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Growing up together

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Citation

Berkel, S. R. van. (2015, March 10). *Growing up together*. Retrieved from <https://hdl.handle.net/1887/32205>

Version: Corrected Publisher's Version

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Note: To cite this publication please use the final published version (if applicable).

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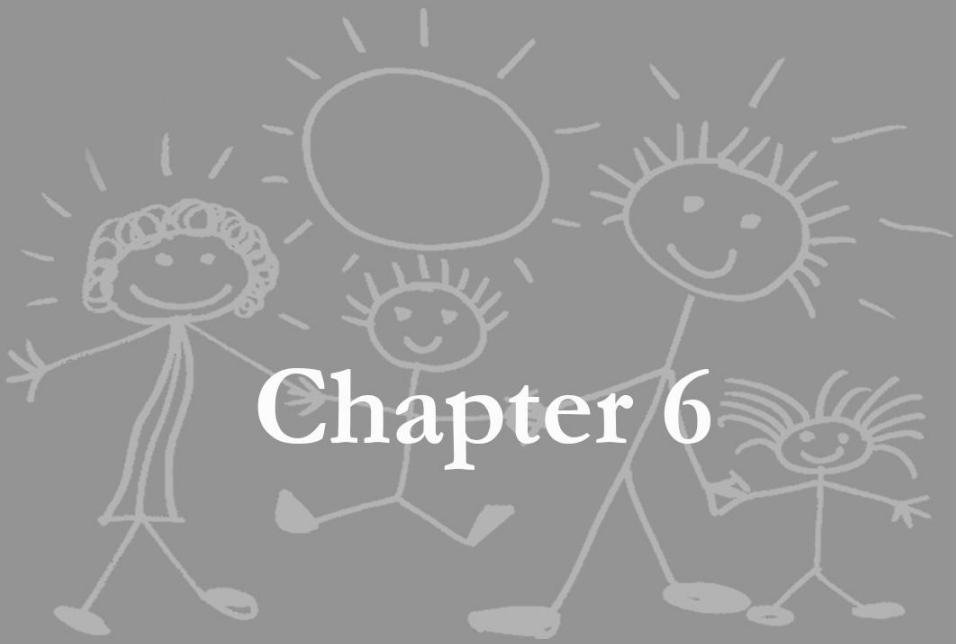


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Title: Growing up together

Issue Date: 2015-03-10



General discussion

In this dissertation firstborns' interactions with their younger sibling and parenting towards siblings are examined in relation to socio-emotional development. Chapter 2 showed that firstborns' sharing with their second-born siblings was primarily influenced by situational factors, such as the presence of a specific parent and interacting with a parent instead of an unfamiliar adult before sharing. In Chapter 3 it was found that parenting towards all children in a family influences socio-emotional development of a specific child. Chapter 4 provides evidence for gender differences in sibling discipline and support in interactions between siblings in the context of parental limit-setting. Finally, in Chapter 5 it was found that second-born children have more social skills at the age of three than their firstborn siblings, but compared to these firstborn siblings also showed more externalizing behaviors. Below, these findings are summarized and discussed in more detail. The review of the findings will emphasize the role of child characteristics and parenting towards two children within a family on sibling interactions and firstborns' socio-emotional development.

Theoretical implications

A theoretical framework that is often referred to in family studies (Blandon & Volling, 2008; Feinberg & Hetherington, 2001; Meunier, Boyle, O'Connor, & Jenkins, 2013) is family system theory (Minuchin, 1985). This theory proposes that not only individuals but also dyads within a family influence each other. However, family system theory primarily focuses on main effects, for instance how negative parent-child interactions could lead to negative sibling interactions through a spillover effect, whereas relations between family processes and sibling interactions are also known to be moderated by child characteristics and effects of other interactions within the family (Brody, 1998; Feinberg & Hetherington, 2001). Moreover, because of this focus on main effects of dyadic interactions on an individuals' behavior, family system theory may explain effects of processes that differ between families rather than how these processes depend on specific within-family factors. These within-family factors may explain how dyadic interactions may influence siblings within the same family differently (Feinberg & Hetherington, 2001). Therefore, models should include child characteristics and examine the interaction between dyadic processes in addition to main effects of dyadic processes on child socio-emotional development.

The studies presented in this dissertation addressed these issues by adopting a broader approach to the investigation of firstborns' interactions with the second-born child. In addition to examining the direct effect of parenting towards a child on siblings' behavior, characteristics of both siblings and interactions between parenting towards both siblings were included. Figure 1 presents a model of the relations that can be inferred from the results of the studies described in this dissertation. In this model bidirectional effects of child characteristics and of parenting on firstborns' behaviors towards the second-born child are depicted.

