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Fathers' Experiences During Pregnancy: Paternal Prenatal Attachment and Representations of the Fetus

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Positive attachment experiences during infancy are linked to positive developmental outcomes of children later in life. The parent–infant relationship does not start upon the birth of the child, but already evolves during pregnancy. In this exploratory study, fathers' experiences during pregnancy are investigated, focusing on their relationship with the unborn baby. At 26 weeks gestational age, expectant fathers from a Dutch community-based sample ($N = 301$) completed questionnaires concerning feelings of attachment to the fetus and psychological well-being. The semistructured Working Model of the Child Interview was conducted to assess the “meaning” the unborn child has to the father (i.e., the internal representation of the fetus). Results show that the quality of fathers' prenatal attachment and their representations of the fetus were interrelated. Fathers who reported a higher quality of prenatal attachment were more likely to have balanced representations of their unborn children, whereas fathers with a lower quality of attachment were more likely to show disengaged representations. Furthermore, the quality of fathers' self-reported prenatal attachment was higher when fathers experienced fewer symptoms of depression and anxiety during pregnancy, when they were younger, and when they expected their first child. These factors were not significantly related to fathers' internal representations of the fetus. Further research is needed to examine the effects of the prenatal father–infant relationship on postnatal father–child attachment, infant behavior, and infant development.

Keywords: father, infant, internal representations, prenatal attachment, WMCI

Over the past decades, research concerning the parent–infant relationship has predominantly focused on mothers. This could be attributed to the societal role patterns in the mid-20th century, where mothers were generally seen as the primary caregivers who stayed home and took care of their children, while fathers worked outside of the home to financially provide for the family. Nowadays, however, these traditional role patterns are less prevalent in

Western society. This is reflected in more mothers working part-time or full-time outside of the home, and fathers often taking a more active role in the upbringing of their children (Amato, Meyers, & Emery, 2009; Lamb & Tamis-LeMonda, 2004; Maume, 2011). For many years mothers were seen as the most important attachment figure in the child's life, but with increasing role differentiation, the father's role has become more and more important (van IJzendoorn & de Wolff, 1997; Lamb & Tamis-LeMonda, 2004).

Studies investigating the role of the father in child development have focused on a range of different aspects of fathers and the father–child relationship, such as paternal emotional well-being, father–child attachment, and the quality of father–child interactive behavior (Grossmann et al., 2002; Hjelmstedt & Collins, 2008; van IJzendoorn & de Wolff, 1997; Lundy, 2002; Paquette, 2004; Ramchandani, Stein, Evans, & O'Connor, 2005; Sarkadi, Kristiansson, Oberklaid, & Bremberg, 2008; Schoppe-Sullivan et al., 2006; Trautmann-Villalba, Gschwendt, Schmidt, & Laucht, 2006). Overall, these studies have shown that fathers' active and regular engagement with their children has a positive effect on children's social, behavioral, psychological, and cognitive development later in life (Sarkadi et al., 2008). Specific paternal factors that contribute to later child development are fathers' depressive symptoms, the quality of play sensitivity, and paternal responsiveness (Fletcher, Freeman, Garfield, & Vimpani, 2011; Grossmann et al., 2002; Ramchandani et al., 2005; Trautmann-Villalba et al., 2006). More emotional and behavioral problems among children have

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been found when fathers experienced more depressive symptoms, if they were less responsive, or if they were less sensitive during interactions with their children.

Even though research has come to show that fathers have an important influence on the development of their children (Grossmann et al., 2002; Lamb, Hwang, Frodi, & Frodi, 1982; Williams & Kelly, 2005), little research has focused on the *early* father–child relationship. A study by Ramchandani et al. (2013) recently found disengaged and avoidant interactions of fathers with their infants, as early as the third month of life, to predict early behavioral problems in children (Ramchandani et al., 2013). However, the early relationship already starts to evolve before the child is born (Brandon, Pitts, Denton, Stringer, & Evans, 2009; Raphael-Leff, 2005). Therefore, the current study investigates fathers' experiences during pregnancy, specifically focusing on the relationship they have with their unborn child.

