRS therapist rated only CATS	WAI -12 Client & therapist rated (used total score from ratings after sessions 1–3)	Individual & dyad level (N = 59)

8. Johnson, Ketring, Rohacs, and Brewer (2006)	US	Families in ongoing therapy taking place at the family home	Eco-systemic family therapy in most cases 2 sessions a week for 6–8 weeks	Inventory of Parent and Peer Attachment–adolescent rated The Revised Inventory of Parent Attachment–parent rated RSQ pre-therapy	Family therapy alliance scale (used task, bond, goal subscales rated at the end of therapy)	Individual level (mothers $n = 26$, fathers $n = 14$ and adolescents $n = 21$)
9. Bruck, Winston, Aderholt, and Muran (2006)	US	Outpatients with a mixture of mood & anxiety disorders and personality disorders	One to one manualised short-term dynamic therapy & CBT total of 30 sessions		WAI-12 therapist & client rated (used overall mean score from sessions 1–6)	Individual level ($N = 26$)
10. Meier, Donmall, Barrowclough, McElduff, and Heller (2005)	UK	Residential inpatients in rehabilitation suffering with drug misuse	One to one in a therapeutic community 4–8 h a day of 1–1 and group therapy for first 3 weeks	RQ modified pre-therapy (used attachment security index score only)	WAI-12 therapist & client rated (used total scores from first 3 weeks)	Individual level ($N = 187$)
11. Mallinckrodt, Porter, and Kivlighan (2005)	Columbia	Clients in therapy at a university counselling centre	One to one had received 4–8 sessions at time of data collection	ECRS CATS	WAI client rated (used total, bond, task and goal rated after one session in mid therapy)	Individual level ($N = 38$ for study 1, also reanalysed data for study 2, $N = 44$)
12. Reis and Grenyer (2004)	Australia	Outpatients with major depression at university counselling centre	One to one supportive expressive dynamic psychotherapy total of 16 sessions	RQ-pre-therapy	WAI client rated (summed and averaged all items as rated at end of session 3)	Individual level ($N = 58$)
13. Sauer, Lopez, and Gormley (2003)	US	University and community counselling centres	One to one, 4× dynamic, 5× CBT, 5× eclectic, 3× systemic therapy at least 7 sessions	AAI-after the first session	WAI client and therapist rated (used total score after sessions 1,4 and 7)	Individual level ($N = 17$)
14. Parish and Eagle (2003)	US	Doctoral students in therapy and other outpatients at university	One to one psychodynamic/analysis > 6 months	Components of Attachment Questionnaire RQ	WAI-12 client rated (used total score only)	Individual level ($N = 105$)

Table 1 (continued)

Study number & reference	Country	Sample population & setting	Therapy	Attachment measure	Alliance measure	Level of analysis
17. Satterfield and Lyddon (1995)	US	Outpatients at university counselling centre	One to one	AAS pre-therapy	WAI-client rated (used total score after session 3)	Individual level ($N = 60$)
18. Mallinckrodt, Coble, and Gantt (1995)	US	Mostly outpatients from university/college counselling centres, a hospital clinic & a training clinic	One to one	AAS not given at one set time point	WAI- client rated (used total, task, bond and goal at various time points)	Individual level ($N = 76$)

Note. – = not enough information provided, PIP = Psychodynamic Interpersonal psychotherapy, CBT = Cognitive Behavioural Therapy, CAT = Cognitive Analytic Therapy, AAS = Adult Attachment Scale, ECRS = Experiences in Close Relationships Scale, RQ = Relationship Questionnaire, RSQ = Relationship Styles Questionnaire, CATS = Client Attachment to Therapist Scale, ASQ = Attachment Styles Questionnaire, WAI = Working Alliance Inventory, WAI-12 = Working Alliance Inventory Short Form, SIS = Session Impact Scale, CALPAS-G = Californian Psychotherapy Alliance Scale Group version.

