Mothers and fathers : Parenting practices in families with two children

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chapter 6

General discussion

In the current dissertation, similarities and differences between mothers' and fathers' parenting practices are examined while taking both biological factors (i.e., parental sex hormones) and child characteristics (i.e., gender, age, and birth order) into account. The findings of the studies described in this dissertation are illustrated in Figure 1. Chapter 2 revealed that mothers show higher levels of sensitivity and nonintrusiveness than fathers. In Chapter 3, the effect of birth order and child age on parenting behavior of mothers and fathers were disentangled and the results indicate that parents are more sensitive and intrusive towards their firstborn child than towards their second-born child above and beyond child age. The results in Chapter 4 suggest that more diurnal variability in testosterone is associated with higher parenting quality in fathers, but lower parenting quality in mothers. Finally, in Chapter 5 the results points towards mothers intervening more often in response to non-compliant behavior of their children than fathers, but both mothers and fathers adjust their discipline strategies to the developmental level of their children. Below, the findings of the studies presented in this dissertation are summarized and discussed in more detail. In addition, limitations, suggestions for future research, and implications are described.

Parent gender

The current dissertation suggests that mothers show more optimal parenting practices than fathers. When the children were one and three years old, mothers interfered more often when their children were disobedient than fathers. Fathers, on the other hand, showed more laxness in response to child non-compliance than mothers (Chapter 5). These findings are in line with previous work (e.g., Blandon & Volling, 2008; Day, Peterson, & McCracken, 1998; Power, McGrath, Hughes, & Manire, 1994; Tulananda & Roopnarine, 2001; Volling, Blandon, & Gorvine, 2006), and suggest that fathers are less involved in daily discipline routines in the family than mothers. Further, mothers were more sensitive and nonintrusive towards their two children than fathers (Chapter 2). Several other studies have also reported gender differences with respect to parental sensitivity and nonintrusiveness (e.g., Barnett, Deng, Mills- Koonce, Willoughby, & Cox, 2008; Bergmann, Wendt, Von Klitzin, & Klein, 2013; Schoppe-Sullivan et al., 2006), but the current dissertation extends these findings by showing that the differences between mothers and fathers are persistent over time (Chapter 3).

The differences between mothers' and fathers' parenting practices can perhaps be explained in light of a biosocial perspective proposed by Wood and Eagly (2012) who assume that "sex differences and similarities in behavior emerge from the division of labor in a society, which itself is a product of social and cultural forces in interaction with the biological features characteristic of each sex" (p. 59). Although this theory focused on gender differences in general, the rationale can be applied to the family context in order to explain differences in parenting practices

