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Escola de Psicologia

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**Attachment orientation and caretaking
memories in fathers during the transition
to parenthood**



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Mestrado em Psicologia Aplicada

Trabalho efetuado sob a orientação da
Professora Doutora Bárbara Figueiredo

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Orientação de vinculação e memórias de infância em pais-homens na transição para a parentalidade

Resumo

De acordo com a teoria da vinculação, modelos dinâmicos modelam relacionamentos ao longo da vida. Na transição para a parentalidade, os processos de mudança de modelos representacionais podem ser clarificados consoante memórias de cuidados na infância e vinculação adulta. Os objetivos do estudo são, ao longo da transição para a parentalidade: primeiro, analisar o efeito das memórias de infância na vinculação adulta; segundo, explorar a (des)continuidade na trajetória da vinculação adulta e nas memórias de infância; terceiro, analisar o efeito das memórias de infância na trajetória da vinculação adulta. 86 pais-homens primíparos completaram medidas da percepção de memórias de infância e vinculação adulta no primeiro, terceiro trimestre de gravidez, parto e sexto mês pós-parto. Os resultados sugerem que os pais entram na transição mais ansiosos se tiverem memórias de rejeição materna. A trajetória de orientação de vinculação e percepção de memórias de infância é estável durante a transição para a parentalidade. Se os pais perceberem ambos progenitores como emocionalmente apoiantes, tornam-se menos evitantes ao longo da transição. Este estudo pode representar um avanço na literatura, sugerindo que memórias de apoio emocional desfavorecem orientações inseguras durante a transição para a parentalidade.

Palavras-chave: estabilidade; parentalidade; percepção de cuidados; transição; vinculação adulta.

Attachment orientation and caretaking memories in fathers during the transition to parenthood

Abstract

According to attachment theory, attachment working models shape dynamics of relationships across life span. At the transition to parenthood, change processes of working models may be clarified according to caretaking memories and attachment orientation. This study aims were, at the transition to parenthood: firstly, to analyze the effect of fathers' childhood memories on adult attachment; secondly, to explore (dis)continuity on fathers' adult attachment and on perception of childhood caretaking; thirdly, to analyze the effect of fathers' childhood memories on the adult attachment trajectory. 86 primiparous fathers completed self-report measures of parental caretaking memories and adult attachment in the first, third trimester of pregnancy, childbirth and sixth month postpartum. Results suggest that fathers, who maintain memories of maternal rejection, enter the transition more anxious. Attachment orientation and childhood memories trajectories are stable across the transition to parenthood. If fathers perceive both parents as emotionally warming, become less avoidant during parenthood transition. This study may represent an advance on attachment research, by suggesting that emotional support memories disfavor insecure orientations during the transition to parenthood.

Keywords: adult attachment; parenting; perceived caretaking; stability; transition.

Attachment orientation and caretaking memories in fathers during the transition to parenthood

According to John Bowlby's attachment framework (1969/1982; 1988), attachment, caregiving and exploration are three innate behavioral systems equipping human beings. Particularly, the attachment system motivates the individual to get support and knowledge from significant others, thus facilitating adjustment and survival in the environment. The attachment behavior, developed particularly in early relationships with primary caregivers, ensures safety when the infant's distressed and allows exploration (Mikulincer & Shaver, 2012).

During the first months of life, the security experienced by the child depends on the trustworthiness and responsiveness of the attachment figures (Bowlby, 1969/1982). Over repeated interactions, children shape beliefs and expectations about the proximity and protection their significant figures will provide. This set of cognitive and affective content is progressively organized into "internal working models", a concept denoting mental representations of self, significant others and of relationships, that includes episodic memories of interactions with attachment figures (Bretherton, 1990).

Bowlby (1973) proposed that, from infancy on, internal working models should gradually become resistant to change, albeit these models can be modified by such experiences as life transitions (expanded below). These enduring representations in interaction regulate the attachment system at an un-conscious level (Solomon & George, 2008). By contributing to the organization of attachment behavior, internal working models impact individual's social development and interpersonal dynamics (Bretherton, 1990; Fraley, Vicary, Brumbaugh & Roisman, 2011). New experiences are filtered by a preordained framework, maintaining the attachment system active over life span.

The development of adult close relationships is an attachment process, similar to childhood attachment dynamics (e.g. activation and termination) (Hazan & Shaver, 1987). Over the development of romantic relationships, according to Bowlby (1988), the partner becomes a new safe haven: an attachment figure to seek when individuals are in distressing situations. As the early significant figures, the partner is expected (or not) to be available in order to provide caregiving behaviors (Mikulincer & Shaver, 2012).

Revisions on Hazan and Shaver's (1987) first adult attachment self-report scale have since led research to center on two adult attachment orientations: anxiety and avoidance (Brennan, Clark, & Shaver, 1998). Individuals who score low on both dimensions are considered securely

attached, denoting that they tend to be socially competent, to feel comfortable with intimacy and to accept their partner despite the partner's faults. Anxious-ambivalent attachment, Hazan and Shaver's (1987) first orientation, is characteristic of individuals whose early attachment figures were predominantly unreliable or unresponsive when needed. Therefore, anxious adults are uncertain about the stability of their relationships, which motivates them to remain in close contact with partners. Ambivalent individuals are hypervigilant in order to prevent abandonment, regardless of under-perceiving the amount of available support (Simpson *et al*, 2003). The second orientation is avoidant attachment. These individuals' early caregivers are commonly disinvested and critical. In order to avoid negative feelings, such relationships are often idealized. One of the primary goals of avoidant adults is to self-protect, by restraining intimacy and preserving psychological and emotional autonomy. Highly avoidant adults do not depend on nor provide much care to partners (Mikulincer & Shaver, 2012).

In romantic relationships or other social experiences, adults reproduce beliefs and behaviors congruent with the predominant attachment orientation of their internal working models. When the degree of responsiveness to the adults security and proximity requests diverge from expected, the accommodation of new or adjusted working models may be facilitated (Fraley, Vicary, Brumbaugh & Roisman, 2011; Pacheco, Costa & Figueiredo, 2003). One of the attachment theory assumptions, the *prototype perspective*, is that early working models are relatively stable, have an ongoing effect on attachment dynamics throughout development and may be transmitted through generations (Bowlby, 1988; Fraley, 2002). However, Lewis, Feiring and Rosenthal (2000) and other theorists have argued that representations and memories may be revised, implying a *revisionist perspective*. This hypothesis assumes that early attachment working models are updated in light of ongoing experiences and consequently may or may not correspond to attachment representations later in life (Fraley, 2002).