Conclusions

- The findings of this systematic review show that there is strong evidence to link a client's pre-therapy secure attachment to a good quality alliance that is formed within therapy. Clients who rated themselves higher on dimensions such as secure formed better quality alliances with their therapist. This review also indicates that clients who rate themselves as lower on these dimensions will form weaker alliances in therapy.

Clinical implications

- Assess the patient's attachment style. Attachment style can influence the psychotherapy process, the responses of both patients and therapists, the quality of the therapeutic alliance, and the ultimate outcome of treatment.
- Formal interviewing or use of reliable self-report measures can be useful as part of the assessment process

Clinical implications

- Understanding a patient's attachment organization will provide important clues as to how the patient is likely to respond in treatment and to the therapist.
- Expect longer and more difficult treatment with anxiously attached patients but quicker and more positive outcome with securely attached patients

Clinical implications

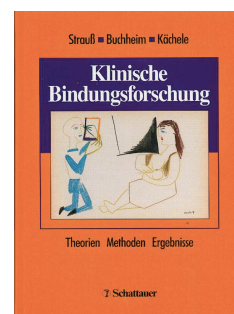
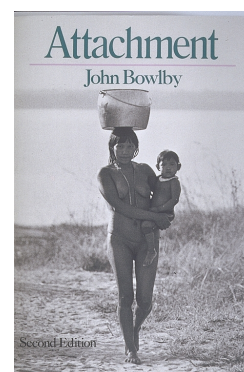
- Knowledge of the patient's attachment style can help the therapist anticipate how the patient may respond to the therapist's interventions and guide the therapist in calibrating to the patient's interpersonal style.
- That is, if the patient is dismissing in his or her attachment, then the therapist may need to be more engaged. In contrast, if the patient is preoccupied in his or her attachment, then the therapist should consider a stance designed to help the patient contain his or her emotional experience

Patients' attachment to the therapist?

- *We hear more about that research and a potential solution how to measure that on Friday (Alessandro Talia)*

Application of Attachment Theory

- Developmental Psychology
 - Transgenerational Transmission of Attachment
- Clinical Psychology and Psychotherapy
 - Clinical Implications of Attachment Patterns
 - Measuring of Change
 - Therapeutic Relationship
- Neurobiology
 - Animal Research
 - Research in Humans



The influence of psychodynamically oriented therapists' attachment representations on outcome and alliance in inpatient psychotherapy abstract

HENNING SCHAUENBURG¹, ANNA BUCHHEIM², KATHRIN BECKH³,
TOBIAS NOLTE⁴, KATJA BRENK-FRANZ⁵, FALK LEICHSENRING⁶,
MICHA STRACK⁷, & ULRIKE DINGER¹

N = 1513 Patienten		
N = 31 Therapeuten		
Patienten pro Therapeut	13-104	
Behandlungsdauer	85.2 Tage	SD 38.6
GSI bei Aufnahme	1.46	SD 0.65
GSI bei Entlassung	0.95	SD 0.66
Effektstärke	d = 0.77	
Therapeuten werden zufällig zugewiesen, sehr geringe Abbruchquote		

Bindungsmuster AAI Therapeuten (N=31)	4 Muster	
Sicher	19	(61%)
Unsicher-distanziert	2	(6%)
Unsicher-verstrickt	3	(10%)
Unverarbeitetes Trauma	7	(23%)

Matching the Patient to the Therapist

The Roles of the Attachment Status and the Helping Alliance

Petrowski, Nowacki, Pokorny, & Buchheim (2011)
Journal of Nervous and Mental Disease