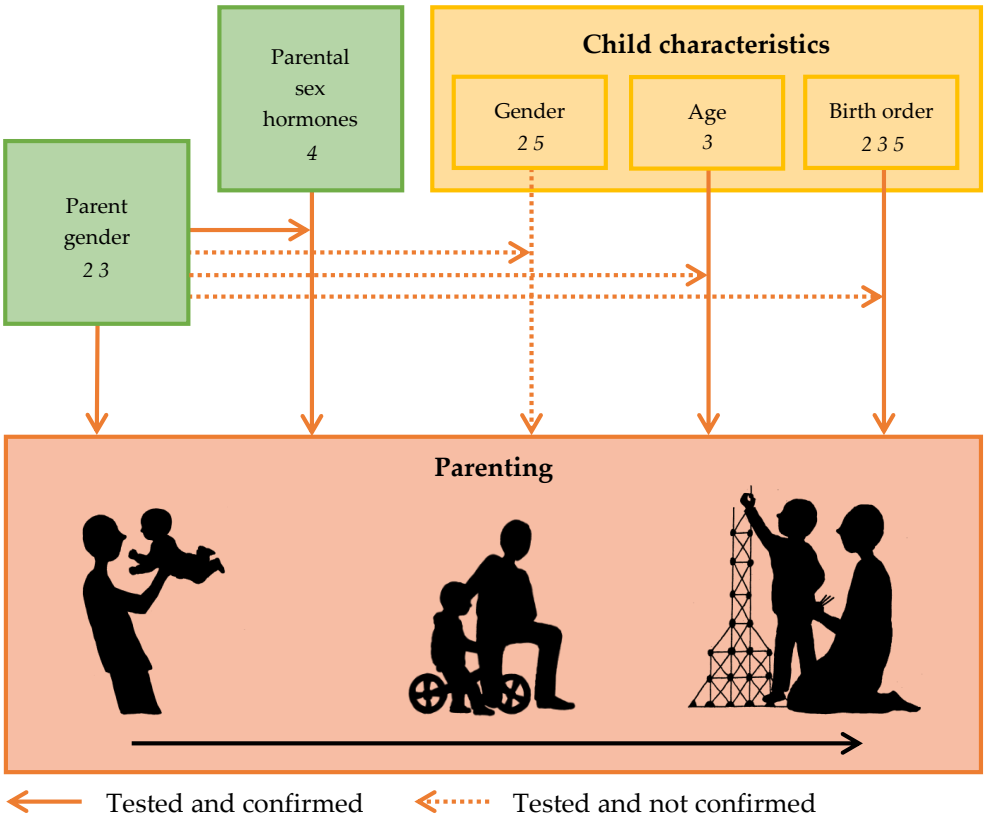

Figure 1. *Illustration of the results of this dissertation.*
Note. The numbers refer to the chapters focusing on the specific topic.

between mothers and fathers. The specific roles of mothers and fathers in a society are primarily dependent on how the physical differences between the sexes enable or constrain the efficient performance of everyday activities. More specifically related to parenting, women's childbearing and nursing facilitate infant care, but at the same time interferes with many other activities, such as activities that require specialized training or extended absence from home. As a result, women tend to perform activities compatible with childcare (e.g., part-time jobs, working at home), and men tend to perform activities less compatible with childcare (e.g., having full-time jobs or jobs that require strength). This division of labor between mothers and fathers activates a variety of psychological and social processes that in turn stabilizes the division (Wood & Eagly, 2012). For example, the observation of the different activities performed by mothers and fathers results in the development of child gender role beliefs about how mothers and fathers should behave in certain situations (i.e., mothers as homemakers and fathers as economic providers). In

general, such gender roles encourage parents to conform to these shared beliefs and to internalize these beliefs regarding mothers and fathers as personal standards for their own behavior (Eagly, Wood, & Diekman, 2000).

The findings of the studies presented in this dissertation fit the assumptions of the biosocial perspective (Wood & Eagly, 2012). Given that sensitive parenting relies heavily on the correct interpretation of child signals (Mesman & Emmen, 2013), more time spent with a child is likely to lead to a more accurate understanding of his or her needs. In the Netherlands, mothers have been found to be more involved in child care than fathers (Sociaal Cultureel Planbureau [SCP], 2011), which in turn might result in higher levels of sensitivity and nonintrusiveness for mothers than fathers. In addition, spending more time with their children gives mothers more opportunities for discipline, whereas fathers are less likely to experience situations in which they have full responsibility for their children and be the active disciplinarian.

An often heard critique of gender theories such as Wood and Eagly's (2012) biosocial model, is that they are no longer applicable to Western societies because of the shift towards more egalitarian gender roles. Over the last few decades a shift in gender role patterns has occurred in Western societies: Mothers' participation in the labor market increased substantially and fathers have taken more active roles in their children's socialization (Cabrera, Tamis-LeMonda, Bradley, Hoffert, & Lamb, 2000; Lamb, 2010). However, although the division of gender roles became less strict in most modern Western societies, there is evidence that maternal involvement still remains substantially higher and that mothers spend on average two to three times as much time in direct one-on-one interaction with their children compared to fathers (Huerta et al., 2013; SCP, 2011). This implies that mothers are still the primary caregivers of young children in most families. In addition, in the Netherlands, 42% of men and 23% of women still believe that women are more competent caregivers than men (SCP, 2014). Furthermore, several studies have shown that men and women become more traditional in their gender-role attitudes following the birth of a child (e.g., Baxter, Buchler, Perales, & Western, 2015; Katz-Wise, Priess, & Hyde, 2010). Both men and women become more likely to support parenthood as women's most important role in life. So even though some aspects of traditional gender roles have become less salient over time, gender role theories are still very relevant to current-day societies (Endendijk, Groeneveld, & Mesman, 2014).