Guiding Theoretical Framework: The (Prenatal) Parent–Infant Relationship

Parental warmth, nurture, and closeness of both mothers and fathers are associated with positive child development. When children have secure, supportive, and sensitive relationships with their parents, they are generally better psychologically adjusted than children who have less satisfying relationships with their parents (Belsky, Garduque, & Hrcir, 1984; DeKlyen & Greenberg, 2008; Grossmann et al., 2002; Lamb et al., 1982; Lyons-Ruth & Jacobvitz, 2008; Rees, 2005; Sroufe, 2005; Sroufe, Egeland, Carlson, & Collins, 2005; Weinfield, Sroufe, Egeland, & Carlson, 2008; Williams & Kelly, 2005). In shaping the quality of the parent–child relationship, individual parental characteristics such as parental warmth, nurture, and closeness are considered to be more important than parent gender (Lamb & Tamis-LeMonda, 2004). Additionally, a meta-analysis by van IJzendoorn and de Wolff (1997) has shown that the quality of attachment relationships that infants form with their fathers and mothers may differ and that attachment appears more relationship-specific than infant-specific. This means that children may either form an (in)secure relationship with both of their parents, but could also form a secure relationship with one parent and an insecure relationship with the other one. There seems to be no difference, however, in the frequency of secure attachment relationships with fathers and mothers (van IJzendoorn & de Wolff, 1997).

Even though the concept of parent–infant attachment has received quite a lot of attention, relatively few studies have focused on the parent–infant relationship during pregnancy. During this time, parents psychologically prepare themselves for life with their child. In this process, they generally develop expectations of the future and start to have ideas and fantasies about (life with) the unborn baby (Benoit, Parker, & Zeanah, 1997; Theran, Levendosky, Bogat, & Huth-Bocks, 2005; Zeanah, Benoit, Barton, & Hirshberg, 1996). Although this period is an important time of transition for fathers-to-be, studies concerning parents' relationships with the unborn baby during pregnancy have mainly focused on experiences of mothers. Slade, Cohen, Sadler, and Miller (2009) argued that, during pregnancy, fathers may face several challenges. Genesoni and Tallandini (2009) refer to pregnancy of the partner as the most difficult period in terms of psychological adjustment. Fathers are, on one hand, expected to develop repre-

sentations of the unborn baby and to build an attachment relationship with a child they have not met. While, on the other hand, they do not experience the same physiological changes women undergo during pregnancy. This may make the pregnancy less tangible. In this phase, it may be hard for fathers to experience the unborn baby as a real child. Besides that, fathers may experience changes in the relationship with their partner as well as several stressors specifically associated with pregnancy, such as concerns for the well-being of the unborn child and the mother (Dunkel Schetter, 2011; Whisman, Davila, & Goodman, 2011). These challenges may be time-consuming and may preoccupy the father, negatively influencing the relationship he is able to form with the unborn baby. In mothers, the parent–fetus relationship was found to be related to the quality of the postnatal mother–infant relationship (Benoit et al., 1997; Müller, 1996; Siddiqui & Häggelöf, 2000; Theran et al., 2005). There is a lack of knowledge about the relationship that fathers form with their unborn babies during pregnancy, even though this, like for mothers, may also have important implications for the father–infant relationship once the child is born.

