

Bridging the gap between attachment and object relations theories: A study of the transition to motherhood

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An empirical study of the relations between assessments of adult attachment styles and object representations was performed in the context of first-time mothers' emotional ties to their unborn babies. We assumed that, while conceptualizations of attachment behaviour and internal working models grasp the early basic patterns of interpersonal relationships and affect regulation, object representations indicate current transformations of these patterns in an individual's internal world. Participants were a sample of 120 women in the third trimester of their first pregnancy. Participants' representations of their own mothers were found to fully mediate the association between internal working models and antenatal ties to their babies. Similarities and differences between theoretical conceptualizations and empirical operationalizations of attachment and object relations theories are discussed.

Based on ethology, 20th-century Darwinism, and information-processing theories, Bowlby abandoned classic, mainly Kleinian, principles and announced "a new type of instinct theory" (1969, p. 17) including behavioural systems conducive to survival and adaptation. The study of observable interactions between infants and their caregivers led Bowlby to focus on proximity-seeking behaviours and to emphasize the attachment behavioural system, seen as vital for survival. Bowlby (1969, 1973, 1980) revised the Freudian concept of the "internal world" and proposed the concept of internal working models of self and attachment figures: based on real interactive experiences, dynamic mental representations or "internal working models" are construed by infants of their interpersonal world, and these shape an individual's anticipations, responses and interpretations in interpersonal relationships. A main gap between attachment and object relational theories relates, for the construction of internal representations, to the differences in emphasis on real experiences, on one hand, or on the effect of the internal world of fantasy on these experiences, on the other.

A recently growing body of empirical research has extended the study of attachment beyond childhood (Fonagy *et al.*, 1995; Hazan & Shaver, 1987). Bartholomew (1990, 1997) and Bartholomew and Horowitz (1991) proposed, on theoretical grounds, a classification of internal working models of attachment that is defined by the positivity of the models of self and other. The positivity of the self model indicates the degree to

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which the self is lovable and worthy and others are expected to be responsive. This model associates with feelings of anxiety and dependency in intimate relationships. The positivity of the model of the other is associated with tendencies to seek or avoid closeness, and a person's expectations about the expected support and the availability of others. These dimensions define four different models of attachment: secure (positive model of self and others); preoccupied (negative model of self and positive model of others); dismissing (positive model of self and negative model of others), and fearful (negative model of self and others) (Griffin & Bartholomew, 1994). Insecure attachment styles among adults have been recently defined as insecure dependency (Birtchnell, 1997).

Together with the burgeoning research on child attachment to parents and adult attachment, the empirical study of attachment is recently undertaking the investigation of the caregiving system (George, 1996). George and Solomon (1996) suggested that the ability to provide protection, which characterizes the caregiving behavioural system, is a mature transformation of earlier relational experiences, and their representations. Recent investigations support the connection between adult attachment and parenting issues (Fonagy *et al.*, 1995; Priel & Besser, 2000; Rholes, Simpson, & Blakely, 1995). Moreover, from the perspective of evolution theory, Belsky suggested that romantic attachment "translates" early experiences of caretaking into caregiving expectations and capacities in adulthood (Belsky, 1997).

However, even though the evidence of the connection between parental attachment and caregiving is accumulating, empirical findings in this realm need further elucidation. For instance, good parenting appears to be possible also among individuals with negative early experiences: an important subtype of the secure attachment classification—"earned" security—was found to characterize individuals with adverse early experiences who, mainly under stressful conditions, are as good parents as securely attached individuals (Fonagy *et al.*, 1995; Pearson, Cohn, Cowan, & Cowan, 1994; Phelps, Belsky, & Crnic, 1998). These studies show that adults classified with earned-security attachment are comparable to insecure individuals in their patterns of affect regulation, but are similar to secure individuals in relation to good parenting behaviour. The capacity to internally transform early experiences in specific ways, such as the creation of a coherent narrative of a difficult childhood (Fonagy *et al.*, 1995), may break the vicious circle of insecurity transmission on one hand, and hinder the continuity between models of attachment and adult caregiving on the other. We see in these conclusions a rapprochement between attachment and object relations perspectives, since models of early relationships are conceived both as reflections of real experiences with caregivers and as susceptible to internal transformations.