Biological factors

The results from Chapter 4 show that parental testosterone levels are associated with parenting behavior of both mothers and fathers. However, the associations between variability in testosterone and parenting behavior were different for mothers and fathers. For mothers, more variability in testosterone was related to

lower levels of parental sensitivity and nonintrusiveness, whereas for fathers more variability in testosterone was related to more optimal parenting. To the best of our knowledge, no previous study has examined the link between diurnal variability in testosterone and parenting *quality*. Nevertheless, there is some evidence suggesting that variability in testosterone is also differently related to behavior problems in adolescent boys and girls (Granger et al., 2003). These findings suggest that the testosterone system might act differently on behavior in men and women.

Because of the lack of research in this field, we can only speculate about the possible (biological) mechanisms underlying these gender differences. It has been suggested that alterations in testosterone levels in males reflect a shift between conflicting reproductive strategies and that these variations in testosterone levels enable men to change from mating efforts to parenting efforts (Gray & Anderson, 2010). This proposition has already been illustrated in multiple studies in more than 60 bird species that showed that testosterone levels increase when males compete for food and territory and decrease when males need to care for offspring (Wingfield, Hegner, Dufty Jr., & Ball, 1990). In human fathers, a similar pattern has been found. For example, one study found that fathers who show a decrease in testosterone levels in response to fatherhood are more likely to have a positive relationship with their child compared to fathers who show a smaller or no decrease in testosterone levels (Weisman, Zagoory-Sharon, & Feldman, 2014). Because continuously high testosterone levels would interfere with successful parenting and continuously low testosterone levels would decrease mating success, it may thus be essential for fathers to have a flexible testosterone system.

For mothers, on the other hand, the ability to lower their testosterone levels might be less necessary to achieve optimal parenting, because their testosterone levels are already substantially lower than those of fathers. A flexible testosterone system in relation to caregiving might even be less adaptive for mothers, because a certain level of testosterone seems to be necessary to respond appropriately to challenging parenting contexts (e.g., baby cries). There is evidence that the administration of testosterone in women enhances, rather than suppresses, neural responsivity to baby cries in women (Bos, Hermans, Montoya, Ramsey, & Van Honk, 2010). This finding could be the effect of multiple neurobiological mechanisms. For example, aromatase metabolizes testosterone to estradiol in the central nervous system, which in turn is essential for the synthesis of oxytocin (e.g., Cornil, Ball, & Balthazart, 2006). Estradiol and oxytocin both promote mother-infant bonding and stimulate parental behavior (e.g., Insel & Young, 2001; Kendrick, 2000). Animal studies have shown that in mice the conversion of testosterone to estradiol by aromatase stimulates parenting behavior (e.g., Trainor & Marler, 2001). Although the administration of testosterone results in an approximate 10-fold increase in blood levels of testosterone (Tuiten et al., 2000), which is not

representative of general testosterone levels in women, it might be the case that a certain amount of testosterone is essential for parenting behavior.

It is also possible that gender differences in testosterone variability in response to parenting are associated with different neural substrates in the brain. Males have been found to be more responsive than females to the behavioral and neuroendocrine actions of androgens (e.g., Fernández-Guasti, Kruijver, Fodor, & Swaab, 2000; Roselli, 1991). Although the bases of these differences in adult responsiveness to androgen are not fully understood, it has been suggested that structural and functional gender differences in the central nervous system play a role. Several studies have shown gender differences in the concentrations of androgen receptors (AR) in the rat brain (e.g., Simerly, Chang, Maramatsu, & Swanson, 1990; Roselli, 1991). For example, one study showed differences in either the number of AR cells or the relative density of labeling over certain cell groups in several regions in the rat brain (Simerly et al., 1990). Although no absolute sex differences in the amount of AR in the rat brain were found, these subtle sex differences in AR distribution might explain the different relation between testosterone and behavior in males and females. It has already been demonstrated that variation in oxytocin receptor density in the brain of prairie voles and meadow voles can contribute to variation in social attachment behaviors (Ross et al., 2009), suggesting that differences in the distribution of receptors in the brain may indeed contribute to variation in social behavior. However, more research is required to examine whether these findings also apply to humans and how these neurobiological gender differences in the testosterone system are related to parenting behavior.

Child characteristics

Child gender. The results of the studies presented in this dissertation suggest that the child's gender does not play a substantial role in either mothers' or fathers' global parenting practices in early childhood. Mothers and fathers did not differ in their levels of sensitivity and nonintrusiveness towards sons and daughters (Chapter 2). In addition, parents used similar discipline strategies with boys and girls (Chapter 5). These findings contrast the general assumption that parents treat their sons and daughters differently.