Research of the mother–fetus relationship has mainly focused on two different theoretical concepts. The first concept is known as *prenatal attachment*, which focuses on behaviors, attitudes, thoughts, and feelings that demonstrate care and commitment toward the fetus (Van den Bergh & Simons, 2009). Prenatal attachment can be described as the unique relationship that develops between parent and fetus. This relationship may be represented by an affiliation and interaction with the unborn baby and the desire of the parent to know and to be with the unborn baby (Brandon et al., 2009). Maternal prenatal attachment is usually measured by self-report questionnaires, such as the Maternal Fetal Attachment Scale (Cranley, 1981), Maternal Antenatal Attachment Scale (MAAS) (Condon, 1993) and Prenatal Attachment Inventory (PAI) (Müller, 1993; Van den Bergh & Simons, 2009). Condon (1993) has developed a questionnaire to specifically examine the prenatal attachment of fathers toward the unborn baby, known as the Paternal Antenatal Attachment Scale (PAAS). This instrument has been used in several studies and consists of two subscales. The subscale *quality of attachment* represents affective experiences such as closeness/distance and tenderness/irritation toward the fetus. The subscale *intensity of preoccupation* represents the amount of time fathers spend thinking about, talking to, dreaming about or palpating the fetus.

A second concept that is often used to study the mother–fetus relationship concerns the internal working models mothers have of their unborn children. This concept is based on the principles of attachment theory (Ainsworth & Bowlby, 1991; Bretherton, 1992). Internal working models or representations of relationships are a set of tendencies to behave in particular ways in intimate relationships (Zeanah & Smyke, 2009). Representations are ideas, fantasies, and schemes that are based on experiences in daily interactions. Representations that mothers develop of their unborn children can be assessed through their subjective narrative patterns when describing experiences with the fetus (Zeanah, 2000). These representations provide information about the “meaning” a child has to his or her mother. The mother is asked about her experiences with and perceptions of the fetus, (future) parenting, and the relationship with the fetus. Prenatal representations were found related to postnatal representations mothers have of their infants, traditional infant attachment classifications, and the quality of

postnatal mother–infant interactions. When mothers have balanced prenatal representations, they more often have balanced postnatal representations. They also demonstrate more positive parenting, and their children show more optimal and secure attachment relationships (Benoit et al., 1997; Dayton, Levendosky, Davidson, & Bogat, 2010; Theran et al., 2005).

One of the few instruments designed to study prenatal representations of the infant, is the Working Model of the Child Interview (WMCI) (Zeanah et al., 1996). This is a semistructured interview used to elicit parental ideas, expectations, and experiences about the (unborn) child and the relationship with the child. With the WMCI, prenatal representations can be classified into one of three different types of representations: balanced, disengaged, or distorted. When a parent has a *balanced* representation of the unborn baby, (s)he seems to be engrossed in the relationship with the baby and the representation is open to change as new information about the baby becomes available. *Disengaged* representations are characterized by a sense of coolness, indifference, or emotional distance from the baby. Descriptions of the baby and the parent's relationship with the baby are unelaborated. Finally, *distorted* representations are characterized by internal inconsistencies within the representation. Descriptions of the baby are often incoherent, confused, contradictory, or even bizarre. The expressed emotions about the baby generally lack contextual meaning (Benoit et al., 1997; Zeanah & Benoit, 1995). Disengaged as well as distorted representations can also be classified as *nonbalanced representations* (Zeanah, Benoit, Hirshberg, Barton, & Regan, 1994). As far as we know, studies concerning fathers' prenatal representations of their unborn children as measured with the WMCI have not yet been published (Vreeswijk, Maas, & van Bakel, 2012).

Fathers' Experiences During Pregnancy

A limited number of studies have focused on different aspects of fathers' experiences of pregnancy and the fetus. Habib and Lancaster (2010), for example, found that feelings of prenatal attachment increase between the first and third trimester of pregnancy in first-time expectant fathers. This is in accordance with results found in mothers, who also report increases in feelings of attachment during the course of pregnancy (van Bussel, Spitz, & Demyttenaere, 2010). Besides psychological changes, physiological and hormonal changes have been observed in men during and shortly after pregnancy. They generally experience significant changes in concentrations of prolactin, cortisol, and concentrations of testosterone pre- and postnatally, in line with patterns found in women (Alvergne, Faurie, & Raymond, 2009; Gettler, McDade, Feranil, & Kuzawa, 2011; Storey, Walsh, Quinton, & Wynne-Edwards, 2000). These results illustrate that not only women experience major changes during pregnancy, but that expectant fathers are also directly affected in their psychological and physical functioning.