In fact, empirical data on the stability of working models is incongruent. Waters, Merrick, Treboux, Crowell and Albersheim (2000) reported moderate to high degrees of stability over long periods of time. Mary Main's longitudinal studies (e.g. Main, Kaplan & Cassidy, 1985) also showed a strong stability of attachment orientations on parents of six-year-old children. Main's findings indicate that mothers insecurely attached to their parents promoted an insecure, avoidant or anxious, attachment. This orientation was also evident in the attachment behavior of the children towards their mother, suggesting an intergenerational effect (Hesse & Main, 2000).

However, Main reported results of secure and very secure parents who described an unhappy or dysfunctional childhood and developed a secure attachment with their children. What distinguishes these mothers from disorganized mothers is that they were able to balance adverse events with positive experiences, as shown by their fluent and coherent speech about early difficult memories of caretaking (Main, Kaplan & Cassidy, 1985). Also contributing to a revisionist perspective, other researchers reported little to no continuity in internal working models of attachment across childhood and adolescence (e.g., Lewis, Feiring & Rosenthal, 2000). Studies have shown that normative life transitions (e.g., the transition to parenthood) may precipitate socio-cognitive or environmental changes, diversifying the representations of attachment security (Fraley, 2002; Rholes *et al*, 2011).

Transitions, and particularly the transition to parenthood, have been defined as long-term processes demanding cognitive and behavioral adjustments. These adjustments allow the individual to attain a new state of equilibrium, after qualitatively having reorganized both inner and external life (Cowan & Cowan, 1992; Figueiredo & Lamela, 2014). The transition to parenthood may tend to be milder, hormonal and physically, in men than in women, but it sets the urgency for profound normative changes in family structure (Deave & Johnson, 2008). Fathers complete the transition to parenthood surpassing developmental tasks (e.g. the onset of a representational relationship with the baby).

According to Cowan and Cowan's (1992) systems theory, in which the tensions of this period of changes are described, the need for fathers to be more involved in child care than their own father is noted. This is explainable by the current generation's weak masculine models of caregiving. Fathers-to-be explore context variables, as the contemporary "parenting culture", which redefined a former role of a disciplinarian father, to one of a caregiver, not only towards the baby, but also regarding the partner (Genesoni & Tallandini, 2009).

Exploring a father identity while experiencing pregnancy, also uncovers all the memories and emotions of caretaking during childhood (Knoester & Eggebeen, 2006). The transition to parenthood has been shown to operate a revision of fathers' own memories of caretaking, since this period is an opportunity to apply a more appropriate repertoire of parental care (Rodrigues *et al*, 2004). The revaluation promotes positive changes in mental structure, adaptation to the parent role and the update of working models (Fonagy, Steele & Steele, 1991). In a transition to parenthood study, Simpson, Rholes, Campbell and Wilson (2003) found that perceptions of the

partner's emotional support and rejection predict meaningful changes in attachment, primarily avoidance orientation. A similar effect may be expected regarding the perceptions of the parents' emotional support and rejection.

The process of caretaking memories revision may have an adaptive function, though individuals typically select environments congruent with their current internal working models (Fraley, 2002). For example, during the transition to parenthood, parents tend to accommodate more competent working models of protection, thus not using their child as a caregiver to the parents' own attachment system (Bowlby, 1988).

Other hypotheses have been researched regarding early caretaking memories re-evaluations, besides the resolution of developmental tasks characteristic of the transition to parenthood (Cowan & Cowan, 1992). Attachment studies have shown the effect of other normative transitions, such as the period of adolescence (Pinquart, Feußner & Ahnert, 2013). Biological, cognitive, emotional and social development across adolescence enables increasingly abstract working models of relationships, associated to revision of early experiences. As researchers have noted (e.g. Fraley, 2002), factors such as moving to a new town, serious illness or life events associated with the loss of a long-term relationship, have the potential to affect the quality of the caregiving environment. Other factors associated to the revisionist perspective are narrative changes in psychotherapeutic processes and the attachment orientation maintained across social and romantic adult relationships (Cicchetti, Toth & Rogosch, 1999; Pacheco *et al*, 2003). These factors may allow new patterns of interaction to attachment figures or produce new internal representations (Pacheco *et al*, 2003; Chopik, Edelstein & Fraley, 2013). An adult with an insecure attachment orientation can "earn" secure attachment by experiencing it over time within a new safe haven, which implies possibilities for adaptive functioning.

Aims

Few studies have investigated the developmental processes of becoming a father, in an attachment point of view, though attachment and transition to parenthood are prolific fields. Drawing on Bowlby's attachment theory (1969/1982), the present study tries to extend these theoretical directions to the transition to parenthood research, focusing on adult attachment orientations and perception of childhood caretaking memories. In order to address the gaps in attachment lit-

erature (during the transition to parenthood, the trajectory of early caretaking memories perception was not studied), the study goals were:

(1) To analyze at the baseline (first trimester of pregnancy) main effects of childhood caretaking memories on anxious and avoidant attachment orientations.

(2) To examine developmental changes in fathers' (a) adult attachment orientation and (b) childhood caretaking memories, during the transition to parenthood (from the first trimester of pregnancy to six months postpartum).

(3) To explore discontinuity and continuity of anxious and avoidant attachment orientations across the transition to parenthood, according to moderating effects of childhood caretaking memories.

Regarding the present study goals, three hypotheses are proposed:

(1) It is expected that more negative caretaking memories associate positively to insecure attachment orientations at the baseline.

(2) Because normative life transitions are favorable to the revision of attachment working models (Rholes, Simpson, Campbell & Grich, 2001), the discontinuity of these variables across time is expected.

(3) Expanding from the first hypothesis, positive early caretaking memories should contribute to a higher reduction of insecure orientation scores across the transition to parenthood.