Matching the Patient to the Therapist

The Roles of the Attachment Status and the Helping Alliance

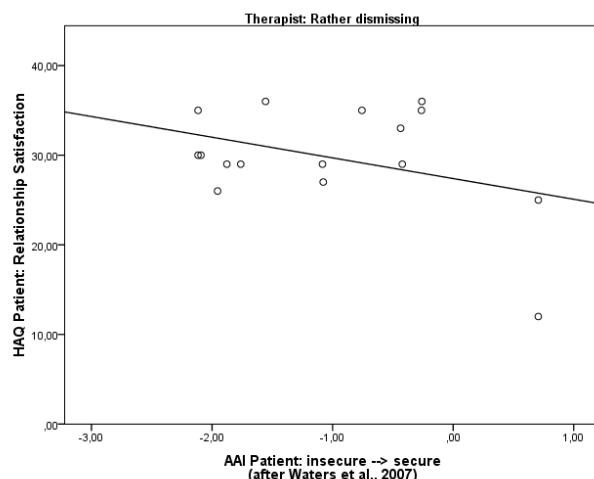
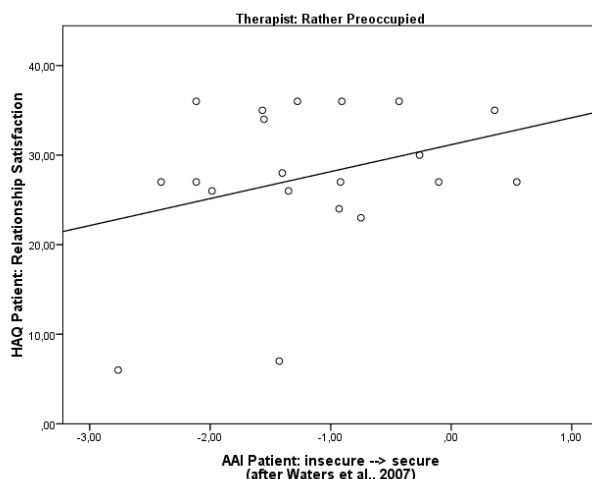
Katja Petrowski, Dipl-Psych,* Katja Nowacki,† Dan Pokorny,‡ and Anna Buchheim§

Abstract: The helping alliance between patient and therapist is essential in the psychotherapeutic relationship. Recently, the links between patients' attachment and therapeutic alliance were examined. So far, there has been no published study that matched the patients and the patients' attachment representation to examine its role on the therapeutic relationship. Working along Bowlby's assumptions, a dissimilar matching of the attachment status to both was assumed to positively effect the helping alliance. In our study, the attachment representations of 19 psychotherapists and 59 anxiety patients (Structured Clinical Interview for *DSM* Axis I Disorders) were measured using the Adult Attachment Interview, using the dimensional scales by Waters et al. (*Scoring secure versus insecure and dismissing versus preoccupied attachment as continuous variables: Discriminant analysis using AAI state of mind scales; unpublished manuscript*). The helping alliance was assessed using the Helping Alliance Questionnaire. As expected, anxiety patients with a more insecure attachment with highly preoccupied and disorganized features evaluated the relationship with a more dismissing therapist as more helpful than that with a more preoccupied therapist. The results indicate the importance of a matching attachment status to a fruitful helping alliance in psychotherapy.

(*J Nerv Ment Dis* 2011;199: 00–00)

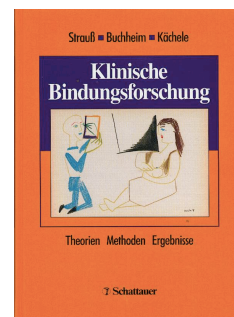
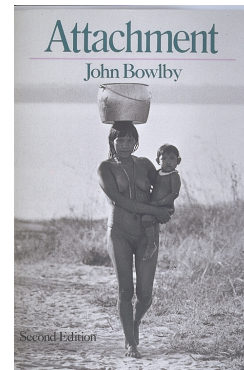
Relationship Satisfaction

- Therapist: Rather Preoccupied ($n=20$, $r=.32$)
- Therapist: Rather Dismissing ($n=16$, $r=-.37$)



Application of Attachment Theory

- Developmental Psychology
 - Transgenerational Transmission of Attachment
- Clinical Psychology and Psychotherapy
 - Clinical Implications of Attachment Patterns
 - Measuring of Change
 - Therapeutic Relationship
- Neurobiology
 - Animal Research
 - Research in Humans