Several studies have shown that maternal psychological well-being significantly relates to the quality of the mother–fetus attachment relationship. For example, mothers with higher levels of antenatal anxiety and depression, showed less optimal feelings of mother–fetal attachment (Hart & McMahon, 2006). When specifically considering internal representations, mothers with higher levels of depressive symptoms were more often found to have

nonbalanced representations of their children (Korja et al., 2009; Minde, Tidmarsh, & Hughes, 2001; Rosenblum, McDonough, Muzik, Miller, & Sameroff, 2002; Wood, Hargreaves, & Marks, 2004). Also, mothers with symptoms of posttraumatic stress more often have distorted than disengaged representations (Armstrong & Hutti, 1998; Hart & McMahon, 2006; Schechter et al., 2008, 2005). Not only mothers, but also fathers may experience psychological distress when their partners are pregnant (Condon, Boyce, & Corkindale, 2004; Leathers & Kelley, 2000). Therefore, effects of symptoms of depression and anxiety on the father–fetus relationship will be considered in this study. It is expected that higher levels of depressive symptoms and anxiety of fathers will negatively influence the quality of their representations and prenatal attachment to the unborn baby.

The current study was conducted in the Netherlands and is among the first to systematically explore fathers' experiences of the unborn child during pregnancy. Because this is an exploratory study, a multidimensional approach was chosen to investigate the father–fetus relationship. The PAAS was used to measure levels of prenatal attachment, and the WMCI was administered to determine fathers' prenatal representations of their unborn babies. It is expected that fathers' self-reported feelings of prenatal attachment will be related to their prenatal representations of the fetus.

Method

Participants

The sample consisted of 301 expectant fathers. Fathers had a mean age of 34.01 years ($SD = 4.59$; Range = 27.29–49.60) and were predominantly Dutch (80.4%); 64.2% of the fathers had a college degree, 96.6% were employed, and 54.7% of the fathers were expecting a first child. At 26 weeks gestational age, fathers completed several questionnaires. Fathers ($N = 243$) who gave consent to conduct a home visit also participated in a semistructured interview.

Measures

Internal representations of the unborn baby. The WMCI (Zeanah et al., 1996) is a semistructured interview that focuses on the “meaning” that a child has to his or her parent or caregiver by asking the parent about his or her subjective experiences and perceptions of the child, parenting, and the relationship with the child. For the present study, the prenatal Dutch version of the WMCI was used. Fathers were asked questions concerning their experiences during their partner's pregnancy, their relationship with the unborn baby, and expectations they had for their child's future. The interviews were conducted during a home visit and lasted approximately 45 min. Each interview was videorecorded and coded afterward by two trained and reliable raters according to a specific coding scheme (Vreeswijk et al., 2012; Zeanah et al., 1994). The raters were first independently trained to rate the WMCI with official practice and reliability tapes. Then, to determine the interrater reliability, 59 interviews in our sample were double-coded. Significant interrater reliability of 80% was established (Cohen's $\kappa = .669$, $p < .001$). As described earlier, fathers' representations were classified into one of the three main categories.

ries of internal representations: balanced, disengaged, or distorted (Zeanah et al., 1994).