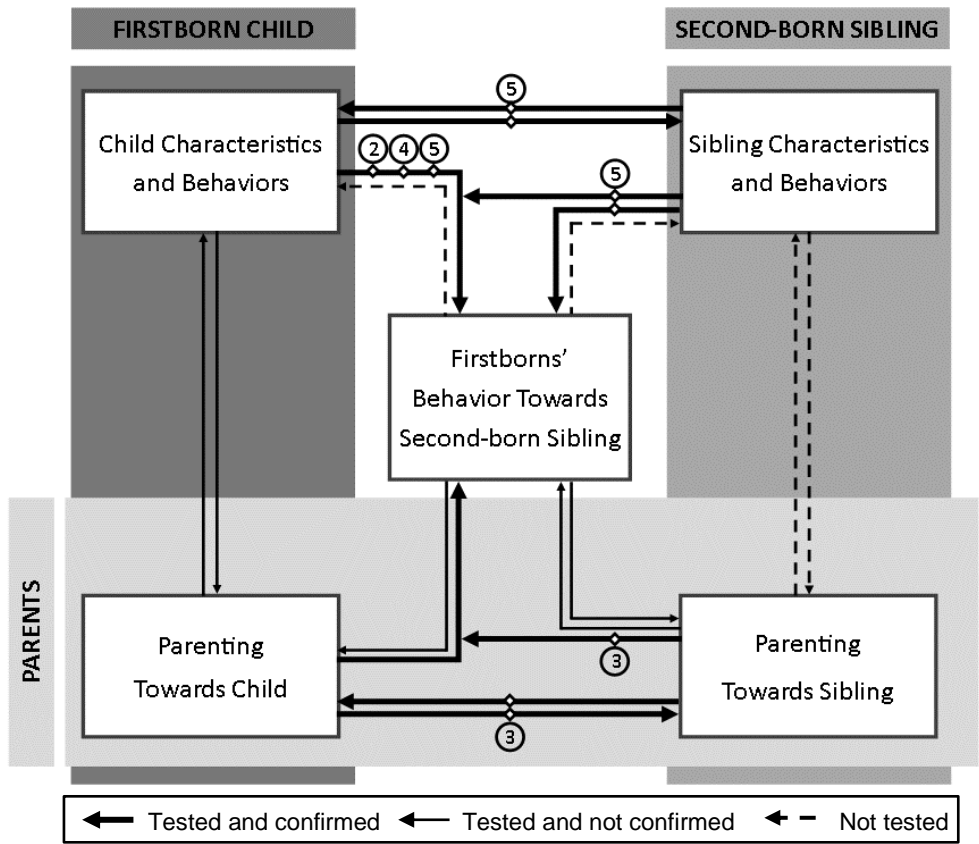


Figure 1. Model of tested and untested family processes in families with two children

Note. The numbers refer to the chapters focusing on the specific aspect.

Child characteristics and firstborns' behaviors towards the younger sibling. In Chapter 2 and Chapter 4 child characteristics of both siblings and firstborns' interactions with the second-born child were examined in families with two children, representing the upper part of Figure 1. Characteristics of both siblings were investigated in relation to children's sharing behavior with their younger siblings, and the children's behavior towards their younger siblings during parental limit setting. More specifically, firstborns' interference in or prevention of noncompliant behaviors of their younger sibling and firstborns' comforting behavior towards a distressed younger sibling were examined. Firstborns' prosocial behavior increased with age - older firstborns shared more treats with their younger sibling (Chapter 2) and displayed more sibling support during parental limit setting (Chapter 4) than younger firstborns. These increases in prosocial behavior from the age of two to four years of age are consistent with the developmental pattern of prosocial behavior described in the literature. Although prosocial behavior develops until adolescence, the frequency of displaying prosocial behavior increases especially during the toddler and preschool years (Fabes & Eisenberg, 1998; Hastings, Utendale, & Sullivan, 2007).

Moreover, gender of the firstborn children moderated the relation between empathy and sibling discipline and support (Chapter 4), indicating that empathy is related to gender specific social behaviors towards a younger sibling. More empathic boys displayed more sibling discipline during parental limit setting, while more empathic girls displayed more sibling support. Main effects of firstborns' gender both in relation to their sharing, discipline and comforting behaviors towards their younger sibling were not significant.