It should be noted, though, that evidence regarding gender-differentiated parenting is rather inconclusive. Back in the 1970s and 1980s, a series of now classic experiments were performed in which infants were dressed up as boys or girls (regardless of their actual gender). The results consistently showed that when adults perceive the infant to be a boy, they encourage and initiate more gross motor play and engage in less verbal interaction than when the infant is perceived to be a girl (Culp, Cook, & Housley, 1983; Smith & Loyd, 1978). Since then, a growing body of research has shown that parents tend to treat boys and girls differently (e.g., Das

Eiden, Leonard, & Morrisey, 2001; Domenech Rodríguez, Donovick, & Crowley, 2009; Lovas, 2005; Martin & Ross, 2005; Mills & Rubin, 1990; Tam & Lam, 2003). Nevertheless, several reviews revealed that surprisingly few studies support the idea of gender-differentiated parenting by mothers and fathers (Lytton & Romney, 1991; Maccoby & Jacklin, 1974; Russel & Saebel, 1997). For example, Lytton and Romney (1991) concluded that out of 19 socialization areas, the only area in which North-American mothers and fathers showed significant differences in their treatment of boys and girls was the encouragement of sex-typed activities. In addition, almost all studies on gender-differentiated parenting are limited by making between-family comparisons. By comparing parenting practices between families with boys and families with girls, other family characteristics (e.g., social-economic status, gender role attitudes) can not be ruled out as explanatory factors (Ball, McKenry, & Price-Bonham, 1983; Rodgers, 2001; Rodgers, Cleveland van den Oord, & Rowe, 2000). By adopting a within-family approach, our study suggests that child gender is less salient in early childhood parenting practices than previously assumed.

Although we did not find evidence for the proposition that parents use different global parenting practices with boys and girls during early childhood, our findings can not completely rule out any effect of child gender on parenting practices of mothers and fathers. Different behaviors towards sons and daughters may be difficult to detect (Raley & Bianchi, 2006) and parents may use gender-differentiated parenting in subtle ways. One of the more implicit ways through which parents can express gender concepts towards their children is by using gender talk, which is defined as the way parents talk to their children about gender, for example by contrasting males and females or emphasizing gender categories (Gelman, Taylor, & Nguyen, 2004). A recent study indeed showed that fathers and mothers use indirect ways to communicate the appropriateness of certain behaviors for boys and girls (Endendijk et al., 2014). More specifically, mothers and fathers have been found to refer to gender-neutral characters doing male-typed play activities (e.g., skateboarding) more often as males than as females during picture-book reading. Further, mothers were more positive about stereotype-congruent activities than about stereotype-incongruent activities. Another study also found evidence for the more subtle role of child gender in emotion socialization (Van der Pol et al., 2015). Although no differences in parental emotion talk towards boys and girls were observed, parents associated anger more with boys and associated sadness and happiness more with girls. To conclude, our findings confirm the notion that no gender differences are found when broader categories of parenting (e.g., sensitivity, discipline) are examined, but the literature indicates that gender-differentiated parenting might only be visible in specific situations or in response to specific child behaviors rather than on the level of general parenting styles.

Child age. Chapter 3 shows that the age of the children is an important factor to take into account in parenting research. More specifically, parents' nonintrusiveness increased from infancy to early childhood, while parental sensitivity increased from infancy to toddlerhood, but decreased when children reached early childhood. These findings imply that the developmental status of the child (reflected by child age) affects mothers' and fathers' parenting practices. During the first years of life, infants undergo important changes in the body and brain that contribute to physical, cognitive, and social development (Berk, 2003; Bornstein, 2002). For example, children develop skills to communicate their needs and wishes in a verbal manner. This increased use of language might help parents to adjust their responses in a way that fit their child's needs. However, important phase transitions in the child's life (e.g., onset of school attendance) can lead to a reorganization of the parent-child relationship (Granic, Hollenstein, Dishion, & Patterson, 2003). Phase transitions are characterized by an increase in the variability of dyadic patterns and might temporarily interfere with optimal parenting practices and parental involvement with the child. Following this line of reasoning, we suggest that the increase in parental nonintrusiveness may not unequivocally reflect optimal parenting but may also reflect parental behavior that is characterized by a lack of involvement, participation, and interference in the child's activities. Such behaviors can reflect lower levels of optimal parenting when they are associated with lower responsiveness to the child's signals.