Method

Measures

Sociodemographic questionnaire (Figueiredo, Teixeira, Conde, Pinto & Sarmento, 2009). The measure consists of 146 open-ended questions allowing the characterization of the participants and their partners as to their social, demographic and labor situation, social support network, pregnancy and childbirth and also history of psychiatric or health problems.

Inventory "Experiences in close relationships" - ECR (Brennan, Clark & Shaver, 1998; Portuguese validation by Paiva & Figueiredo, 2010). ECR is administered to assess adult attachment in current relationships. This is a 36 items self-report questionnaire with a seven-point Likert scale (from "Strongly disagree" to "Strongly agree").

Attachment assessment is based on avoidance and anxiety. The subscale of Proximity avoidance, characterized by discomfort with the emotional dependence and the preference with

distance (e.g. “I prefer not to show partners how I feel deep down”), is obtained by the sum of 18 items. With the same amount of items, the Anxiety related to abandonment scale (e.g. “I worry about being abandoned”) comprises the concerns on the partner’s responsiveness and the need for physical and emotional closeness (Brennan, Clark & Shaver, 1998). ECR has shown high levels of internal consistency, with an $\alpha = 0.86$ for the full scale ($\alpha = 0.73$ in the present study).

My memories of upbringing - EMBU (Perris, Jacobsson, Linndström, Knorring & Perris, 1980; short-form by Arrindell *et al*, 1994; Portuguese validation from the short-form by Canavarro, 1996). To assess the frequency of certain care practices in childhood and adolescence as perceived by the participants, EMBU was selected. It is a self-report questionnaire with 23 items scored by four-point a Likert scale (from “No, never” to “Yes, most of the time”). It differentiates three factors (Overprotection, Emotional warmth and Rejection) each relating, separately, to the father and the mother.

Arrindell and collaborators (1994) relate the Overprotection factor (obtained from the sum of seven items) to imposing strict rules or other parental behavior of excessive protection and intrusion into the activities of the child (e.g. “When I came home I had to tell everything I had done”). The Emotional warmth factor (obtained from the sum of seven items) encompasses a set of parental behaviors in the presence of the child that make him feel approved as an individual. One example is the item “My parents praised me”. The Rejection subscale (sum of nine items for mother and eight items for father) reflects the variety of parenting behaviors with intent to modify the child’s will, felt as a rejection of him. The item “My parents were severe or got angry with me without explaining me why” is an example. The Portuguese validation showed acceptable levels of internal consistency ($\alpha = 0.73$ to the father and $\alpha = 0.74$ to the mother) and test-retest reliability ($r = 0,64, p = 0,005$ to the father and $r = 0.67, p < 0.001$ to the mother). In the present study, EMBU also revealed acceptable levels of internal consistency ($\alpha = 0.64$ to the father and $\alpha = 0.63$ to the mother).

Participants

The sample consists in 86 primiparous fathers recruited at the first trimester of pregnancy. Exclusion criteria were: (a) not reading or writing Portuguese, (b) residing in Portugal less than 10 years, (c) multiparous fathers, (d) under psychoactive drugs prescription, (e) multiple gesta-

tions, (f) risk pregnancies or with gestational problems and (g) baby's chronic health or developmental problems postpartum.

The great majority of the participants were Portuguese (96.5%), Caucasian (91.9%) and Catholic (89.5%). Fathers age range from 20 to 45 years old. More than half of the participants aged between 30 and 39 years old ($M = 31.1$; $SD = 4.2$). The majority were married or cohabiting (90.7%), and living with the partner without any other family members in the household (75.6 %). Most fathers were employed in manual (qualified or not qualified) jobs, for more than 6 years (44.2%), but some are students or unemployed. The majority of the participants (95.3%) had a good or very good pregnancy acceptance (see Table 1).

No significant demographic differences were noted between the participants who proceeded in the study and fathers who dropped out, in terms of: age, $t(90) = -0.803$, $p = 0.424$; nationality, $\chi^2(2) = 0.305$, $p = 0.859$; ethnicity, $\chi^2(3) = 0.965$, $p = 0.810$; religion, $\chi^2(2) = 0.154$, $p = 0.926$; schooling, $t(90) = 0.990$, $p = 0.325$; socio-economic level, $\chi^2(4) = 3.564$, $p = 0.468$; occupational status, $\chi^2(2) = 1.847$, $p = 0.397$; matrimonial status, $\chi^2(2) = 0.143$, $p = 0.931$; household, $\chi^2(4) = 8.425$, $p = 0.077$; and pregnancy acceptance, $\chi^2(2) = 1.575$, $p = 0.665$.

Similarly, no significant differences were observed between participants that completed and that did not complete all the assessments, in terms of: nationality, $\chi^2(2) = 2.293$, $p = 0.318$; ethnicity, $\chi^2(3) = 1.466$, $p = 0.690$; religion, $\chi^2(2) = 0.593$, $p = 0.743$; schooling, $t(85) = -0.537$, $p = 0.593$; socio-economic level, $\chi^2(4) = 2.983$, $p = 0.561$; occupational status, $\chi^2(2) = 1.043$, $p = 0.594$; matrimonial status, $\chi^2(2) = 1.653$, $p = 0.438$; household, $\chi^2(4) = 5.843$, $p = 0.211$; and pregnancy acceptance, $\chi^2(2) = 2.338$, $p = 0.505$. However, significant differences were obtained concerning fathers' age, $t(85) = -2.052$, $p = 0.043$. The group of fathers who completed all four assessment waves was significantly older. Additionally, significant differences were observed regarding the study variables at the first trimester of pregnancy, in terms of: avoidant orientation, $t(75.072) = 2.160$, $p = 0.034$; and paternal rejection, $t(85) = 2.194$, $p = 0.031$. A higher percentage of fathers who completed all the assessments reported less avoidance and paternal rejection. No significant differences were observed concerning other study variables: anxious orientation, $t(85) = 1.152$, $p = 0.253$; paternal overprotection, $t(85) = 0.236$, $p = 0.814$; maternal overprotection, $t(85) = 0.583$, $p = 0.562$; paternal emotional warmth, $t(85) = -0.088$, $p = 0.930$; maternal emotional warmth, $t(85) = -0.004$, $p = 0.997$; and maternal rejection, $t(85) = 1.712$, $p = 0.091$.