Anna Buchheim, Svenja Taubner, Ella Fizke, Tobias Nolte

Bindung und Neurobiologie: Ergebnisse bildgebender Verfahren

Attachment and Neurobiology: Neuroimaging results

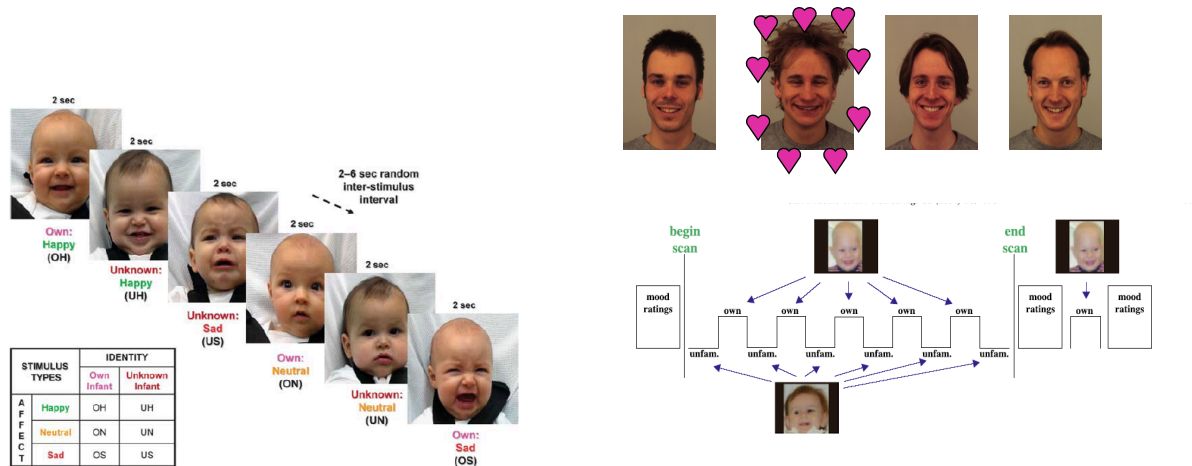
15 studies mostly in
healthy participants

Summary

This article reviews the most recent findings on attachment and neurobiology in functional magnetic resonance imaging (fMRI) research. As this synopsis will show, researchers investigated very different *systems*, often by very different means and a variety of paradigms ranging from the presentation of individual photos of loved and unknown faces to more complex approaches (reflecting on attachment-relevant events, priming experiments, talking about attachment-relevant situations). At present, the delineation of *one* neuronal network of attachment is not yet possible. The diversity of applied paradigms does not allow for a comparison of results. However, there is evidence across studies that brain regions such as the amygdala and the orbito-/prefrontal cortex are involved in processing attachment-related stimuli. In addition, there are convergent results suggesting that when care-giving is addressed dopamine-associated regions of the reward system differing from the neural correlates of the postulated “attachment circuitry” are active. Therefore, it seems necessary to test the different constructs on the same person. In addition, it seems promising to measure the indirect influence of attachment on stress and emotion regulation. This should include experimental manipulations that integrate contextual factors when relating attachment to other constructs.

fMRI and Attachment

- Visual individual stimuli (pictures, faces) or passively presented scripts
 - (e. g. Bartels & Zeki 2004, Nitschke et al. 2004, Strathearn et al., 2009)



- Examination of social attachment (maternal or romantic love) mostly in healthy samples

Talking about attachment

- *Attachment theory and research has been built on the discourse analysis of attachment narratives*

Psychopathology

Original Paper

Psychopathology 2006;39:144–152
DOI: [10.1159/000091800](https://doi.org/10.1159/000091800)

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Measuring Attachment Representation in an fMRI Environment: A Pilot Study

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Neural correlates of attachment trauma in borderline personality disorder: A functional magnetic resonance imaging study