Characteristics of second-born children were unrelated to the behaviors their older siblings showed towards them. The number of treats firstborn children shared with their second-born siblings was not related to gender or externalizing behavior of the second-born children (Chapter 2). In addition, gender of the second-born children was neither related to firstborns' sibling discipline nor sibling support (Chapter 4). This supports the view that child gender, especially gender of the younger sibling, is less important in sibling interactions than it may be in interactions with peers (McHale, Kim, Whiteman, & Crouter, 2004).

Overall it seems that characteristics of the firstborn are more influential in their behaviors towards the second-born child, than

characteristics of the second-born child. Because of their more advanced developmental level compared to their younger siblings, firstborns will more often take the lead during sibling interactions and have more control over their younger sibling than vice versa (Howe & Recchia, 2005; Howe, Rinaldi, Jennings, & Petrakos, 2002; Recchia & Howe, 2009). So firstborn children may respond to their younger siblings irrespective of the younger siblings' gender, while second-born children with empathic older brothers will have different experiences in sibling interactions than children with empathic older sisters. These different experiences in sibling interactions may result in different socio-emotional development in second-born children (Howe & Recchia, 2005). Children with more empathic older brothers may, as a result of being disciplined more often, learn to be compliant faster during parental limit setting, while children with more empathic older sisters may feel more supported, experience a warmer sibling relation, and as a result may develop better social skills (Howe et al., 2002). Based on these results experiences of second-born children within sibling interactions may depend on characteristics of their firstborn sibling. The supposedly bidirectional relation between older and younger siblings' characteristics and behaviors, as presented in Figure 1, may be more unidirectional, at least during early childhood. How these interactions may influence second-born children's development requires further research.

Birth order and sibling gender configuration. The results described in Chapter 5 provide evidence for the importance of birth-order effects on both adaptive and maladaptive social development. Second-born children displayed more sharing, higher levels of empathy, more compliance, and more externalizing behavior than their firstborn siblings at the same age. This indicates that different experiences of firstborn and second-born children influence their development. In line with social-learning theory (Bandura, 1977), second-born children seem to profit from their interactions with older siblings and their observations of parent-sibling interactions, or from having more experienced parents. The presence of an older sibling provides second-born children with the opportunity to practice with social interactions and reciprocal relations, which might enhance their prosocial development (Howe, Petrakos, Rinaldi, & LeFebvre, 2005). In addition, firstborns may actively teach new skills to the second-born child (Howe & Recchia, 2005), and frequently discipline or support second-born children

during a challenging situation (Chapter 4), which may enhance compliance in second-born children. Furthermore, firstborn children provide a model for their younger siblings (Bandura, 1977). Through observational learning, second-born children may learn behaviors by imitating their firstborn sibling or by observing parent-sibling interactions (Barr & Hayne, 2003). Especially compliance may be influenced by these processes, because in parental limit-setting situations with the two siblings present, most firstborn children will provide a more compliant role model for the second-born children (Chapter 5).

Siblings also learn maladaptive behaviors from each other through observational learning. Previous studies have indicated that observational learning is an important mechanism through which externalizing behaviors, for example aggression, are learned (Patterson, Dishion, & Bank, 1984). Hence, the results indicating that second-born children display more externalizing behaviors could also be explained through processes of observational learning.

Sibling gender configuration only moderated the birth-order effect on inhibitory control (Chapter 5). At the age of three years, second-born girls had higher levels of inhibitory control than their firstborn brothers, while no birth-order effect for other sibling gender configurations was found. Given the result described in Chapter 4 that siblings of more empathic firstborn brothers may experience more sibling discipline, the development of self-regulation may be stimulated more, which could encourage the development of inhibitory control. The combination of this tendency of firstborn boys and gender-differentiated parenting with parents stimulating inhibition more in girls than in boys (Bjorklund & Kipp, 1996), could explain why only second-born sisters outperform their firstborn brothers.

As described above, the behavior of firstborn children towards their younger siblings was related only to the gender of the firstborn children themselves and not to the gender of their younger siblings or to gender sibling configuration. The results described in this dissertation show that during early childhood sibling gender configuration had a minimal effect on social development, while birth order had a large effect which was stable across different aspects of social development. This highlights the importance of taking birth order into account when investigating child social development. Sibling gender configuration seems to be less important than

birth order for socio-emotional development during early childhood. An explanation could be that interactions between siblings become more gender specific at a later age, for example during adolescence, when processes of imitation and de-identification become more dependent on the combination between sibling gender configuration and quality of the sibling relation (Whiteman, McHale, & Crouter, 2007).

