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## Growing up together

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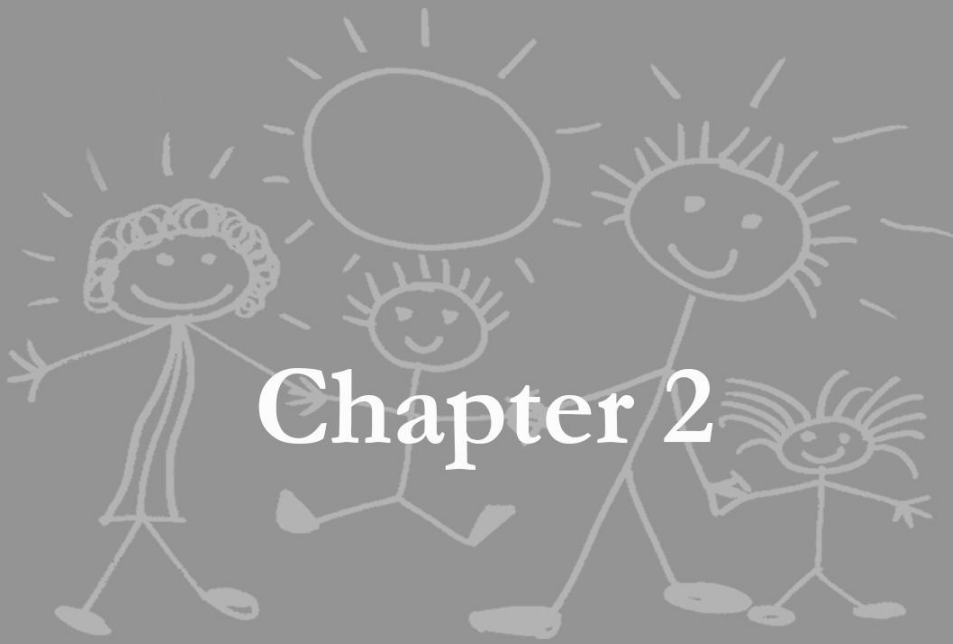


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**To Share or Not to Share:  
Parental, Sibling, and Situational  
Influences on Sharing with a  
Younger Sibling**

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### **ABSTRACT**

Sharing is an important indicator of internalized prosocial values. We examined predictors of sharing of 302 preschoolers with their younger siblings in a one-year longitudinal study. Sharing was observed during different home visits, once with father and once with mother. We examined the following predictors: both children's externalizing behavior, observed parental sensitivity, and situational factors. Preschoolers' sharing was stable and increased with age. Preschoolers shared more when sharing was preceded by a structured interaction with a parent compared to free play with an unfamiliar adult. At age 4 they shared more in fathers' presence than in mothers' presence. Parental sensitivity nor child behavior were related to sharing. These findings demonstrate stability and the importance of situational factors in the development of prosocial behavior.

*Keywords:* prosocial development, siblings, sensitivity, sharing, externalizing behavior

## INTRODUCTION

Children with siblings experience what it means to share from an early age (Hastings, Utendale, & Sullivan, 2007). Several studies have shown a stable positive relation between prosocial behaviors of siblings (Abramovitch, Corter, Pepler, & Stanhope, 1986; Dunn & Munn, 1986), which can only partly be explained by genetic influences on prosocial behavior as half of the variance in prosocial behavior has been related to non-shared environmental factors (Knafo, Israel, & Ebsteina, 2011). In this study we examined preschoolers' sharing behavior with their younger siblings and its predictors, including child characteristics, parenting behavior of both parents, and situational factors.