Procedure

The current research was conducted in accordance with the Helsinki Declaration and received previous approval from the University of Minho Ethical Commission. A prospective design encompasses four online assessments: (Wave 1) first trimester of pregnancy, 8-14 weeks of gestation, (Wave 2) third trimester of pregnancy, 28-32 weeks of gestation, (Wave 3) childbirth-first month, 1-8 weeks postpartum, and (Wave 4) sixth-seventh month, 26-34 weeks postpartum. In all assessment waves, the same measures were included.

Participants were recruited by convenience method between October 2013 and April 2014, after the first ultrasound (between 8 and 14 gestational weeks), in two Health services in Portugal: Braga Hospital (public service) and Amparo Clinic, Funchal (private service). The recruitment occurred, in two distinct ways: (a) presently, recruited by researchers in the obstetrics outpatient service waiting room; and (b) indirectly, recruited through the partner's phone contact, also collected by researchers in the same outpatient service waiting room. The aims and procedures of the study were explained and confidentiality guaranteed. Participants were neither paid nor compensated. Compliance rate was 91%. After first contact, 134 primiparous fathers agreed verbally to participate. 102 (76.12%) signed an online informed consent form. Throughout the study, 11 (10.78%) participants were excluded for not meeting the inclusion criteria and five (4.90%) dropped out, due to time constraints. Thus, the sample in the present study's design consists in 86 participants, 37 (43.02%) of which completed all four assessments.

Data analytic strategy

The Statistical Package for the Social Sciences, version 22.0 (SPSS Inc., USA) was used for statistical analysis.

In order to assess differences in socio-demographic characteristics and outcome variables among participants who dropped out or not from the present study, and participants who completed and who did not complete all assessments, chi-square association tests and independent samples t-tests were used. Preliminary analysis included the computation of Pearson correlations for all the observed outcome variables.

Individual growth curve models were performed using a multilevel modeling framework (MLM; Duncan, Duncan & Strycker, 2006), to analyze the developmental changes across transition to parenthood of attachment orientations and childhood caretaking memories. This strategy

allows incorporating participants with missing data and has more power to detect linear change than repeated measures ANOVA (Fan, 2003). Growth curves estimate within-individual change through two components that can be assessed between participants: the intercept (outcome variable at the baseline) and the slope (the amount of weekly change from the first to the fourth assessment wave). The intercept and slope interpretation relies on the scaling of time (Biesanz, Deeb-Sossa, Papadakis, Bollen, & Curran, 2004). Means of the intercept describe the average level of the variables at time 0, defined as the date of the first assessment at the first trimester of pregnancy (baseline). The time factor was scored in weeks since the baseline until six months postpartum. The assessment waves 1, 2, 3 and 4 were coded 0, 17.5, 29 and 51, respectively, so that the intercept captures individual differences at the prenatal assessment (i.e., when time equals 0) and the mean of the slope describes the change in one unit of time.

Statistical analyses were performed in a pairwise person-period dataset, in which each participant had a record for each time point. All participants included in the current study had complete data at a minimum of one time point to inform imputation. The resulting data consisted of 344 potential observations (86 participants by four time points). 6 % of the observations at wave 1 were missing data, 29 % missingness at wave 2, 40 % missingness at wave 3, and 35 % missingness at wave 4. Scholars suggest 50–75 % missingness as an acceptable upper limit (Newman, 2003).

In order to study goals 1, 2 and 3, one moderated growth curve model per attachment orientation variable was conducted. Models 1 and 2 assessed, respectively, initial levels and change trajectories of anxious and avoidant attachment orientations across the transition to parenthood. Fixed effects for caretaking memories perception at the baseline and over time (separately, paternal and maternal overprotection, paternal and maternal emotional warmth and paternal and maternal rejection) were also included in the models. The fixed and random effects for each model are presented at Table 3. Deviance difference tests for models 1 and 2 were performed between unconditional models and models with predictors to examine model fit improvements.

Regarding perception of early caretaking memories trajectory, in the current study's goal 2, six unconditional growth models were performed, for each EMBU variable. Respectively, models 3, 4, 5, 6, 7 and 8 estimated, initial levels and change trajectories of paternal overprotection, emotional warmth and rejection and maternal overprotection, emotional warmth and rejection. The

effect size r was estimated and interpreted according to Cohen's guidelines (Rosenthal, Rosnow, & Rubin, 2000).

Results

Preliminary analyses

For descriptive purposes, Table 2 presents the results of simple univariate correlations among the key variables of interest in the present study. With few exceptions, significant large to small size correlations were found at the first trimester of gestation (baseline), suggesting that the majority of the scores covary.

The deviance difference tests revealed that the anxious orientation model, $\chi^2(12) = 40.545$, $p < .001$, and the avoidant orientation model, $\chi^2(12) = 63.324$, $p < .001$, provided good fit to the data, indicating that in each model the predictors explained variance.

Effects of childhood caretaking memories perception on fathers' anxious and avoidant attachment orientations at the first trimester of pregnancy

Marginal effects of early caretaking memories perception were found in fathers' anxious orientation across the transition to parenthood (see Model 1 in Table 3). At the first trimester of pregnancy, data shows a small effect of maternal rejection perception on anxious orientation [$b = 0.664$, $p = 0.095$, effect size $r = 0.198$]. Fathers with higher perception of rejection from their mother revealed higher levels of attachment anxiety. No significant main effects of other childhood caretaking memories were found in father's anxious orientation (see Model 1 in Table 3).

Significant main effects of maternal emotional warmth perception were found in fathers' avoidant orientation (see Model 2 in Table 3). At the baseline, fathers with higher scores on maternal emotional warmth showed lower levels of attachment avoidance, $b = -0.822$, $p < .001$, effect size $r = 0.753$. Present study found small effects of paternal emotional support in fathers' avoidant orientation (see Model 2 in Table 3). At the first trimester, fathers who perceived more emotional support from their own father revealed higher levels of attachment avoidance, $b = 0.301$, $p = 0.086$, effect size $r = 0.204$. No main effects of parental overprotection or rejection memories perception were found (see Model 2 in Table 3).

Adult attachment trajectory from the first trimester of pregnancy to six months postpartum.