The results concerning birth order suggest that both parenting and interactions between siblings may be influenced by child characteristics such as birth order and gender, and that these in turn may influence differences in the development of firstborn and second-born children. These processes are presented in Figure 1 and underline the importance of extending family system models with the relation between child characteristics of both siblings and family processes in order to explain within-family differences in the development of siblings.

Parenting and sibling interactions. In addition to firstborn and second-born children's characteristics, parenting towards both siblings was related to firstborns' interactions with their younger sibling (Figure 1). In Chapter 2, situation-specific factors related to the presence of a parent predicted firstborns' sharing behavior. Firstborn children shared more with their younger siblings when they interacted with one of their parents directly before the sharing episode. In addition, at the age of four years, they shared more in the presence of their fathers than in the presence of their mothers. Sharing behavior in these young children seems to be more positively affected by recent experiences with parent-child interactions than by experiences with interactions with an unfamiliar adult, and by the presence of a specific parent. This indicates that sibling interactions at least partly depend on other factors outside the sibling dyad. The effect of the experience with a parent-child interaction on sharing is congruent with results of recent research suggesting that situational factors, such as having a positive mood or being observed by a peer or even being presented with pictures of eyes, are more important than parenting or individual differences in predicting prosocial behavior (Leimgruber, Shaw, Santos, & Olson, 2012; Powell, Roberts, & Nettle, 2012; Van IJzendoorn, Bakermans-Kranenburg, Pannebakker, & Out, 2010). Moreover, experiences during the parent-child interaction may lead to more sharing behavior during the sharing episode through a spillover effect of positive interactions (Criss & Shaw, 2005; Erel, Margolin, & John, 1998), in

line with family system theories (Minuchin, 1985; Volling et al., 2009). Interactions with an unfamiliar adult are predicted to have less influence on subsequent sibling interactions.

In Chapter 3 firstborn children shared more and were more compliant when fathers were more sensitive towards them, but only if fathers were less sensitive towards their younger brother or sister. The effect of sensitivity of both parents directed towards the firstborn was not related to the firstborns' sharing behavior (Chapter 2), and maternal sensitivity directed towards the firstborn was not related to firstborns' compliance (Chapter 3). Extending family system theories (Minuchin, 1985; Volling, Kolak, & Blandon, 2009), Chapter 3 showed that child social development is influenced by parenting directed towards them in combination with the parenting towards a sibling.

Given that children from the age of six months already compare behaviors directed towards themselves and towards others, and from that age feel jealous when they are being disadvantaged (Hart, 2010), social comparison between siblings may be an important process in the development of social behaviors. Contrary to previous studies that found negative developmental outcomes for all children as a consequence of differential parenting, the results of Chapter 3 show a positive effect of social comparison, with children who experience to be favored over their younger siblings displaying more positive behavior than children who experience similar or lower levels of sensitivity compared to their younger sibling. Since sharing was observed in interaction with the second-born sibling instead of with parents or peers, compassion with the less favored sibling may explain the positive relation between sharing and being favored. Moreover, compliance of the firstborn children was also observed during a situation in which both siblings were present. The presence of the younger siblings may have emphasized the effect of social comparison and sibling rivalry on the behavior of the firstborn children (Boyle et al., 2004), which made them possibly more inclined to comply with parental rules to assure continuation of their favored position compared to their younger siblings (Fearon et al., 2006).

Finally the studies described in this dissertation emphasize the importance of including fathers in family research. The interaction effect of sensitivity towards the two siblings on firstborns' behavior was only significant for fathers' sensitivity and not mothers' sensitivity (Chapter 3). In

addition, at the age of four years, firstborns shared more in the presence of their fathers than in the presence of their mothers (Chapter 2). These results may indicate that socialization by fathers towards both children is important in explaining variance in the social development of siblings. Children have been found to exhibit greater self-regulated compliance towards their fathers than towards their mothers (Feldman & Klein, 2003). In addition, although fathers and mothers are similar in their directedness during discipline situations, fathers are often seen by their children as more restrictive than mothers, and by the age of four years they are more compliant towards their fathers (Power, McGrath, Hughes, & Manire, 1994). It could be that fathers are more important for the development of their firstborn than of their second-born children in the first years after the birth of the second child (Volling, 2012). During these years second-born infants need more care than their older siblings, and as a result mothers tend to spend more time with the second-born infant, while fathers may spend more time with the firstborn child (Volling, 2012). Since fathers and firstborns spend more time together, fathers have more opportunities to influence the behavior of the firstborn compared to the behavior of the second-born child.