Object relations theories assume that processes of internalization are characteristically subject to transformation by the subject's capacity for fantasy (Fairbairn, 1952; Guntrip, 1961; Winnicott, 1965). Object relations are conceptualized as motivational structures that guide perception, and affect the organization of past experience and future prospects. Therefore, through idiomatic internalizations of self with other, the individual may be able to recover the disrupted or lost regulatory functions of the external object. These internalized relationships are assumed to consequently affect processes of meaning attribution, encompassing virtually all relationships, motivations and attitudes (Greenberg & Mitchell, 1983). Internalizations of primary object relations patterns have been studied empirically through the characterization of the representations of

parents, therapists and other significant figures (Blatt, Brenneis, Schimek, & Glick, 1976), their changes following long-term treatment (Blatt, Stayner, Auerbach, & Beherends, 1996), as well as the maturational processes involved (Priel, Myodovnik, & Rivlin-Beniaminy, 1995; Westen *et al.*, 1991).

The investigation of the relations between basic concepts of attachment and object relations theories is the focus of recent theoretical and empirical studies on the quality of early internalizations and their effects on behaviour, perception and affect regulation (Diamond & Blatt, 1994; Eagle, 1997; Fishler, Sperling, & Carr, 1990; Levy, Blatt, & Shaver, 1998; Zelnick & Buchholz, 1990). Levine, Tuber, Slade, and Ward (1991) conducted an empirical study of adolescent mothers comparing attachment and object representations. These authors reported that these two constructs overlap and are related to the quality of the children's attachment to their mothers. However, the significance of this overlap is reduced by the use of the Adult Attachment Interview to assess both attachment states of mind and object representations. Even though a considerable overlap between attachment and object relations constructs is expected on theoretical grounds, these might not be identical constructs, since attachment conceptualizations grasp the early basic patterns of interpersonal relationships and affect regulation, while object representations relate to the transformations of these patterns in the individual's internal world. We therefore utilized different operationalizations of internal working models and object representations that basically corresponded to the different definitions: adults' attachment styles were assessed as the positivity of the models of self and other (Bartholomew & Horowitz, 1991), and object representations were evaluated on the basis of the analysis of open narratives describing a significant other (Blatt, Chevron, Quinlan, Schaffer, & Wein, 1992).

The prenatal period may have a specific heuristic value for the investigation of the relations between the mothers' models of attachment and object representations, on one hand, and the emotional relation to their babies on the other hand, since, at this stage, this relation is not yet influenced by the specific characteristics of the infant and their effects on the caregiver. Moreover, the tie of a mother to her unborn child may be of critical importance for the development of the child and the mother's well-being (Benoit, Parker, & Zeanah, 1997; Fonagy, Steele, & Steele, 1991; Priel & Besser, 1999). In the transition to motherhood, women's representations of their own mothers have been assumed to relate to subsequent mother-child relationships (Stern, 1995; Winnicott, 1965), and the acquisition of maternal identity (Pines, 1972, 1982).

In the present study we assumed that, while evaluations of pregnant women's working models of attachment reflect experiences with their main caregivers, measures of their maternal representations assess idiomatic elaborations and transformations of these experiences. Thus, assessments of pregnant women's representations of their mothers were assumed to mediate the connection between measures of internal models of attachment and the emotional relation to the unborn baby. This hypothesis implies a conceptualization of object representations as associated with, though not identical to, internal working models of attachment.

To sum up, we explored the effects, among first-time pregnant women, of both their internal working models and the representations of their own mothers, on their attachment to their unborn babies. We assumed that assessments of attachment and maternal representations tap related but not identical constructs; in addition we

hypothesized that the association between measures of pregnant women's internal working models and antenatal attachment is mediated by the future mother's maternal representations.

Method

Participants

Participants were a consecutive sample of pregnant women attending routine checkups at their community Well Baby Clinic in a middle-class, urban area. We included in our sample only first natural low-risk pregnancies among married women without previous psychiatric history and without previous miscarriages. Participants were asked to volunteer for a study on women's experiences of first pregnancy and motherhood. Of the women we approached, 87% agreed to take part in this research. Our sample included 120 women with a mean age of 25.21 years ($SD = 3.50$), and 10–19 years of formal education ($M = 13.32$, $SD = 1.70$).

Measures

Dimensions of object representations. We analysed the participants' open-ended descriptions of their mothers using the method developed by Blatt and co-workers for the assessment of basic dimensions of parental representations (Blatt *et al.*, 1992). Participants were asked to "Describe your mother". The scoring procedure used included 12 qualitative dimensions, and the ambivalence, complexity and conceptual level of the description.

The qualitative aspects of parental representations are assessed by means of the analysis of the descriptions according to the following content categories: affectionate, ambitious, benevolent–malevolent, cold–warm, constructive involvement, intellectual, judgmental, negative–positive ideal, nurturing, punitive, successful, strong–weak. These content categories are rated on a 7-point scale (Blatt *et al.*, 1992), which provides an assessment of the degree to which each characteristic is present in the description on the basis of the rater's judgment of the subject's view of the parental figure for each category. This scoring procedure leads to three basic factors that assess the degree of benevolence, punitiveness and ambitiousness of the representations. In addition, coders also assessed on a 5-point scale the degree of ambivalence of the description as well as its complexity; that is, the number of scorable categories.