A multilevel growth curve model was conducted, firstly, to evaluate the trajectory of attachment anxiety across the four assessed waves during the transition to parenthood (see Model 1 in Table 3 and Figure 1). Main effects for time were not found, with an average increase of 0.014 units per week, $p = 0.615$, effect size $r = 0.037$. Similarly, growth curve model 2 did not find a significant effect of time on fathers' avoidant orientation. From the first trimester of pregnancy to six months postpartum, fathers' avoidant orientation was stable, averaging 0.000 units per week, $p = 0.984$, $r = 0.000$ (see Model 2 in Table 3 and Figure 1).

Early caretaking memories perception trajectory from the first trimester of pregnancy to six months postpartum.

Unconditional growth curve models assessed developmental changes on paternal overprotection, emotional warmth and rejection perception over the transition to parenthood. There was not a significant effect of time on fathers' paternal overprotection, $b = -0.000$, $p = 0.761$, $r = 0.008$ (see Model 3 in Table 4 and Figure 2), emotional warmth, $b = -0.001$, $p = 0.566$, $r = 0.028$ (see Model 4 in Table 4 and Figure 2), and rejection perception, $b = 0.001$, $p = 0.310$, $r = 0.094$ (see Model 5 in Table 4 and Figure 2).

Models 6 to 8 tested effects of time on maternal overprotection, emotional warmth and rejection from the first trimester of pregnancy to six months postpartum. Father's perception was stable, regarding maternal overprotection [$b = -0.000$, $p = 0.780$, $r = 0.007$] (see Model 6 in Table 5 and Figure 3), emotional warmth [$b = -0.001$, $p = 0.568$, $r = 0.027$] (see Model 7 in Table 5 and Figure 3) and rejection memories [$b = 0.002$, $p = 0.223$, $r = 0.134$] (see Model 8 in Table 5 and Figure 3).

Effects of childhood caretaking memories perception on fathers' anxious and avoidant attachment orientations from the first trimester of pregnancy to six months postpartum

No significant interaction effects of time and parental overprotection, emotional warmth or rejection perception were found in fathers' anxious orientation (see Model 1 in Table 3).

Interaction effects of maternal emotional support perception and time were found in fathers' avoidant orientation. This result suggests a moderator effect. The effect of maternal emotional

warmth perception on fathers' avoidant orientation trajectory changes as a function of time [$b = 0.022$, $p = .026$, effect size $r = 0.329$] (see Model 2 in Table 3). Figure 4 shows a steeper decrease of avoidant scores across time in fathers with high maternal emotional memories.

Marginal interaction effects of paternal emotional warmth and time were found in fathers' avoidance attachment. This result suggests a small effect of paternal emotional warmth on fathers' avoidant orientation trajectory changes as a function of time [$b = -0.017$, $p = .054$, effect size $r = 0.252$] (see Model 2 in Table 3). Fathers with higher paternal emotional warmth scores show a tendency to decrease avoidant attachment scores from the first trimester of pregnancy to six months postpartum (see Figure 5).

No significant interaction effects of parental overprotection or rejection memories perception and time were found in fathers' avoidant orientation (see Model 2 in Table 3).

Discussion

The current study provides a more comprehensive view of attachment orientations, across the transition to fatherhood, while focusing on the stability or discontinuity of adult attachment insecure orientations.

Contrary to the hypotheses, data showed that attachment orientation was stabilized throughout the assessment waves. Accordingly, data did not show trajectory changes in perception of childhood caretaking. This body of results suggests an influence of prototype-like dynamics across the parenthood transition (Fraley, 2002). In this period, early caretaking memories are examined in terms of parents' nurturance, displays of aggression, distance or intrusiveness and over-involvement (Cowan & Cowan, 1992). Perceptions incongruent with working models must be produced by external factors (e.g. contextual factors). Stability or change of attachment orientations across the transition to parenthood is an active process. Such process, in dynamic tension with model-incongruent information, generates model-congruent information through fathers' perceptions of their current relationships and behavior (Fraley & Shaver, 2000; Simpson, Rholes, Campbell & Wilson, 2003). The present research suggests that these cognitive representations are self-preserving processes, perpetuating early caretaking memories and, consequently, attachment working models across the transition to parenthood.

The current study intended to test main effects of caretaking memories perception on fathers' attachment orientation at the baseline. Supporting the first hypothesis, an effect of early

maternal rejection memories on anxious orientation was found. During early months of pregnancy, fathers who perceived negatively their childhood relationship with their own mother, were more anxious in close relationships. Fathers recalled their mothers, potentially their primary caregiver, as less affectionate and more punitive or favorable to others. This marginal effect is supported by attachment literature (Fraley & Shaver, 2000). Comparing on secure and anxious-ambivalent orientations, Hazan and Shaver (1987) found similar results, revealing that securely attached participants recalled their parents as being accepting, opposite to highly anxious-ambivalent individuals who maintained recollections of abandonment interactions (Collins & Feeney, 2000). Because the current data found stability on trajectories of anxious orientation and rejection perception, it is suggested that working models of anxiety may be actively sustained, in part, by model-congruent prenatal perceptions regarding the way fathers' self and social environment are perceived (Rholes, Simpson, Campbell & Grich, 2001).

The remaining main effects found at the baseline will be discussed in light of the moderating effects also found in present research. Fathers with low maternal emotional warmth scores enter the transition to parenthood highly avoidant. In Hazan and Shaver's (1987) study, recollections of a cold and unsupportive caregiver have been related to avoidant individuals. Moreover, current data show that fathers with low maternal emotional warmth tend to increase more steeply across time on avoidant scores. Regarding fathers with low paternal emotional warmth scores the interaction effect with time on avoidance is similar. Possibly, as perceptions of early emotional support stay low, fathers keep their attachment system deactivated and cope with attachment related threats by distancing emotionally (Bowlby, 1988). Those interaction effects may be due to fathers starting to develop parental roles, responsibilities and supportiveness attitudes, according to the repetitive childrearing patterns of their own fathers, which may or may not be positive experiences (Cowan & Cowan, 1992). The data contribute to the notion that individuals harboring dissatisfaction about the availability of emotional support from both parents become more self-reliant and avoidant in close relationships (Fraley & Shaver, 2000; Simpson, Rholes, Campbell & Wilson, 2003). After childbirth, the need to provide constant care to a newborn, threatens fathers' independence. Unable to detach, highly avoidant fathers may have more difficulty regulating their negative affection, which increases avoidant orientation scores (Rholes, Simpson, Campbell & Grich, 2001).