The current findings extend the literature by showing that the change of parenting practices with child age is similar for mothers and fathers (Chapter 3). In contrast to one previous study (Bergmann et al., 2013), our results suggest that fathers do not yet catch up in their sensitivity and nonintrusiveness levels during early childhood. However, although fathers on average only spend 46% of mothers' time on caregiving activities with infants, their participation in personal care activities increases over time towards a more equal share with school-aged children (Yeung, Sandberg, Davis-Kean, & Hoffert, 2001). It is therefore possible that the differences between mothers and fathers with respect to parenting practices become smaller when the children reach middle childhood and the division of childcare between mothers and fathers becomes more equal.

Birth order. Chapter 2 and Chapter 5 show that parents use different parenting practices with their firstborn and second-born children. Both mothers and fathers used more verbal discipline strategies (e.g., commands and distraction) with their firstborn child, whereas physical discipline strategies and laxness were more often observed in response to non-compliant behavior of the second-born child (Chapter 5). In addition, mothers and fathers were more sensitive and nonintrusive towards their firstborn child than towards their second-born child (Chapter 2). However, the studies described in Chapter 2 and Chapter 5 examined parenting practices towards firstborn and second-born children at one time point, when the

two siblings differed in age. As a result, it remains unclear whether the differences in parental treatment of firstborn and second-born children are due to birth order effects or child age. There is some evidence that the differences in parental treatment of firstborn and second-born children might indeed be explained by differences in developmental status. Parents appear to be sensitive to the developmental differences between siblings and adjust their parenting practices accordingly (Dunn, Plomin, & Daniels, 1986; Grolnick, Kurowski, McMenamy, Rivkin, & Bridges, 1998).

To disentangle the effect of child age and birth order on parenting behavior during infancy and early childhood, differences in parental treatment of siblings when they had the same age were examined in Chapter 3. Although parenting practices are affected by the child's age, our results suggest that parents also treat their firstborn and second-born children differently irrespective of child age. Mothers and fathers showed higher levels of sensitivity towards their firstborn child than towards their second-born child when comparing parenting practices of siblings at the same age. In addition, both parents were also more intrusive towards their firstborn child than towards their second-born child at the same age. Although we expected to find support for the learning-from-experience hypothesis (Whiteman, McHale, & Crouter, 2003), the differences in parental treatment of siblings seem to point towards higher parental involvement with firstborn children than with second-born children. This is in line with the resource dilution hypothesis (Blake, 1981), which proposes that parents have had more time for one-on-one attention with their firstborn child, as they experienced a period in which they did not have to divide their attention between two children. This advantage with firstborn children may result in firstborn children receiving higher quality parenting than second-born children. From this viewpoint, our finding that parents showed higher levels of nonintrusive behavior towards their second-born children than towards their firstborn children may seem contradicting. However, higher levels of parental nonintrusiveness do not necessarily reflect positive parenting, they may also reflect a generally lower level of involvement with the second-born child than with the firstborn child. Following this line of reasoning, higher levels of parental nonintrusiveness with their second-born children is consistent with the assumption that firstborn children receive more and more optimal parenting than second-born children.

Conceptualizing dimensions of parenting for fathers and mothers

There is a continuing debate on whether and how parenting by fathers is different from parenting by mothers. Although this debate motivated early research on fathering, it has had the unintended effect of dividing the field into research supporting the view that fathers are just like mothers and research supporting the view that fathers are different from mothers (Cabrera, Fitzgerald, Bradley, &

Roggman, 2014). These two positions represent very contrasting views on parenting by mothers and fathers.

In line with the view that fathers and mothers are similar, Fagan, Day, Lam, and Cabrera (2014) state that they "struggle to find solid evidence for the argument that the dimensions of fathers' and mothers' parenting behaviors are conceptually unique" (p. 390). Instead, they argue that the field should move towards a more general model of parenting rather than a model emphasizing distinct dimensions of mothering and fathering. Fagan and colleagues (2014) base their argument on three sets of findings: (1) there is ample evidence that parenting constructs, such as sensitivity and discipline, are the same for mothers and fathers (e.g., Adamsons & Buehler, 2007; Ashbourne, Daly, & Brown, 2011; Finley, Mira, & Schwartz, 2008; Prinzie, Onghena, & Hellinckx, 2007; Van Leeuwen & Vermulst, 2004), (2) a growing body of research shows that mothers' and fathers' parenting practices affects their children in similar ways (e.g., Lewis & Lamb, 2003; McDowell & Parke, 2009; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004), and (3) mothers and fathers are becoming more similar with respect to their roles, the types of behaviors used during parent-child interaction, and the amount of time they spend with their children (e.g., Gauthier, Smeedeng, & Furstenberg Jr., 2004; Raley, Bianchi, & Wang, 2012).