In addition to child characteristics, parenting is related to sibling interactions and child social development through parent-child interactions preceding the sibling interaction and social comparison mechanisms. This is presented in the lower part of Figure 1. The model describes the combination of child and parent effects on firstborns' behaviors towards the second-born child. In addition to these effects, parenting is related to child characteristics and behaviors, for example child gender or temperament (Brody, 1998; Hastings, McShane, Parker, & Ladha, 2007), therefore these relations were added to the model presented in Figure 1. Future research should investigate these processes as an important addition to the parenting directed towards the children in the family.

Limitations

Some limitations of the studies described in this dissertation have to be mentioned. First, the sample consisted primarily of highly educated parents, due to a selective non-response of parents with lower educational levels. In addition, our sample consisted predominantly of Caucasian families due to our selection criteria aimed at obtaining a homogenous sample, and although

the educational level of our sample is comparable with those of convenience samples of other studies including both fathers and mothers (e.g. Blandon & Volling, 2008; Verhoeven, Junger, Van Aken, Dekovic, & Van Aken, 2010), these issues limit the generalizability of the results. Since ethnicity, social status and parental educational background may influence the early development of social behavior within families (e.g., Linver, Brooks-Gunn, & Kohen, 2002), the relation between parent-child interactions, child characteristics, and sibling interactions needs to be studied further in more diverse samples.

A second limitation is that the studies described in Chapter 3 and 4 use cross-sectional data and thus longitudinal bi-directional associations between parenting, older siblings' behavior and younger siblings' behavior could not be addressed. Although the results of these studies highlighted relevant associations between sibling behaviors, child characteristics and parenting behavior, it is important that future research investigates the development over time of interactions between parents and children and between siblings. Longitudinal designs could explain how siblings influence each other and how child behavior could influence parenting towards a sibling. Based on the comparison of socio-emotional behavior of firstborn and second-born children in Chapter 5, the conclusion can be drawn that second-born children have an advantage in their social development compared to their older siblings, but which processes are responsible for this difference remains unclear. Further research could use longitudinal cross-lagged models to investigate siblings' mutual influences on their socio-emotional development and bidirectional associations between sibling interactions and parenting.

Implications for Practice and Research

The results described in this dissertation emphasize the importance of investigating interactions between siblings and interactions between parents and both children. Currently most research concerning family influences on child social development focuses on one child in a family and on dyadic parent-child interactions. Recently, some studies investigated triadic interactions between two parents and a child and indicated that father's and mother's behaviors towards a child differed if they are observed in a dyadic or a triadic interaction (e.g., McHale, Fivaz-Depeursinge, Dickstein, Robertson,

& Daley, 2008; Sacrano de Mendonça, Cossette, Strayer, & Gravel, 2011). Studies observing parenting in a situation with one parent and two children are scarce (Farnfield, 2009), whereas this may substantially differ from parenting observed in a dyadic situation, and interacting with two children is a common situation in daily family life for families with two or more children.

In a related vein, given the importance of sibling interactions and parenting towards a sibling for social development, interventions on problem behaviors should more often include siblings (Bank & Kahn, 1975; Minuchin, 1985). Interventions aimed at changing parent-child interactions are likely to also influence interactions between the parent and the sibling and interactions between siblings (Minuchin, 1985). There are some situations in which siblings, rather than parents, are involved in therapy, namely when problems concern the sibling dyad directly or when structural changes within the family occur (e.g. due to parental divorce) (Bank & Kahn, 1975; Gnaulati, 2002). Sibling therapy aims to improve the sibling relation, which could in turn decrease child behavioral problems. However, therapies including both parents and siblings may be more effective in changing maladaptive social development by influencing interaction patterns between all family members directly.

Conclusion

The results of the studies described in this dissertation provide evidence supporting family system models and extend this theory by relating the interplay between family processes and individual characteristics to child behavior in sibling interactions (Figure 1). Sibling interactions may in turn influence socio-emotional development of both siblings. The interplay between parental and child influences can vary between siblings within the same family and may explain some of the differences in socio-emotional development between siblings. Our study is the first to investigate sibling discipline and support in a parental limit-setting situation and adds to the few studies that examined the importance of birth-order on socio-emotional development during early childhood. The results of the current set of studies highlight the importance of including all children, and parenting towards all children within a family, when examining socio-emotional development of children with siblings.