Contrary to the first hypothesis, entering the transition to parenthood, fathers with memories of a highly emotional warming father show higher scores of avoidant orientation, implying gender specificities. This marginal result may suggest that in early gestation, developmental tasks such as expanding a father identity, while revising memories of their own supporting father, may be difficult for all parents-to-be (Cowan & Cowan, 1992). It should be noted that avoidant strategies such as deactivation of the attachment system, that may be set in fathers with more negative memories of early parental emotional warmth, might represent an adaptive response to interactions with a cold or unreliable relationship partner (Mikulincer & Shaver, 2012). Future research should study the role played by couple and partner variables concerning attachment orientation, across the transition to parenthood.

Opposite interaction effects of maternal and paternal emotional warmth with time were found. Fathers with memories of a highly emotional warming mother begin the transition to parenthood with avoidance levels below the model's trajectory and become lesser avoidant across the transition to parenthood. A decreasing tendency is similar in fathers with high paternal emotional scores. Maintenance on a romantic interaction and a relationship formation with a baby may dampen avoidance scores, while sensitivity to cues of cold interactions decrease. It is suggested that, by investing in parental and marital roles while reinforcing their own parents' representation, fathers with high parental emotional warmth scores become more secure as their close interactions require appropriate interpersonal behavior (Chopik, Edelstein & Fraley, 2013).

This body of results suggests that attachment representational models developed in early infancy continue to affect relational behavior, thought, and feeling in adulthood, interfering with adjustment to normative life transitions and intimate relationships. According to the analyses and models presented, early attachment prototypes can have some influence on patterns of continuity (Fraley, 2002).

Limitations

Some methodological limitations should be underlined regarding the present research. Firstly, albeit EMBU relates to memories with attachment figures and ECR to the interactions with current attachment figures, none of those measures map entirely onto father's internal working models, making it not feasible to examine such representations. Moreover, there's bias associated with the type of measures (self-report) employed, the sampling method (non-

representative) and the sample size. Models 1 and 2 may be overly complex for the sample size. Thus, marginal results from those models must be interpreted cautiously.

It is possible that the inclusion of a broader and more heterogeneous sample of fathers would lead to additional development of the themes studied. The findings presented may be culture-specific, whereby further research is necessary, specifically with other ethnic groups. Besides, this research did not include a non-transition control group, thus, generalization of the results to the population transitioning to parenthood must be carefully drawn.

Concluding remarks

Despite these limitations, the present findings advance life span perspectives on attachment research by understanding attachment dynamics across the transition to parenthood. It documents differences in attachment orientations and the extent to which perceived negative early caretaking memories affect insecure orientations. Early working models regarding emotional warmth may be particularly activated and manifest in the context of the transition to parenthood, contributing to the quality of the attachment interactions within this period. The findings also highlight the importance of social role theories on personality development and transition to parenthood.

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Tables

Table 1

Participant's sociodemographic characteristics at the first trimester of pregnancy (baseline).

Characteristic		<i>N</i> = 86 (%)
Age (years)	20-29	28 (32.6)
	30-39	56 (65.1)
	≥ 40	2 (2.3)
Socio-economic level	High	26 (30.2)
	Medium high	12 (14.0)
	Medium	24 (27.9)
	Medium low	17 (19.8)
	Low	7 (8.1)
Education (in years)	< 9	9 (10.5)
	[9-12]	46 (53.5)
	> 12	31 (36.0)
Professional status	Employed	75 (87.2)
	Unemployed	8 (9.3)

	Household or student	3 (3.5)
Matrimonial status	Married	59 (68.6)
	Cohabitation	19 (22.1)
	Single	8 (9.3)
Household	Partner	65 (75.6)
	Partner and family	14 (16.3)
	Family (only)	7 (8.1)
Pregnancy acceptance	Bad	1 (1.2)
	Neither good or bad	3 (3.5)
	Good	10 (11.6)
	Very good	72 (83.7)

Table 2

Correlation matrix of study variables at the first trimester of pregnancy (baseline).

Variables	1	2	3	4	5	6	7	8
1. Anxious orientation	1.00							
2. Avoidant orientation	0.18	1.00						
3. Paternal overprotection	0.24*	0.05	1.00					
4. Maternal overprotection	0.29**	0.01	0.68***	1.00				
5. Paternal emotional warmth	-0.05	-0.26*	0.24*	0.25*	1.00			
6. Maternal emotional warmth	-0.07	-0.40***	0.32**	0.33**	0.86***	1.00		
7. Paternal rejection	0.38***	0.20†	0.32**	0.16	-0.42***	-0.23*	1.00	
8. Maternal rejection	0.42***	0.23*	0.21†	0.47***	-0.24*	-0.19†	0.59***	1.00

Notes: † $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 3

Father's attachment orientations' trajectory at the first, third trimester of pregnancy, child-birth and sixth month postpartum: Effects of early caretaking memories.

Fixed effects	Model 1			Model 2		
	Anxious orientation			Avoidant orientation		
	<i>b</i>	<i>SE</i>	<i>95% CI</i>	<i>b</i>	<i>SE</i>	<i>95% CI</i>
Intercept	1.18	0.67	[-0.15, 2.50] †	2.44	0.47	[1.52, 3.36]***
Time	0,01	0,03	[-0.04, 0.07]	0.00	0.02	[-0.04, 0.04]
Paternal over-protection	-0.07	0.38	[-0.82, 0.68]	0.10	0.26	[-0.42, 0.63]
Maternal over-protection	0.41	0.35	[-0.29, 1.11]	-0.05	0.25	[-0.54, 0.44]
Paternal emotional warmth	0.17	0.25	[-0.32, 0.66]	0.30	0.17	[-0.04, 0.64] †
Maternal emotional warmth	-0.30	0.29	[-0.87, 0.27]	-0.82	0.20	[-1.22, -0.42]***
Paternal rejection	0.49	0.45	[-0.39, 1.38]	0.08	0.31	[-0.54, 0.70]
Maternal rejection	0.66	0.40	[-0.12, 1.44] †	0.42	0.28	[-0.12, 0.97]
Paternal over-protection x Time	-0.01	0.02	[-0.04, 0.02]	-0.01	0.01	[-0.03, 0.02]
Maternal over-protection x Time	0.00	0.01	[-0.03, 0.03]	-0.01	0.01	[-0.03, 0.01]
Paternal emotional warmth x Time	0.01	0.01	[-0.02, 0.03]	-0.02	0.01	[-0.03, 0.00]†