Although Fagan and colleagues (2014) state that there is no strong evidence of essential differences between mothers and fathers parenting behavior, other researchers argue that differences do exist in the processes and meaning of mothers' and fathers' involvement (Palkovitz, Trask, & Adams, 2014). An often heard critique with respect to research on fathering is that "much of the literature on parenting is framed by a conception of caregiving built around maternal parenting, or what is called the 'maternal template'" (Roggman, Fitzgerald, Bradley, & Raikes, 2002, p. 2). By using parallel measures for mother and father involvement or, e.g., sensitivity, there may be a risk of ignoring fundamentally different meanings and processes of mothering and fathering (Palkovitz et al., 2014). Indeed, some studies provided preliminary evidence that there may be a difference in the essence of mothering and fathering, suggesting that parenting by mothers and fathers is conceptually different. For example, Pedersen (2012) found that mothers and fathers understand and prioritize family and child care needs differently. For mothers, good mothering is distinct from good parenting, whereas for fathers, good fathering and good parenting are one and the same. During interviews, mothers reported three interrelated components of good parenting: reliability, structure, and disciplinary consistency. Fathers, on the other hand, indicated that being a 'good parent' means being a participant in family life and spending time with one's child. They also described their fathering role as helping and supporting mothers rather than viewing parenting as a primary responsibility (Pedersen, 2012). Not only the affective and cognitive perceptions of parenting may be different for mothers and

fathers, a recent study showed that the brain-hormone-behavior pathways underpinning motherhood and fatherhood are also different (Abraham et al., 2014). Although primary-caregiving fathers showed similar amygdala activity in response to infant-related cues as mothers, the neural pathways through which parenting behavior was affected were still different for mothers and primary-caregiving fathers. Furthermore, there is ample evidence that mothers and fathers also engage in different types of interactions with their children from early infancy (e.g., Lamb & Lewis, 2010; Palkovitz, 2013; Parke, 2002). In addition, several studies indicate that parenting behavior of mothers and fathers affects child development differently (e.g., Cabrera, Shannon, & Tamis-LeMonda, 2007; Grossman et al., 2002; Kochanska, Askan, Prisco, & Adams, 2008; LaBounty, Wellman, Olson, Lagattuta, & Liu, 2008; Martin, Ryan, & Brooks-Gunn, 2007), suggesting possible unique influences of mothers and fathers.

To date, the literature does not provide a definite answer whether measurements originally developed for parenting by mothers can also be applied to study fathers. Although the results in the current dissertation point towards differences between mothers and fathers with respect to parental sensitivity and discipline, this does not necessarily imply conceptual differences in parenting behavior by mothers and fathers. Studies examining sensitivity and discipline behavior of fathers have shown meaningful associations with child outcomes in a variety of domains (e.g., Bakermans-Kranenburg, Van IJzendoorn, & Juffer, 2003; Bernstein, Harris, Long, Iida, & Hans, 2005; Feldman & Klein, 2003; Lucassen et al., 2011; Tamis-LeMonda et al., 2004; Volling et al., 2006). In addition, although several studies suggest that other aspects of father-child interactions are more salient for child development, such as challenging and stimulating play (e.g., Grossmann et al., 2002), this has not been confirmed by recent work. For example, a meta-analysis showed that fathers' sensitive play combined with stimulation was not more strongly associated with attachment security than sensitive interactions without stimulation of play (Lucassen et al., 2011). Following these findings it seems reasonable to use common parenting measures for both mothers and fathers, at least with respect to parental sensitivity and discipline.