Assessments of the conceptual level of the parental descriptions are assumed to relate to the structural aspects of the description, and reveal the relative integration and maturity of the representation. The conceptual level of the representation is scored according to five epigenetic levels: sensory–motor, perceptual, iconic external, iconic internal, and conceptual. The conceptual level is scored on a 9-point scale, allowing for the five stages and four intermediate stages: (1) In the sensory–motor/preoperational level, the other is experienced primarily in terms of its activities and is recognized only in the context of need gratification. (2) In the perceptual–concrete level, the representation is articulated as separated from the specific experiences of gratification and is recognized as a generalized entity with a variety of concrete and literal functions and actions. Higher-level representations shift from depictive to truly representational (symbolic) functions. First representations are characterized by the iconic property of internalized object relations and this is subdivided into two sub-phases: external and internal iconic. (3) In the external iconic sub-phase, representation is based on concrete signs of the object; the qualities and attributes of these representations are based on specific, concrete, and manifest part properties, functions, and interests of the object. (4) In the internal iconic level, representations reflect mainly an appreciation of more abstract and internal properties, such as feelings and thoughts. (5) In the conceptual–representational level, the object is represented as a fully independent entity with enduring characteristics and continuity.

This method of assessing object relations representations has been found to be reliable (Blatt, Wiseman, Prince–Gibson, & Gatt, 1991; Bornstein, Galley, & Leone, 1986; Fishler *et al.*, 1990). The construct validity of this method is supported by research on psychopathology and psychodynamic treatment (Blatt, Auerbach & Levy, 1997; Marziali & Oleniuk, 1990), and the developmental dimensions of the model have recently been confirmed (Priel, Kantor, & Besser, 2000; Priel *et al.*, 1995). In addition, independent estimates of therapeutic change have been found to correlate with changes in the structural and qualitative dimensions of parental and self representations (Gruen, Blatt, Berman, Cook, & Meyer, 1990). In the present study, all

maternal descriptions were scored by two independent, trained raters. Inter-rater Pearson correlation coefficients for the scales used ranged between .75 and .95. When scores were not identical, the mean score was utilized. Cronbach α scores were .89, .71, and .68 for the benevolent, punitive, and ambitious factors, respectively. Correlations between these three factors, ambivalence, conceptual level, and complexity are presented in the Tables.

Adult attachment. The Relationship Questionnaire (RQ) (Bartholomew & Horowitz, 1991) was used to assess adult romantic attachment. The RQ consists of four short paragraphs, each describing a prototypical attachment pattern (i.e. secure, preoccupied, fearful-avoidant, and dismissing-avoidant). Participants were asked to select the paragraph that described them most accurately – a categorical attachment classification; and then they were asked to evaluate on a 5-point scale the extent to which each of the four paragraphs represented them – a continuous attachment classification (Bartholomew & Horowitz, 1991). The construct validity of this measure has recently been demonstrated (Griffin & Bartholomew, 1994).

Maternal Antenatal Attachment Scales (MAAS). Maternal antenatal attachment was assessed using the Maternal Antenatal Attachment Scales (MAAS) (see Condon & Corkindale, 1997). This scale consists of 19 items with two underlying dimensions: the quality of and the preoccupation with attachment to the unborn baby. The first dimension – quality – assesses affective experiences, such as closeness, tenderness, positive feeling about the future baby, and desire to know about it, as well as vivid internal representations of it. The second dimension – intensity – assesses the mothers' intensity of preoccupation with the fetus, including the amount of time spent thinking about, talking to, and dreaming about it. Participants' responses are made on 5-point scales, with higher values indicating greater antenatal attachment. The α coefficients were .90 and .76 for quality and intensity, respectively.

Procedure

Participants who fulfilled the demographic and clinical criteria were interviewed during the last trimester of pregnancy ($M = 25.9$ weeks, $SD = 7.3$). Participants were asked to describe their mothers and complete the attachment questionnaire and the scales for the assessment of antenatal attachment. These assessments were performed as part of a longitudinal project on the transition to motherhood. Interviews were recorded and transcribed. The object representations interviews were scored by two trained, independent scorers, blind to this study's objectives.

Results

After the descriptive characterization of the sample, two levels of data analysis are presented: using categorical assessments of attachment, we explored the assumption that different attachment groups have different maternal representations and diverse levels of antenatal attachment. Then, using continuous attachment scores, we specified a mediational model of the relations among three latent variables: internal working models, maternal representations, and antenatal attachment.