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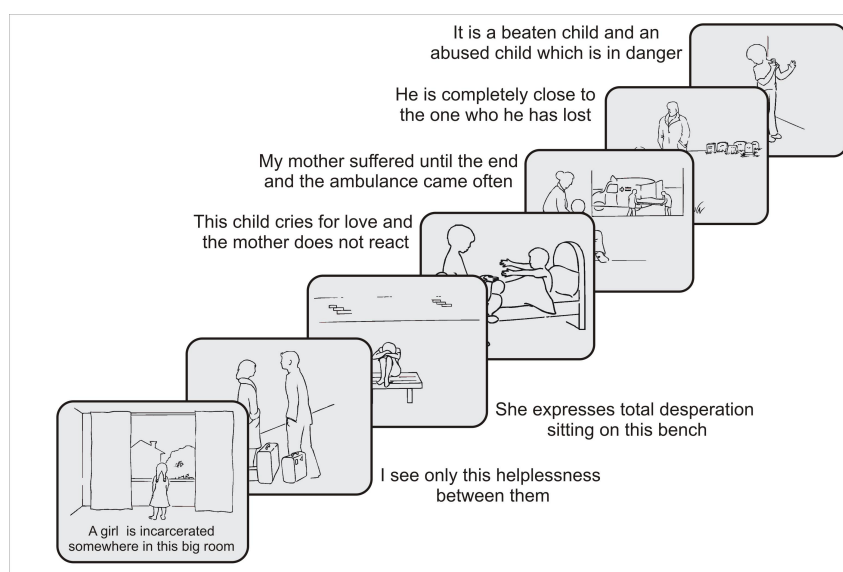
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Attachment Paradigm



Oxytocin increases trust in humans

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ARTICLE IN PRESS

BRIEF REPORT

Oxytocin Improves “Mind-Reading” in Humans

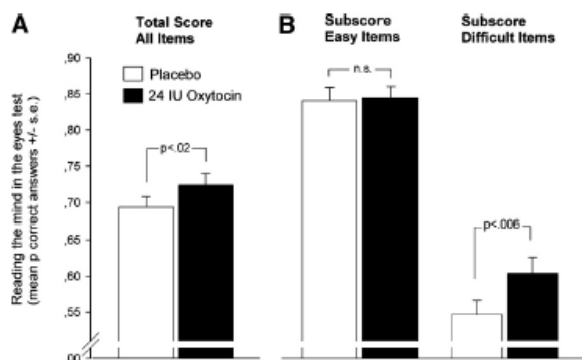
Gregor Domes, Markus Heinrichs, Andre Michel, Christoph Berger, and Sabine C. Herpertz

Background: The ability to “read the mind” of other individuals, that is, to infer their mental state by interpreting subtle social cues, is indispensable in human social interaction. The neuropeptide oxytocin plays a central role in social approach behavior in nonhuman mammals.

Methods: In a double-blind, placebo-controlled, within-subject design, 30 healthy male volunteers were tested for their ability to infer the affective mental state of others using the Reading the Mind in the Eyes Test (RMET) after intranasal administration of 24 IU oxytocin.

Results: Oxytocin improved performance on the RMET compared with placebo. This effect was pronounced for difficult compared with easy items.

Conclusions: Our data suggest that oxytocin improves the ability to infer the mental state of others from social cues of the eye region. Oxytocin might play a role in the pathogenesis of autism spectrum disorder, which is characterized by severe social impairment.