Limitations and directions for future research

Several limitations of the current dissertation should be mentioned. First, the sample used in this dissertation consisted of primarily highly educated Caucasian families, which hampers the generalization of the results to the general population. There is ample evidence that parenting practices vary between families with different socioeconomic status (SES) and ethnic backgrounds. For example, lower SES parents tend to be more controlling and more punitive than higher SES parents (Hoff, Laursen, & Tardif, 2002). Further, there may also be cultural variation in parenting practices. In most Western societies there is a trend for more egalitarian

gender roles within the family, whereas in non-Western cultures the roles of females and males are more strict (World Economic Forum, 2014). To date, there is evidence that differences with respect to harsh punishment between mothers and fathers are larger in African American parents than in European American parents (Pinderhughes, Dodge, Zelli, Bates, & Pettit, 2000). To gain more insight in parenting differences between mothers and fathers, future research should include families with different SES and ethnic backgrounds to examine whether the differences between mothers' and fathers' parenting practices also apply to families with low SES and non-Western backgrounds.

Second, in this dissertation we could not control for the time mothers and fathers spent with their children, whereas there is some evidence that differences in parenting practices between mothers and fathers may be partly due to differences in time spent in child rearing. For example, in one study differences between mothers' and fathers' discipline behavior were found, but after controlling for the time mothers and fathers spent with their children (and parental depression) the difference between mothers' and fathers' discipline behavior disappeared (Arnold & O'Leary, 1997). A direction for future research is to examine whether the differences in parenting practices between mothers and fathers can indeed be (partly) explained by the time parents spent with their children.

Third, the interpretation of the results with respect to parental nonintrusiveness in this dissertation were rather complicated. Overall, our interpretation of the results suggest that parental nonintrusiveness can indicate either positive parenting or less optimal parenting, depending on the level of parental involvement with the child. In order to gain more insight in the nature of parental nonintrusiveness, it is important to take parental involvement into account in future research.

Fourth, the setting of the tasks (e.g., free play sessions with preselected toys) used in the studies presented in this dissertation may have limited the types of interactions that mothers and fathers typically use with their children. There is ample evidence that there are notable differences between mothers and fathers in the type of interactions with their children (e.g., Blakemore, Berenbaum, & Liben, 2009; Lamb & Lewis, 2010; Paquette, 2004; Volling, McElwain, Notaro, & Herrera, 2002). For example, mothers tend to be more verbal, didactic, and show more toy-mediated play, whereas fathers use more physical and stimulating play when interacting with their children (Parke, 2002). This latter type of play is probably less likely to occur in a situation in which parents are invited to play with their child with a set of preselected toys (e.g., drawing board, a tea set, Lego) that are more geared towards sitting down and not moving around a lot. To our knowledge, no studies have yet examined parenting differences between mothers and fathers in a situation that is more likely to elicit fathers' preferred style of play. Observing

parenting behavior during a play situation without preselected toys would therefore be an important and interesting direction for future research.

Last, in the current dissertation we did not test whether the differences between mothers' and fathers' parenting practices towards firstborn and second-born children affect child development differentially. Several studies suggest that mothers and fathers influence their children in similar ways (e.g., Lewis & Lamb, 2003; Lucassen et al., 2011; McDowel & Parke, 2009; Tamis-LeMonda et al., 2004), whereas other studies propose that parenting behaviors of mothers and fathers affect child development differently (e.g., Cabrera et al., 2007; Grossman et al., 2002; Kochanska et al., 2008; LaBounty et al., 2008; Martin et al., 2007). In a similar vein, differences in parental treatment of siblings might be associated with variations in child behavior (e.g., Van Berkel et al., 2014; Fearon, Bakermans-Kranenburg, & Van IJzendoorn, 2010; Fearon et al., 2006). For example, a recent study showed that paternal sensitivity was positively associated with prosocial behavior of toddlers, but only when fathers showed low levels of sensitivity towards the toddler's younger sibling (Van Berkel et al., 2014). This finding implies that, in line with family-systems theories, interactions between dyads within the family influence other dyadic interactions within the family, which in turn influence child outcomes (Minuchin, 1985; Volling, Kolak, & Blandon, 2009). It is important to build on the findings of this dissertation when studying similarities and differences in parenting practices between mothers and fathers towards their firstborn and second-born children in relation to child development. Increased knowledge of the effect of parental treatment of siblings on child behavior might contribute to the development of effective parenting programs in the future.

Implications for research

Overall, the current dissertation provides evidence for the assumption that mothers show more optimal parenting practices than fathers. Even though most Western societies, such as the Netherlands, move towards more egalitarian gender roles, differences between mothers and fathers with respect to parenting practices exist. This implies that parenting is undeniably a gendered activity.