Descriptive statistics and preliminary analyses

In the present sample, 55 (45.83%) participants defined themselves as secure, 25 (20.83%) as fearful, 13 (10.83%) as preoccupied) and 27 (22.50%) as dismissing. This distribution does not differ significantly from either the distribution of attachment groups in Bartholomew and Horowitz's (1991) sample (47, 21, 14 and 18 for secure, fearful, preoccupied, and dismissing participants, respectively, p. 229) or another recent independent sample of pregnant women (Priel & Besser, 2000).

In order to explore possible differences involving demographic variables, a MANOVA was performed, with romantic attachment as the independent variable and the age and formal education of the participants as dependent variables. Differences were not significant (Wilks' $\Lambda(6, 230) = .93, p = .16$).

Maternal representations and attachment groups

We performed a MANOVA, with four attachment groups (secure, preoccupied, fearful, and dismissing) as the independent variable and the six object representations scales (benevolent, punitive, ambitious, ambivalent, conceptual level and complexity) as the dependent variables. As expected, a significant effect for attachment group was obtained (Wilks' $\Lambda(18, 314) = .19, p < .000$). Means, standard deviations and F scores for univariate ANOVAs are presented in Table 1. Secure individuals' maternal representations are more benevolent and ambitious and less punitive and ambivalent than the representations of the insecure groups. In addition, maternal representations among individuals reporting secure attachment are significantly more complex and have a higher conceptual level. Compared with the dismissing group, maternal representations among fearful participants were significantly more benevolent and complex, less ambivalent, and on a higher conceptual level. Representations in the preoccupied group were more ambivalent and less complex than in the fearful group.

Table 1. Means, standard deviations (in parentheses) and F values, of maternal object representations

Maternal object representation	Secure	Fearful	Preoccupied	Dismissing	$F(3,116)$
Benevolent	5.36 (1.15) ^a	4.46 (.94) ^b	4.48 (.76) ^b	3.34 (.98) ^c	23.33***
Punitive	3.50 (1.11) ^a	4.13 (.84) ^b	4.44 (.71) ^b	4.55 (.91) ^b	8.56***
Ambitious	4.55 (1.04) ^a	3.76 (.97) ^b	3.15 (.90) ^b	3.07 (1.03) ^b	16.11***
Ambivalent	1.85 (1.11) ^a	2.60 (1.12) ^b	3.46 (.97) ^c	3.74 (.98) ^c	21.86***
Conceptual level	6.8 (1.27) ^a	5.48 (1.12) ^b	4.38 (1.12) ^b	2.70 (1.56) ^c	62.67***
Complexity	7.43 (1.33) ^a	6.16 (.90) ^b	5.0 (.71) ^c	3.90 (1.19) ^d	60.38***

Note: Means in the same row that do not share superscripts differ at $p < .05$.

$N = 120$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Antenatal attachment and attachment groups

A MANOVA with four attachment groups (secure, preoccupied, fearful, and dismissing) as the independent variable and two antenatal attachment scales (quality and intensity) as dependent variables was performed. We obtained a significant effect for attachment (Wilks' $\Lambda(6, 230) = .56, p < .000$). Means, SDs and F scores for univariate ANOVAs are presented in Table 2. Preoccupied participants scored significantly lower on the two antenatal attachment scales.

The mediating role of object representations

The mediating model was examined using a structural equation modelling (SEM) strategy that permitted the simultaneous evaluation of both the direct and mediating

Table 2. Means, standard deviations (in parentheses) and *F* values of antenatal attachment

Antenatal Attachment	Secure	Fearful	Preoccupied	Dismissing	<i>F</i> (3,116)
Quality	47.65 (2.73) ^a	44.92 (3.09) ^b	39.46 (4.68) ^c	43.26 (3.82) ^b	26.22***
Intensity	28.78 (4.12) ^a	28.68 (6.45) ^a	24.46 (4.39) ^b	26.22 (4.38) ^a	4.14**

Note: Means in the same row that do not share superscripts differ at $p < .05$.

$N = 120$; * $p < .05$; ** $p < .01$; *** $p < .001$.

effects of the mothers' object representations, while assessing measurement errors in the dependent and independent variables. SEM analyses were performed with AMOS software (version 4.0; Aurbackle, 2000) using the maximum likelihood method. The following steps were followed: in the preliminary phase we performed a Confirmatory Factor Analysis (CFA) of the object representations and internal working models constructs. We then tested the measurement model for object representations, internal working models, and antenatal attachment. Following these tests, we analysed the direct effects of internal working model on antenatal attachment. Finally, we specified the direct and indirect effects model and the final mediation model. The means, SDs and correlation matrix of all the variables in these analyses are presented in Table 3.