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SHORT COMMUNICATION

Oxytocin enhances the experience of attachment security

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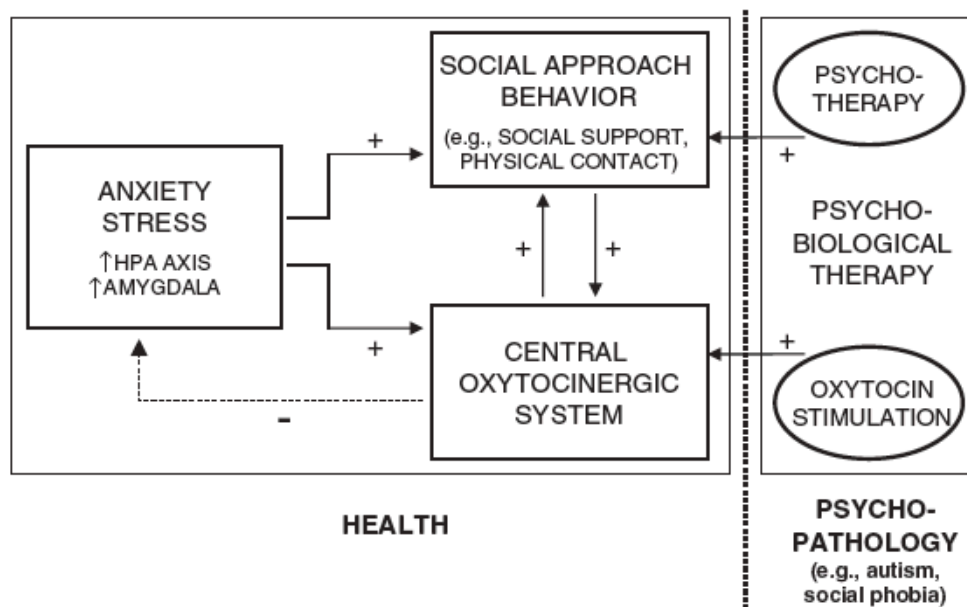


Fig. 1. Interactions between anxiety and stress, social approach behaviour, and the oxytocinergic system. Anxiety and stress encourage social approach behaviour and stimulate OXT release in healthy individuals. Different kinds of positive social interaction (e.g. physical contact) are associated with OXT release, and in turn, OXT promotes social approach behaviour. As OXT reduces HPA axis responses and limbic reactivity (especially amygdala) to social stressors, the neuropeptide plays an important role as an underlying neurobiological mechanism for the anxiolytic/stress-protective effects of positive social interaction. In mental and developmental disorders that are associated with severe deficits in social interactions (e.g. autism, social phobia, BPD), novel therapeutic approaches combining effective psychotherapy methods with OXT or OXT agonist administration offer the opportunity to develop a “psychobiological therapy”.

ORIGINAL RESEARCH ARTICLE

Association of D4 dopamine receptor gene and serotonin transporter promoter polymorphisms with infants' response to novelty

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Effects of DRD4 and 5-HTTLPR length polymorphisms have been reported on neonatal and infant temperament as well as adult personality traits. The 7-repeat form of the DRD4 III exon VNTR polymorphism has been associated with childhood ADHD, and recently we have reported its link with attachment disorganization in a nonclinical population of infants. Here, we report associations of these polymorphisms with infant temperament at 12 months of age. Maternal accounts of temperament and observed response to novelty were investigated for 90 infants, who were independently genotyped for the DRD4 III exon, and for 5-HTT-linked promoter region length polymorphisms. Maternal rating of temperament was not affected by these polymorphisms, but we found combined genotype effects for infants' observed responses to a novel, anxiety-provoking stimulus: the appearance of, and approach by, a stranger. Infants with at least one copy of both the 7-repeat DRD4 allele and the long variant of 5-HTTLPR (7*, l/l/s) responded with significantly less anxiety than infants with other genotypes. However, infants with the 7-repeat DRD4 allele and homozygous for the short form of 5-HTTLPR (7*, s/s) showed more anxiety and resistance to the stranger's initiation of interaction. These genotype effects were not redundant with the previously reported association between the 7-repeat DRD4 allele and disorganized attachment behavior. Although both temperament and attachment behavior were affected by the DRD4 repeat polymorphism, the effect on temperament measures was modified by the infants' 5-HTTLPR genotype. *Molecular Psychiatry* (2003) 8, 90–97. doi:10.1038/sj.mp.4001212

Keywords: stranger fear; distress to limitation; disorganized attachment; dopamine; serotonin

NO ASSOCIATION OF THE DOPAMINE D4 RECEPTOR (DRD4) AND -521 C/T PROMOTER POLYMORPHISMS WITH INFANT ATTACHMENT DISORGANIZATION

ATTACHMENT AND HUMAN DEVELOPMENT (IN PRESS)