Father–fetus attachment. The PAAS (Condon, 1993) (Dutch translation by Colpin, De Munter, Nys, & Vandemeulebroecke, 1998) is a 16-item self-report questionnaire that was constructed to measure father-to-fetus attachment. It has adequate psychometric properties, with acceptable levels of split-half reliability and internal consistency ($\alpha > .80$). A total score of global father-to-fetus attachment can be calculated by adding up the scores of the individual items. Additionally, scores on the subscales quality of attachment (PAAS QA) and intensity of preoccupation (PAAS IP) can be calculated. An example item of PAAS QA is “When my baby is born I would like to hold the baby.” An example item of PAAS IP is “Over the past 2 weeks I have had the desire to read about or get information about the developing baby.” Higher scores on the PAAS represent stronger feelings of father-to-fetus attachment (Condon, 1993).

Fathers’ psychological well-being. The presence of depressive symptoms was assessed using the Dutch version of the Edinburgh Depression Scale (EDS) (Cox, Holden, & Sagovsky, 1987), a 10-item self-report questionnaire that was initially designed to screen for postnatal depression in women. The split-half reliability (.88) and internal reliability ($\alpha = .87$) of the EDS are adequate (Cox et al., 1987). In the past decades, the EDS has also been used and proven effective in community samples of both men and women beyond the postnatal period (Cox, Chapman, Murray, & Jones, 1996; Ramchandani et al., 2005). Scores on the EDS can range from 0 to 30, and a score above 12 is indicative for the presence of a clinical depression (Cox et al., 1987).

Symptoms of paternal anxiety were assessed using the State–Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, & Lushene, 1970), which consists of two subscales, each containing 20 items. The subscale *state anxiety* measures anxiety at the moment of completing the questionnaire, and *trait anxiety* measures dispositional anxiety or anxiety in general. Total scores of the state and trait subscales range from 20 to 80, and a higher score on the STAI represents more feelings of anxiety. The Dutch version of the STAI was found to have adequate psychometric properties ($\alpha = .95$) (van der Ploeg, 2000), and the state and trait subscales were found to correlate highly (.74) in a sample of pregnant women (Brouwers, van Baar, & Pop, 2001).

Procedure

The current study is part of the “Expectant Parents” study, a prospective longitudinal cohort study on prenatal risk factors and postnatal infant development (Maas, Vreeswijk, de Cock, Rijk, & van Bakel, 2012). Fathers were recruited through four midwifery practices at their partner’s first or second visit to the practice. At 26 weeks gestational age, fathers completed questionnaires and were visited in their homes by a researcher to participate in a semistructured interview.

Results

Descriptive Statistics

First, we examined the mean scores and distributions of the studied variables, which are reported in Table 1. As can be seen,

Table 1
Mean Scores and Distributions of Study Variables

Variables	N	Mean (SD)	Range
Total prenatal attachment score	288	55.55 (5.97)	36–71
Prenatal quality of attachment	288	38.65 (3.41)	25–46
Prenatal intensity of preoccupation	289	16.89 (3.27)	9–26
Depressive symptoms	291	3.42 (3.43)	0–21
State anxiety	281	31.35 (7.66)	20–58
Trait anxiety	280	31.11 (6.89)	20–55
		Distribution	N (%)
WMCI classification	243	Balanced	106 (43.6)
		Disengaged	119 (49.0)
		Distorted	18 (7.4)

Note. WMCI = Working Model of the Child Interview.

the distribution of fathers’ internal representations is 43.6% balanced, 49.0% disengaged, and 7.4% distorted. The distribution of internal representations found among community samples of expectant mothers is 62.0% balanced, 17.5% disengaged, and 20.5% distorted (Vreeswijk et al., 2012). Chi-square analyses showed that the distribution of fathers’ prenatal representations significantly differs from the distribution in pregnant mothers ($\chi^2 = 171.09$, $df = 2$, $p < .001$). Mothers more often have balanced representations of their unborn children, whereas fathers more often have disengaged representations.