Object representations: confirmatory factor analysis

We specified a latent construct – maternal representation – determined by six indicators (benevolent, punitive, ambitious, ambivalent, conceptual level, and complexity). The model specified was found to fit the observed data well ($\chi^2(9, N = 120) = 11.0$, $p = .28$, $CFI = .99$, $GFI = .97$, $NFI = .96$). This model explains 43, 5, 27, 31, 78 and 83% of the variance of the benevolent, punitive, ambitious, ambivalent, conceptual level and complexity scores, respectively.

Following the modification indices described by Jöreskog and Sörbom (1985), we controlled for the correlations between the error terms of the punitive factor with the conceptual level and the complexity scores. The model specified fitted the observed data well ($\chi^2(7, N = 120) = 5.3$, $p = .63$, $CFI = 1.0$, $GFI = .99$, $NFI = .98$). Results from the χ^2 test of the differences between the two CFA models indicated that the last model significantly improved the fit to the data ($\chi^2 \text{diff}(2, N = 120) = 5.7$, $p < .05$). All the factor indicators, paths and loading were substantial and statistically significant in the expected directions. The model explained 43, 5, 27, 31, 76 and 84% of the variance for the benevolent, punitive and ambitious factors, and the ambivalent, conceptual level, and complexity variables, respectively.

Internal working model: confirmatory factor analysis

We specified a latent construct determined by four indicators (secure, fearful, preoccupied, and dismissing attachment). The CFA model specified was found to fit the observed data well ($\chi^2(2, N = 120) = 3.90$, $p = .14$, $CFI = .99$, $GFI = .98$, $NFI = .99$). All the factor indicators, paths and loading were substantial and statistically significant in the expected directions. The model was found to explain 54, 68, 79 and 58% of the variance of the secure, fearful, preoccupied, and dismissing variables, respectively.

Table 3. Correlations, means and standard deviations for the study variables

Variables	M	SD	2	3	4	5	6	7	8	9	10	11	12
<i>Object representations</i>													
1. Benevolent	4.62	1.30	-.10	.33***	-.42***	.57***	.60***	.32***	-.47***	-.52***	-.43***	.33***	.07
2. Punitive	3.97	1.07	—	-.21*	.11	-.27**	-.15	-.33***	.36***	.33***	.33***	-.23***	-.16
3. Ambitious	3.90	1.18	—	—	-.37***	.45***	.46***	.38***	-.39***	-.47***	-.35***	.38***	.12
4. Ambivalent	2.61	1.32	—	—	—	-.46***	-.51***	-.50***	.43***	.58***	.44***	-.29**	-.11
5. Conceptual Level	5.34	2.08	—	—	—	—	.81***	.55***	-.64***	-.68***	-.59***	.43***	.19*
6. Complexity	6.11	1.84	—	—	—	—	—	.56***	-.61***	-.69***	-.52***	.42***	.21*
<i>Romantic attachment style</i>													
7. Secure	3.15	1.31	—	—	—	—	—	—	-.59***	-.63***	-.62***	.43***	.22*
8. Fearful	2.35	1.25	—	—	—	—	—	—	—	.73***	.60***	-.37***	-.22**
9. Preoccupied	2.04	1.15	—	—	—	—	—	—	—	—	.67***	-.33***	-.17
10. Dismissing	2.65	1.23	—	—	—	—	—	—	—	—	—	-.36***	-.15
<i>Antenatal attachment</i>													
11. Quality	45.21	4.24	—	—	—	—	—	—	—	—	—	—	.21*
12. Intensity	27.72	4.96	—	—	—	—	—	—	—	—	—	—	—

Note. $N = 120$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Analysis of the measurement model

We analysed a single measurement model delineating all the associations between latent variables. The measurement model included three latent variables: maternal representation, assessed by six indicators; internal working model, assessed by four indicators; and antenatal attachment, measured by the indicators quality and intensity. The measurement model specified (see Fig. 1) was found to fit the observed data well ($\chi^2(49, N = 120) = 57.16, p = .20, CFI = .99, GFI = .93, NFI = .92$).

As can be seen from Fig. 1, object representations and internal working models are highly correlated constructs. In order to explore the possibility that both assessments of object representations and internal working models may tap aspects of a single latent construct, we performed an additional CFA. We specified a single latent variable construct determined by 10 indicators, the six indicators of object representations (benevolent, punitive, ambitious, ambivalent, conceptual level, and complexity) and the four indicators of internal working models (secure, fearful, preoccupied and dismissing). This model did not fit the observed data ($\chi^2(33, N = 120) = 70.85, p < .001, CFI = .94, GFI = .88, NFI = .89$). We therefore proceeded to test structural models including the object representations and internal working models constructs.