Maternal emotional warmth x Time	-0.00	0.01	[-0.03, 0.02]	0.02	0.01	[0.00, 0.04]*
Paternal rejection x Time	-0.00	0.02	[-0.04, 0.03]	-0.01	0.01	[-0.03, 0.02]
Maternal rejection x Time	-0.00	0.02	[-0.03, 0.03]	0.01	0.01	[-0.01, 0.03]
<hr/> Random effects						
Intercept + Time	0.00	0.00	[0.00, 0.00]*	0.00	0.00	[0.00, 0.00]**
Residuals	0.71	0.07	[0.57, 0.87]***	0.34	0.04	[0.27, 0.42]***

Notes. *SE* = Standard error; *CI* = Confidence interval

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 4

Early paternal caretaking memories' trajectory in fathers at the first, third trimester of pregnancy, childbirth and sixth month postpartum.

Fixed effects	Model 3			Model 4			Model 5		
	Paternal overprotection			Paternal emotional warmth			Paternal rejection		
	<i>b</i>	<i>SE</i>	95% <i>CI</i>	<i>b</i>	<i>SE</i>	95% <i>CI</i>	<i>b</i>	<i>SE</i>	95% <i>CI</i>
Intercept	1.80	0.03	[1.73, 1.86]***	2.85	0.05	[2.74, 2.96]***	1.20	0.02	[1.16, 1.24]***
Time	-0.00	0.00	[-0.00, 0.00]	-0.00	0.00	[-0.01, 0.00]	0.00	0.00	[-0.00, 0.00]
Random effects									
Intercept + Time	0.00	0.00	[0.00, 0.00]*	0.00	0.00	[0.00, 0.00]*	0.00	0.00	[0.00, 0.00]**
Residuals	0.12	0.01	[0.09, 0.14]***	0.31	0.03	[0.25, 0.38]***	0.04	0.00	[0.03, 0.05]***

Notes. *SE* = Standard error; *CI* = Confidence interval

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 5

Early maternal caretaking memories' trajectory in fathers at the first, third trimester of pregnancy, childbirth and sixth month postpartum.

Fixed effects	Model 6			Model 7			Model 8		
	Maternal overprotection			Maternal emotional warmth			Maternal rejection		
	<i>b</i>	<i>SE</i>	95% <i>CI</i>	<i>b</i>	<i>SE</i>	95% <i>CI</i>	<i>b</i>	<i>SE</i>	95% <i>CI</i>
Intercept	1.95	0.04	[1.88, 2.02]***	2.99	0.05	[2.90, 3.08]***	1.24	0.02	[1.20, 1.28]***
Time	-0.00	0.00	[-0.00, 0.00]	-0.00	0.00	[-0.01, 0.00]	0.00	0.00	[-0.00, 0.00]
Random effects									
Intercept + Time	0.00	0.00	[0.00, 0.00]*	0.00	0.00	[0.00, 0.00]**	0.00	0.00	[0.00, 0.00]***
Residuals	0.13	0.01	[0.11, 0.17]***	0.24	0.03	[0.19, 0.29]***	0.04	0.00	[0.03, 0.05]***

Notes. *SE* = Standard error; *CI* = Confidence interval

* $p < .05$; ** $p < .01$; *** $p < .001$.

Figure 1

Father's attachment orientation's trajectory at the first, third trimester of pregnancy, childbirth and sixth month postpartum.

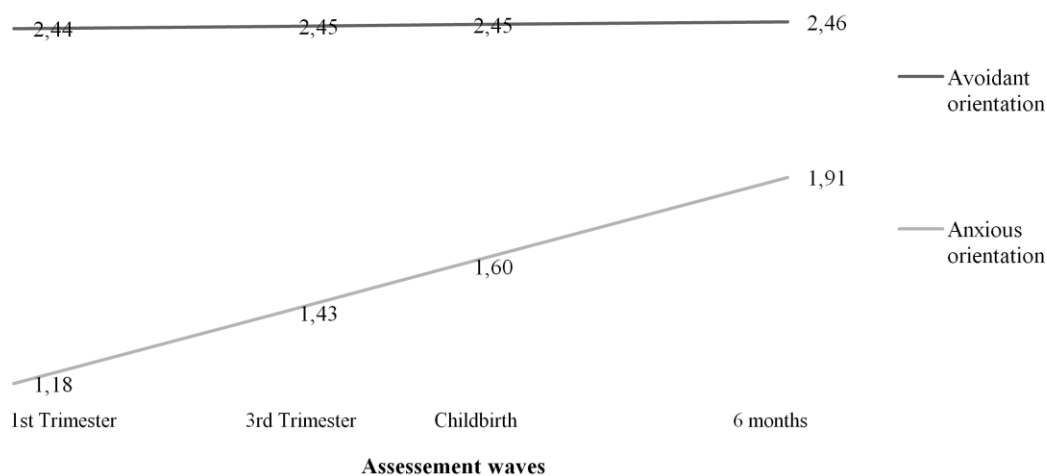


Figure 2

Father's early paternal caretaking memories perception's trajectory at the first, third trimester of pregnancy, childbirth and sixth month postpartum.