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Centre for Child and Family Studies

Leiden University

The Netherlands

Genetic and environmental influence on attachment disorganization

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Manuscript Type:	Original Article (JCPP)
Date Submitted by the Author:	25-Sep-2008
Complete List of Authors:	Spangler, Gottfried; University of Erlangen-Nuremberg, Institute of Psychology Johann, Monika; University of Regensburg, Institute of Psychiatry Ronai, Zsolt; Semmelweis University, Institute of Medical Chemistry, Molecular Biology and Pathobiochemistry Zimmermann, Peter; Dortmund University, Institute of Psychology
Key Words:	Attachment, Genetics, Social factors, Environmental influences

Social Cognitive and Affective Neuroscience Advance Access published February 11, 2008

doi:10.1093/scan/nsn004

SCAN (2008) 1 of 7

Oxytocin receptor (*OXTR*) and serotonin transporter (*5-HTT*) genes associated with observed parenting

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Centre for Child and Family Studies, Leiden University, The Netherlands

Oxytocin and serotonin modulate affiliative responses to partners and offspring. Animal studies suggest a crucial role of oxytocin in mammalian parturition and lactation but also in parenting and social interactions with offspring. The serotonergic system may also be important through its influence on mood and the release of oxytocin. We examined the role of serotonin transporter (*5-HTT*) and oxytocin receptor (*OXTR*) genes in explaining differences in sensitive parenting in a community sample of 99 Caucasian, middle-class mothers with their 2-year-old toddlers at risk for externalizing behavior problems, taking into account maternal educational level, maternal depression and the quality of the marital relationship. Independent genetic effects of *5-HTTLPR* *SCL6A4* and *OXTR* *rs53576* on observed maternal sensitivity were found. Controlling for differences in maternal education, depression and marital discord, parents with the possibly less efficient variants of the serotonergic (*5-HTT* ss) and oxytocinergic (AA/AG) system genes showed lower levels of sensitive responsiveness to their toddlers. Two-way and three-way interactions with marital discord or depression were not significant. This first study on the role of both *OXTR* and *5-HTT* genes in human parenting points to molecular genetic differences that may be implicated in the production of oxytocin explaining differences in sensitive parenting.

Adult Attachment Predicts Maternal Brain and Oxytocin Response to Infant Cues

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REVIEW

The Role of Oxytocin in Mother-Infant Relations: A Systematic Review of Human Studies

Megan Galbally, MBBS, MPM, FRANZCP, Andrew James Lewis, PhD, Marinus van IJzendoorn, PhD, and Michael Permezel, MBBS, MD, FRACOG



CD 38 expression, attachment style and habituation of arousal in relation to trust-related oxytocin release[☆]

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ABSTRACT

Oxytocin plays an important role in human attachment, trust, social perception, memory, and fear regulation. Evidence suggests that CD38, a regulator of oxytocin release, may also be critical in these processes. The purpose of this study was to investigate the predictors of plasma oxytocin level measured after a task requiring intimate trust (secret sharing), modeling psychotherapeutic processes, and a neutral social interaction. Results revealed that peripheral CD38 expression positively predicted both trust-related and trust-unrelated oxytocin levels. In addition, habituation of arousal, as measured by skin conductance response, and attachment anxiety also emerged as predictors of oxytocin level in the trust-related condition. These results suggest that CD38 plays a general role in oxytocin secretion, whereas habituation of arousal and attachment anxiety are specifically related to situations involving intimate trust.

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Where does/should attachment research go?

- More research for understanding the role of attachment with the respect of the development of psychological disorders (dimensional scores, disorganized attachment)
- Examination of the matching between patients and therapists (integration in psychotherapy training)
- Integration of genetics and neuroendocrinology in participants/parents with psychological disorders

Where does attachment research go?

- The role of Oxytocin concentration and attachment in the understanding of disorders
 - Epigenetic mechanisms
- Psychotherapy, attachment and neuroimaging
- Psychotherapy, attachment, neuroimaging, and genetics/epigenetics