Structural models specifications

We followed Baron and Kenny's (1986) criteria for mediation according to which: (1) there must be a significant association between the independent and dependent variables; and (2) the mediator must be a significant predictor of the outcome variable in an equation including both the mediator and the independent variable. Then, if the significant direct relationship between the independent and the dependent variables in the equation, including both the mediator and the independent variable, declines, the obtained pattern is consistent with the mediation hypothesis. If the direct effect approaches zero, the mediator can be said to fully (although not necessarily exclusively) account for the relation between predictor and outcome (Baron & Kenny, 1986).

Analysis of the direct effects

We estimated first the direct effect of the internal working models latent variable on the antenatal attachment latent variable. This model (see Fig. 2) provided a plausible fit to the observed data ($\chi^2(8, N = 120) = 10.83, p = .21, CFI = 1.0, GFI = .97, NFI = .96$; path coefficient = .71, $t(119) = 4.70, p < .000$), showing that pregnant women's security is associated with reports of higher levels of antenatal attachment. This direct effect model accounted for 50% of the variance of the antenatal attachment latent variable.

Analysis of mediation

We assumed that maternal representation mediates the effects of participants' internal working models on their antenatal attachment. In order to test this

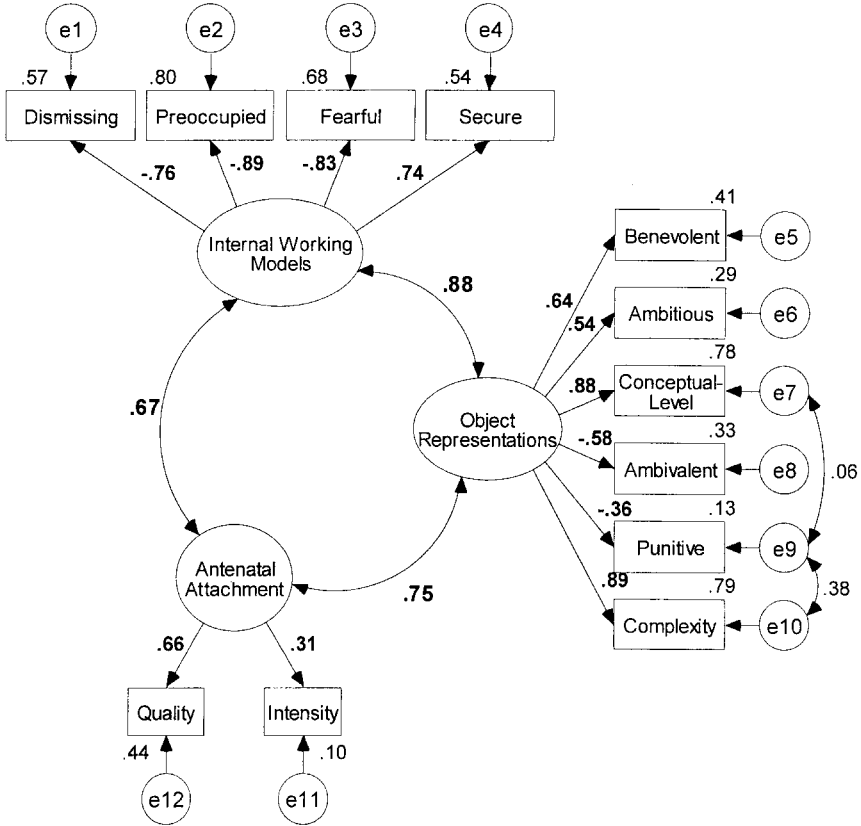


Figure 1. Measurement model.

Note: Standardized maximum likelihood parameters for initial measurement model. Bold estimates are statistically significant. Large circle represents latent construct, small circles represent residual variances, bi-directional arrows reflect correlations, and unidirectional arrows depict hypothesized directional, or “causal”, links.

assumption, we specified a complete mediation model that included an endogenous mediating latent variable – maternal representation. The exogenous predictor was the latent variable internal working model, and the latent variable antenatal attachment was the dependent variable in this model. We included the direct path between internal working models and antenatal attachment as well as the indirect effect of the internal working models, through maternal representation, on antenatal attachment. The specified mediation assumed that more positive internal working models (containing high secure and low fearful, preoccupied, and dismissing levels) should be associated with more positive maternal representations (containing lower scores for punitiveness and ambivalence, higher scores on the benevolence, complexity, and ambitiousness variables, and higher conceptual level evaluations) which, in turn, should be associated with increased levels of antenatal attachment. This model (see Fig. 3) provided a good fit to the data ($\chi^2(49, N = 120) = 57.16, p = .20, CFI = .99, GFI = .93, NFI = .92$), accounting