Paternal Antenatal Attachment

Second, we examined the relationship between paternal antenatal attachment (PAAS), paternal symptoms of depression and anxiety, and demographic characteristics. Pearson product–moment correlations between these variables are reported in Table 2. Fathers’ quality of antenatal attachment was significantly and negatively related to depressive symptoms and state and trait anxiety. Younger fathers and fathers expecting their first child showed higher scores on quality of attachment to the unborn baby and intensity of preoccupation with the unborn baby. Furthermore, fathers’ self-reported levels of depression and anxiety were strongly correlated ($r =$ between .587 and .742). Finally, higher levels of education were associated with a lower intensity of preoccupation and less symptoms of depression and anxiety.

Prenatal Internal Representations

In order to test the hypothesis that prenatal attachment and prenatal representations are related, a multinomial logistic regression analysis was performed. With a multinomial logistic regression model, the influence of several independent variables (i.e., psychological well-being, quality of antenatal attachment, intensity of preoccupation with the unborn baby, parity, age, and education) on a categorical dependent variable with more than two categories (i.e., WMCI categories balanced/disengaged/distorted) can be investigated. An overall score for *psychological well-being* of fathers was computed based on a confirmatory factor analysis of their EDS and STAI (sub)scale scores.

The model described above was found to be significant, $\chi^2(14$, $N = 216) = 52.67$, $p < .001$, which means that the set of

Table 2
Pearson Product–Moment Correlation Matrix of Independent Variables

	1	2	3	4	5	6	7	8	9
1. Total prenatal attachment score	1	.899**	.889**	-.061	-.107	-.153*	-.187**	-.351**	-.110
2. Prenatal quality of attachment		1	.598**	-.135*	-.169**	-.217**	-.122*	-.249**	-.043
3. Prenatal intensity of preoccupation			1	.029	-.018	-.048	-.212**	-.383**	-.158**
4. Depressive symptoms				1	.592**	.705**	-.002	.013	-.182**
5. State anxiety					1	.748**	.010	-.083	-.108
6. Trait anxiety						1	-.011	-.046	-.116
7. Father's age							1	.186**	.113
8. Parity ^a								1	.026
9. Father's education									1

^a 1 = first born; 2 = later born.

* $p < .05$ (two-tailed). ** $p < .01$.

independent variables significantly predicts the chance of having a specific WMCI classification. When considering the effects of each separate independent variable on the chance of having certain WMCI classifications, fathers' quality of prenatal attachment was found to make a significant individual contribution to the odds of fathers having balanced, disengaged, or distorted WMCI classifications, $\chi^2(2, N = 216) = 11.07, p = .004$. It was found that the odds of fathers having a balanced instead of a disengaged representation increase as fathers' scores on quality of attachment increase, $B = -.208, p = .002$. In other words, when fathers' scores on quality of attachment increase by one unit, the odds of having a balanced representation instead of a disengaged representation increase by 18.8%. Fathers' prenatal internal working models were not predicted by their psychological well-being, $\chi^2(2, N = 216) = 0.62, p = .734$, intensity of preoccupation with the unborn baby, $\chi^2(2, N = 216) = 3.05, p = .217$, parity, $\chi^2(2, N = 216) = 2.710, p = .258$, age, $\chi^2(2, N = 216) = 3.21, p = .201$, or education, $\chi^2(4, N = 216) = 4.69, p = .321$.

Discussion

The Prenatal Father–Infant Relationship: Contributions to Current Literature

In the present study, we examined paternal feelings of attachment toward the unborn baby in a community-based sample of Dutch expectant fathers. The study shows that the two theoretical concepts concerning the quality of fathers' prenatal attachment and their internal representations of the fetus appear to be related. Fathers who reported a higher quality of prenatal attachment were more likely to have balanced representations, whereas fathers with a lower quality of attachment were more likely to show disengaged representations.