Although our results point to differences in parenting practices of mothers and fathers, bioecological theory (Bronfenbrenner, 1995) suggests that sometimes fathers will enact roles played by mothers, and vice versa, in response to environmental conditions that require adaptations (e.g., both parents working, primary-caregiving fathers). A recent study found support for substantial plasticity of the human paternal brain (Abraham et al., 2014). Whereas primary-caregiving mothers showed higher activation in the emotional processing network and secondary-caregiving fathers exhibited greater activation in socio-cognitive circuits, caregiving experience in primary-caregiving fathers involved the co-activation of both networks. To understand the complexities of fathering, it is therefore

important to consider contextual and individual factors that may move fathers to being more similar to or more different from mothers. In some situations and/or domains of development, the differences between mothers' and fathers' parenting practices may be quite large, whereas in other situations they may be very small (Cabrera et al., 2014).

To understand whether and how fathering might be different from mothering, it is also important to include all members of the family and all relations between family members. Most research on parenting practices of mothers and fathers focuses on only one child per family and on dyadic parent-child interactions. However, there is evidence that mothers' and fathers' interactions with their children are different when they are observed in a dyadic or triadic context (e.g., Bingham, Kwon, & Jeon, 2013; Kwon, Jeon, Lewsader, & Elicker, 2012; Lindsey & Caldera, 2006; Scarano de Mendonça, Cossette, Strayer, & Gravel, 2010). In a related vein, parenting towards one child is not necessarily representative of the quality of parenting towards other children within the family. This underscores the urge to study the parenting practices of mothers and fathers towards more than one child per family.

Implications for practice

Both maternal and paternal sensitivity and discipline behavior have found to be related to secure attachment relations and positive developmental outcomes (e.g., Bakermans-Kranenburg et al., 2003; Bernstein et al., 2005; Feldman & Klein, 2003; Lucassen et al., 2011; Tamis-LeMonda et al., 2004; Volling et al., 2006). It is therefore important to promote sensitive parenting and positive discipline in both mothers and fathers. Since fathers show lower levels of sensitivity and discipline strategies, it may be particularly beneficial to focus on fathers in intervention programs. Intervention studies aimed at increasing maternal sensitivity and positive discipline have been found to be effective, and interventions involving fathers appeared to be significantly more effective than interventions focusing on mothers only (Bakermans-Kranenburg et al., 2003). Although little attention has been paid to the role of fathers in interventions, there is some evidence suggesting that it is possible to improve both the quantity (e.g., time spent in interaction with their child) and the quality (e.g., fathers' sensitivity and positive discipline) of fathers' involvement with their children through intervention programs (Doherty, Erickson, & LaRossa, 2006; Fagan & Iglesias, 1999; Magill-Evans, Harrison, Benzies, Gierl, & Kimak, 2007). In addition, a pilot study on the feasibility of the home-based Video-feedback Intervention to promote Positive Parenting and Sensitive Discipline (VIPP-SD) with fathers also showed encouraging results (Lawrence, Davies, & Ramchandani, 2012).

Conclusion

To conclude, the current dissertation indicates that parent gender plays an important role in the quality of parent-child interactions in early childhood. In line with previous findings that the vast majority of mothers are generally the primary caregivers of young children (Huerta et al., 2013; SCP, 2011), the studies in this dissertation indicated that mothers showed more optimal parenting behavior towards their two children than fathers. Further, biological factors (e.g., diurnal variability in testosterone) and child characteristics (e.g., child age and birth order) were found to affect parenting practices in both mothers and fathers. Although the studies presented in this dissertation point towards differences between mothers' and fathers' parenting practices, it is important to note that the differences are relatively small. Moreover, our findings do not necessarily imply that fathers show low-quality parenting. Instead, the mothers and fathers in our sample score relatively high on sensitivity and nonintrusiveness. We should be careful with respect to the interpretation of the differences between mothers' and fathers' parenting practices, because there may be serious costs of overinflated claims of gender differences (Hyde, 2005). For example, it may strengthen the stereotype of women as caring and nurturing and men as lacking in this area. As a result, men may believe they can not be nurturing in their role as father. It is therefore important to consider and value the contexts in which differences between mothers' and fathers' parenting practices may emerge and when mothers and fathers may be more similar to each other.