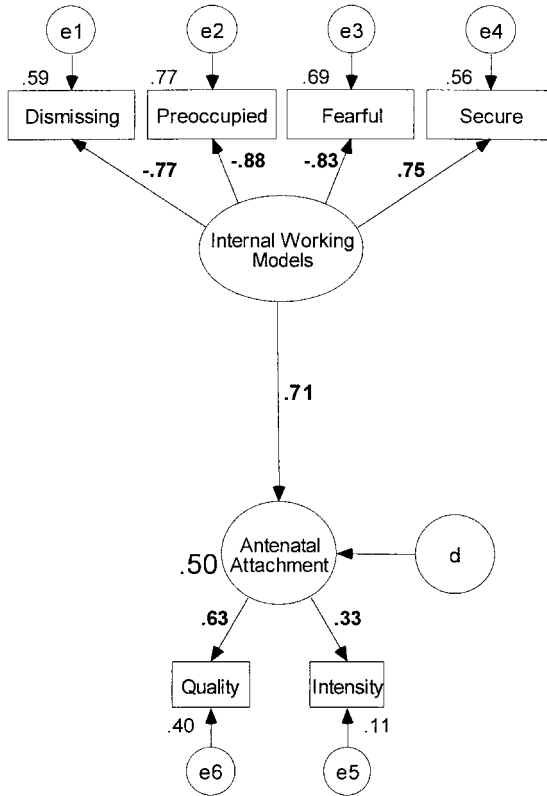


Figure 2. Direct effect model of internal working models on antenatal attachment.

Note: Standardized maximum likelihood parameters for initial measurement model. Bold estimates are statistically significant. Large circle represents latent construct, small circles represent residual variances, bi-directional arrows reflect correlations, and unidirectional arrows depict hypothesized directional, or “causal”, links.

for 77% of the variance of object representations and 57% of the variance of antenatal attachment.

Mediation has occurred when the indirect effect of a predictor through a mediator significantly reduces the predictor’s direct effect (Baron & Kenny, 1986). As can be seen in Fig. 2, the direct path from internal working model to antenatal attachment was significant (path coefficient = .71, $t(119) = 4.70$, $p < .000$). In Fig. 3, however, this path approached zero (path coefficient = .04, $t(119) = 0.11$, n.s.). Thus, Maternal Representations is an almost full (though not necessarily exclusive) mediator of the association between internal working models and antenatal attachment.

In order to obtain the most parsimonious model, we then removed the statistically non-significant path from internal working models to antenatal attachment (Bentler & Mooijaart, 1989). The more parsimonious model was found to fit the data very well, ($\chi^2(50, N = 120) = 57.2$, $p = .23$, $CFI = .99$, $GFI = .93$, $NFI = .92$), accounting for 77% of the variance of object representations, and 57% of the variance of antenatal attachment.

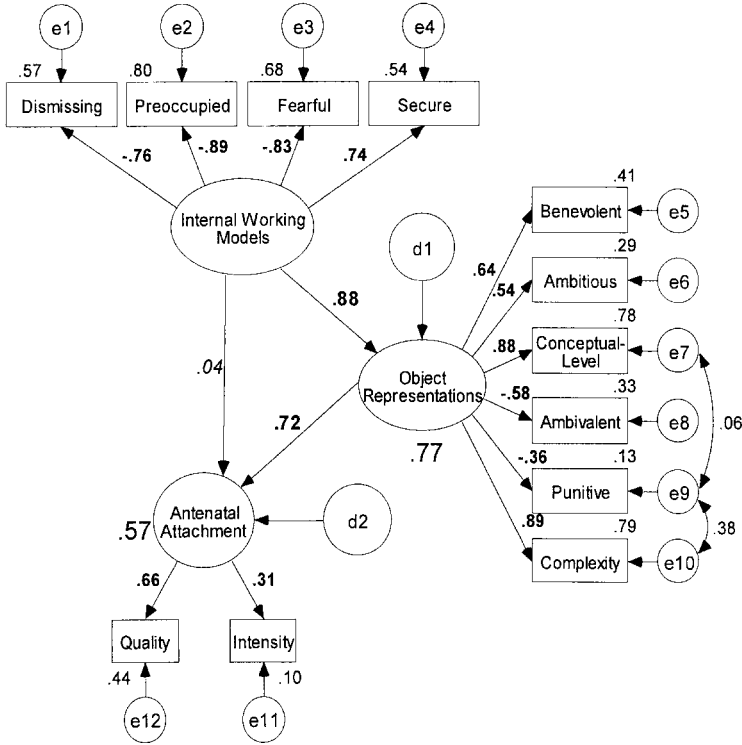


Figure 3. Direct and indirect effects model.