Men's psychological well-being was negatively correlated with their self-reported quality of prenatal attachment. The relationships were modest, but significant, and are in accordance with results from previous research among expectant mothers by Hart and McMahon (2006). They found that self-reported symptoms of anxiety were related to the quality of maternal prenatal attachment, but not to the intensity of preoccupation. However, they did not find a significant relationship between symptoms of depression and prenatal attachment among mothers, even though the correlation coefficients they found between the same measures were

larger than those found in our study ($r = -.298$ vs. $r = -.170$). The number of mothers included in their study ($N = 53$) was smaller than the number of fathers in our sample ($N = 301$), making it more difficult to achieve statistical significance.

Fathers' psychological well-being was not significantly related to their internal representations of the fetus, derived from the WMCI. The question that remains is why fathers' psychological well-being was not predictive of their WMCI classification, whereas it was related to their self-reported antenatal attachment. This may be due to an unequal distribution of fathers' internal representations (i.e., 43.6% balanced, 49.0% disengaged, and 7.4% distorted). Relatively few fathers were classified as distorted, whereas studies among mothers have shown that psychological difficulties often lead to more distorted rather than balanced or disengaged representations (Korja et al., 2009; Rosenblum et al., 2002; Schechter et al., 2005). In addition, prenatal attachment was measured using a self-report questionnaire that provides a continuous scale of scores of prenatal attachment, whereas the interview results in a forced classification into one of three main categories. Subtle increases in scores of psychological symptoms therefore may lead to effects in total scores on the prenatal attachment questionnaire, whereas they are not strong enough to establish significant differences in the distribution of WMCI classifications.

Parity, age, and education were also found significantly related to self-reported feelings of attachment but not to fathers' prenatal representations. Fathers expecting their first child reported a better quality of attachment toward the fetus and a higher intensity of preoccupation than fathers who had already experienced a pregnancy before. This may be due to the fact that the pregnancy is a new and overwhelming experience for first-time expectant fathers. Fathers who already have a child generally have to divide their time and attention between their born child(ren) and the unborn child. This may affect their feelings of attachment and preoccupation. Younger fathers also report a better quality of attachment and higher intensity of preoccupation, but this effect can be explained by the fact that generally first-time fathers are also younger than fathers who already have children ($r = .202$). Fathers with higher educational backgrounds generally report a lower intensity of preoccupation with the fetus. This is partially in line with earlier research by Arnott and Meins (2008), where higher levels of paternal education were related to lower total PAAS scores. Their study, however, did not differentiate between the PAAS subscales, whereas in our study this differentiation revealed that educational

background was only related to intensity of preoccupation with the fetus, not to the quality of prenatal attachment. Possibly, the effect of educational background can be explained by the fact that fathers with a higher level of education have more demanding jobs and therefore spend less time thinking about the unborn baby. This does not necessarily mean that they are less attached to the fetus.

The distribution of internal representations found among expectant fathers in this study significantly differs from what has been found among expectant mothers, that is, 62.0% balanced, 17.5% disengaged, and 20.5% distorted (Vreeswijk et al., 2012). Particularly the percentage of disengaged representations during pregnancy greatly differs between men and women. This suggests an emotional distance from the unborn baby in men compared with women. This may be a result of mothers physically carrying their unborn baby throughout the pregnancy and feeling the baby's physical presence throughout the day. The emotional distance was expressed in the interviews in several ways. The time length of interviews of fathers with disengaged representations was generally shorter, as they found it difficult to give detailed answers to the questions. Furthermore, the disengaged fathers were less able to describe their relationship with the unborn child in detail or could not give descriptions of the infant's personality. For example, in contrast to balanced fathers who gave specific and vivid examples of situations that occurred during the day, disengaged fathers were less able to do so. They used descriptions like "at the moment, it still feels unreal and far away." Because feelings of prenatal attachment have been found to increase between the first and third trimester of pregnancy (Habib & Lancaster, 2010; van Bussel et al., 2010), the significant differences in distributions of maternal and paternal prenatal representations may also be (partly) explained by the time point at which the WMCI was conducted. In the current study, the WMCI was conducted at 26 weeks gestational age, whereas the abovementioned distribution scores of mothers were generally based on studies conducted in the third trimester of pregnancy (Benoit et al., 1997; Dayton et al., 2010; Huth-Bocks, Levendosky, Bogat, & von Eye, 2004; Huth-Bocks, Levendosky, Theran, & Bogat, 2004; Theran et al., 2005).