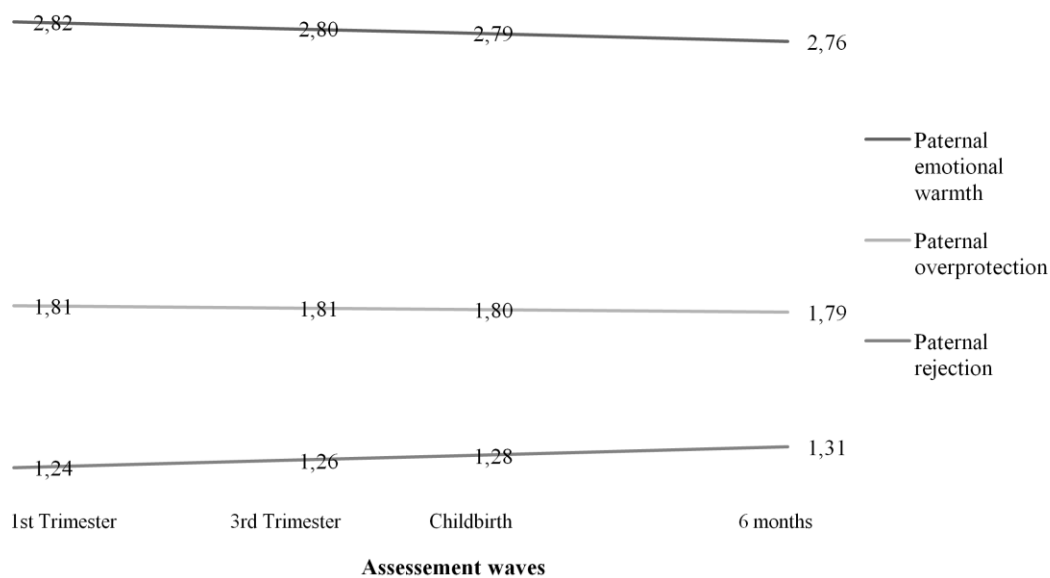


Figure 3

Father's early maternal caretaking memories perception's trajectory at the first, third trimester of pregnancy, childbirth and sixth month postpartum.

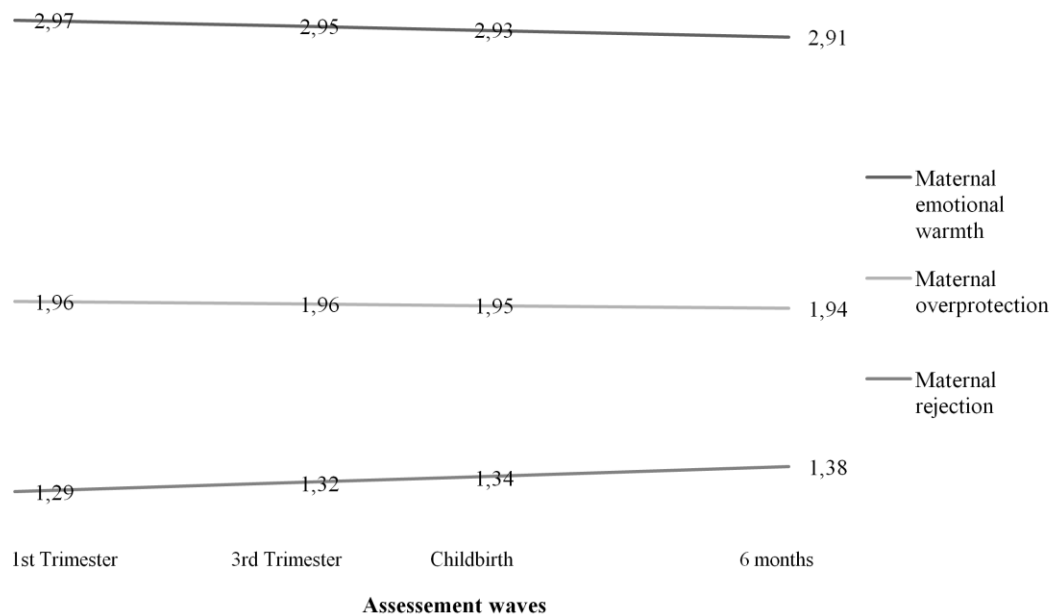


Figure 4

Avoidant orientation's trajectory in fathers at the first, third trimester of pregnancy, childbirth and sixth month postpartum: Moderation by maternal emotional warmth.

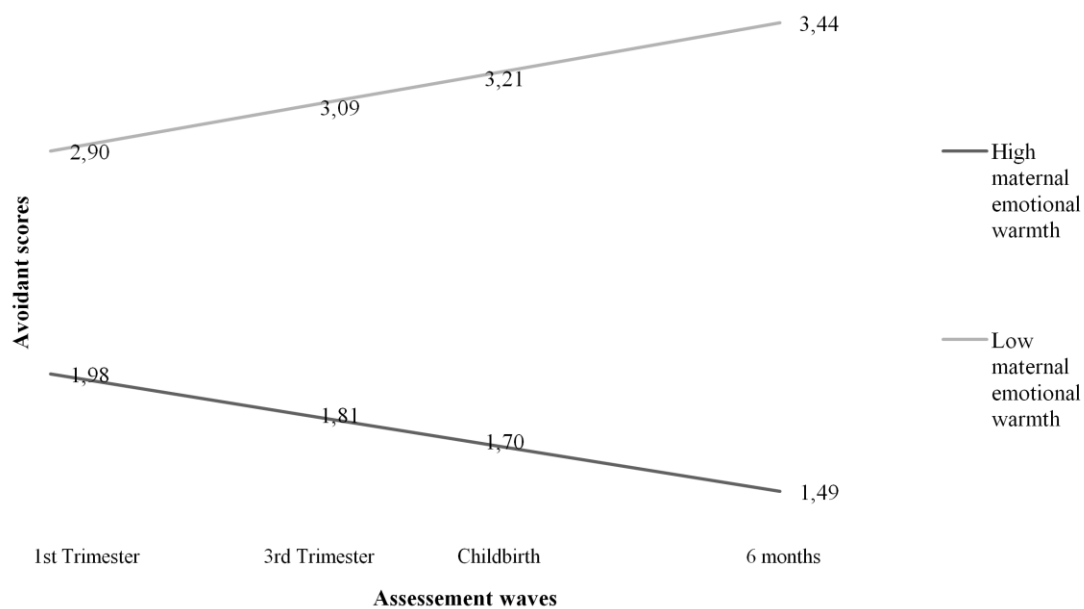


Figure 5

Avoidant orientation's trajectory in fathers at the first, third trimester of pregnancy, childbirth and sixth month postpartum: Moderation by paternal emotional warmth.