Note: Standardized maximum likelihood parameters for initial measurement model. Bold estimates are statistically significant. Large circle represents latent construct, small circles represent residual variances, bi-directional arrows reflect correlations, and unidirectional arrows depict hypothesized directional, or “causal”, links.

Discussion

The present study focused on the associations between pregnant women’s quality of attachment and maternal representations, and the relations between these two constructs and antenatal attachment. Our findings corroborate the theoretically assumed association between the internal working model and object representation constructs, but also suggested possible differences between these constructs regarding the evolving emotional connection with the infant.

The results of this study point to marked differences in the representations of the mother figure between secure and insecure participants. Assessments of maternal descriptions among pregnant women classified secure revealed structurally more complex, differentiated, and integrated representations; in addition, these representations appear as less ambivalent and had significantly more positive characteristics. These findings corroborate recent results reported for a general sample by Levy *et al.* (1998). In addition, the level of complexity of the representation did also differentiate significantly among the three non-secure attachment groups (preoccupied, dismissing and fearful). We found fearful individuals to be the closest to the secure group, while

dismissing women presented the least complex representations of all, and the preoccupied ones were in between. This characterization of the complexity of maternal representations in different attachment groups suggests a main difference between what can be described as congruent and incongruent models of attachment. Attachment is congruent when, as Bowlby expected, self and the other are mutually confirming (Bowlby, 1973); that is, both are positive (secure attachment) or negative (avoidant-fearful attachment). The attachment classification is incongruent when this prediction is not fulfilled: self is positive and the other negative (avoidant-dismissing attachment), or self is negative and the other positive (preoccupied attachment). It has been suggested that incongruent models of attachment associate with specific defences: the preoccupied person blames him/herself for perceived rejection, thus keeping the others' positive valence; the avoidant-dismissing subject downplays the importance of others and their rejections, thus maintaining self-esteem (Bartholomew & Horowitz, 1991). Thus, it seems plausible that incongruent attachment classifications point to massive defensiveness. This defensiveness may explain the more guarded (e.g. simplified) representations found in the incongruent groups, resulting in preoccupied individuals' idealization and in dismissing individuals' devaluation of the object.

These study findings support a conceptualization of object representations and internal working models as tapping related but diverse constructs. If we conceive of assessments of object representations as reflecting the organization of internalized interpersonal models in the present, while internal working models tap early experiences of relatedness, these findings suggest the coexistence of aspects of both continuity and discontinuity of internalized patterns of relatedness during the life-span. Moreover, the pattern of results obtained shows that the effect of expectations and evaluations of interpersonal experiences that stem from the quality of pregnant women's models of attachment on antenatal attachment can be accounted for by the characteristics of women's representations of their own mother. These findings imply that assessments of object representations provide a glimpse on a plausible mechanism through which early experiences of relationships may affect aspects of the caregiving system: this effect, or the lack of it, is explained by the present meaning of significant relationships, and the stance taken toward them in adulthood.

This study conclusion corroborates the gist of Fonagy *et al.*'s (1991) seminal work on the intergenerational transmission of patterns of attachment. In discussing their results, Fonagy *et al.* (1991) wrote that the predictive power of the mothers' pattern of attachment may reside "not in the quality of past experience but in the overall organization of mental structures underlying relationships and attachment related issues" (1991, p. 901). More recently, studies centring on the effects of maternal sensitivity and infant temperament (e.g. Crandell, Fitzgerald, & Whipple, 1997) also reached the conclusion that it is not the quality of the mothers' early story of attachment but the mental organization of these experiences that is closely related to parent-child interaction patterns. Both continuity and discontinuity are implicated in this model, and the main assumptions of attachment, as well as object relations, theories seem to remain valid, and even necessary, to the understanding of basic intrapsychic and interpersonal processes.

A few caveats should guide the interpretation of these findings. First, in spite of the accumulating evidence on appropriate reliability and validity of the measures of adult

attachment and object representations used in this investigation, more research is needed to evaluate the extent to which these assessments do indeed tap these particular constructs beyond general assessments of interpersonal relatedness. Another limitation of the present study is its cross-sectional design that precludes causal inferences; further investigations using longitudinal designs are necessary. In addition, even though antenatal attachment emerged as a critical construct for the study of early mother-child relationships (Benoit *et al.*, 1997; Besser & Priel, 2000; Fonagy *et al.*, 1995), its predictive value might be constrained by the effects of factors such as social support and infant characteristics that may affect attachment after the child is born.

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