Implications of the Results and Recommendations for Future Research

This study was meant as an exploratory and preliminary investigation of fathers' experiences during pregnancy. A limitation of this study is that it was conducted among a sample that mainly consisted of highly educated Dutch fathers. This limits the generalizability of the findings to less educated fathers and fathers of other nationalities. However, the fact that the distribution of WMCI classifications differs between community samples of mothers and fathers expecting a baby is a valuable finding. Clinicians need to be aware that mothers and fathers may differ in this respect, where disengaged representations presented by fathers during pregnancy may be less alarming than those presented by mothers. In this study, fathers' feelings of prenatal attachment and their representations were not compared directly with those of mothers. Especially because current literature on prenatal experiences of parents mostly focuses on maternal experiences, it would be of interest

to compare the experiences of mothers and fathers during pregnancy concurrently, because it is an important time of transition. An ideal design for such comparisons would be a paired-samples design, including both parents of the unborn child. Different perceptions and experiences of women and men about the same pregnancy may then be attributed to parental characteristics. Also, this would provide an opportunity to directly investigate the influence of gender differences or masculinity constructs on parents' representations of their unborn baby. For example, it would be interesting to investigate different paternal roles in relation to representations fathers have of their unborn children, as they may differ in the extent to which they function as a protector, moral guide, teacher, or breadwinner in the family (Lamb & Tamis-Lemonda, 2004).

Because the implications of our results cannot be generalized to the postnatal period, it would be interesting to also investigate fathers' postnatal representations of their children and compare these distributions with those of mothers. In mothers, prenatal representations were found to be predictive of postnatal representations and interactions with the infant (Benoit et al., 1997; Dayton et al., 2010; Theran et al., 2005), but it is currently unknown if this is also the case among fathers. For example, it is not yet clear whether fathers with nonbalanced representations of the unborn child will also more often have nonbalanced representations once the child is born. Given the differences in the distribution of the prenatal classifications of fathers and mothers, and the psychological process fathers go through during pregnancy (Genesoni & Tallandini, 2009), a shift toward balanced representations after birth may be more prevalent for fathers. To increase generalizability of studies suggested above, it would be important to also study these phenomena among parents varying in educational backgrounds and of different nationalities.

Fathers' representations of the fetus were closely related to their reported quality of prenatal attachment, but not to the intensity of preoccupation they show toward the fetus. This finding shows that the *quality* of fathers' thoughts and feelings of the unborn baby is more important in shaping their representations of the fetus than the actual amount of time spent on thinking about the unborn child. In other words, it is important for clinicians to specifically focus on the content of the thoughts fathers have of the baby when evaluating the relationship fathers have with their unborn children. Fathers who reported more symptoms of depression or anxiety generally had a poorer quality of attachment toward their fetus. Postnatal depression among fathers is known to have negative influences on the partner relationship of parents, child development and behavior, and the quality of parenting behavior (Fletcher et al., 2011; Ramchandani et al., 2011; Wilson & Durbin, 2010). The results of this study stress the importance of also considering the psychological well-being of fathers during prenatal health care.

Because this study does not illustrate whether a poorer quality of prenatal attachment is predictive of the quality of the postnatal father-infant relationship or future child development, it would be interesting to longitudinally investigate the stability of fathers' feelings of prenatal and postnatal attachment and their representations of the child. If fathers' prenatal representations and attachment are indeed predictive of their postnatal representations and attachment toward the infant, prenatal screening for problematic representations and attach-

ment relationships may be considered in order to screen for and possibly prevent problems in this area.

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