Prosocial behavior comprises several different behaviors like helping, sharing, and comforting. Sharing is an important indicator of internalized prosocial values (e.g., Knafo & Plomin, 2006). Variations in the development of sharing behavior have often been related to parenting practices (e.g., Hastings, Utendale et al., 2007; Van IJzendoorn, 1997). Positive parenting behaviors such as maternal warmth and sensitivity are associated with more prosocial behavior including sharing in children (e.g., Kiang, Moreno, & Robinson, 2004; Knafo & Plomin, 2006). The imitation of other-orientated behavior of parents is fundamental for the internalization of social values in children. Especially inductive reasoning and parental warmth are important factors contributing to the internalization of prosocial behavior (Hastings, Utendale et al., 2007). However, several studies have indicated that parenting practices explain only a modest part of the variance in child prosocial behavior (Koenig, Cicchetti, & Rogosch, 2004; Van IJzendoorn, Bakermans-Kranenburg, Pannebakker, & Out, 2010). Instead, prosocial behavior may be influenced primarily by situational factors that vary from one situation to another. For example, individuals have been found to show more prosocial behavior when they are being observed, because of a desire for approval and the expectancy that 'good' behavior will be rewarded by the observer (Van Rompay et al., 2009). In addition, preschoolers were found to share more generously when they were observed by the peer recipient (Leimgruber, Shaw, Santos, & Olson, 2012). Even the presence of images of observing eyes appears to increase prosocial behavior (Powell, Roberts, & Nettle, 2012). This suggests that the presence of a parent observing the child's sharing behavior, even without the parent's explicit interference and irrespective of parental

sensitivity, could influence the child's tendency to share. For example, the child's previous experiences of being rewarded for sharing by that parent might influence the level of sharing when being observed by the parent. The effects of parental presence may be different for mothers versus fathers. Mothers praise their children more often in general and stimulate their children to show prosocial behavior more than fathers do (Hastings, McShane, Parker, & Ladha, 2007; Julian, McKenry, & McKelvey, 1994). It follows then that effects of the mother's presence on sibling sharing may also be more pronounced than that of father's presence. Nevertheless there is some evidence that parental presence is not related to helping a stranger in 2-year-olds (Warneken & Tomasello, 2013). Reluctance to help or comfort a stranger in young children could be due to the unnaturalistic setting and fear of strangers (Young, Fox, & Zahn-Waxler, 1999), both of which are not relevant to sibling sharing in the home environment. In addition, other situational factors have proven to influence prosocial behavior, including the social context in that individuals act more prosocially when there are others who act prosocially, and the individual's mood such that a positive mood is related to more prosocial behavior (Isen, 1987; Van IJzendoorn et al., 2010).

In addition to external factors like parenting and the situational aspects, internal factors such as child characteristics of both siblings influence sharing (e.g., Knafo & Plomin, 2006). For example, gender of both siblings may be relevant, because girls tend to be more prosocial towards their younger sisters than towards their younger brothers (e.g. Kier & Lewis, 1998). One other important child characteristic that might influence sharing is externalizing behavior, which is characterized by a lack of behavioral control and self-regulation, and is negatively associated with prosocial behavior in interaction with peers (Hastings, Zahn-Waxler, Robinson, Usher, & Bridges, 2000; Pursell, Laursen, Rubin, Booth-LaForce, & Rose-Krasnor, 2008). Moreover, externalizing behavior is related to less sibling warmth and intimacy and more conflicts between siblings (Kramer, 2010). The amount of sharing children experience depends on the prosocial skills of their sibling as well as on their own prosocial skills (Dunn, Slomkowski, & Beardsall, 1994). Thus, externalizing behavior of both siblings may be negatively related to sharing.

Most studies investigating predictors of prosocial behavior are cross-sectional and focus on either situational factors or parenting (Knafo &

Plomin, 2006; Koenig et al., 2004; Leimgruber et al., 2012). Combining these factors in one study would provide more information on the relation between parenting and prosocial behavior over and above situational factors. In the current study we investigated situational, child and parenting factors, in relation to child sharing behavior in a longitudinal design. This design makes it possible to examine the unique effects of each factor and to explore changes over time.

The aim of the current study is to examine the development of sharing behavior of preschoolers with their younger sibling. In addition, we investigate predictors of sharing, including sibling characteristics (gender, externalizing behavior), parental sensitivity, and situational factors (gender of parent present, preceding task). Our hypotheses are: (1) Preschoolers' sharing behavior increases with age, while individual differences in sharing remain stable over time; (2) Externalizing behaviors of the sharer and the receiver are related to less sharing; (3) Preschoolers' sharing behavior is more influenced by situational factors than by parental sensitivity; (4) Preschoolers share more in the presence of their mothers than in the presence of their fathers.

## METHOD

### Sample

This study is part of the longitudinal study *Boys will be Boys?* examining the influence of gender-differentiated socialization on the socio-emotional development of boys and girls in the first four years of life, including both fathers and mothers. This paper reports on data from the first two waves.

Families with two children in the Western region of the Netherlands were eligible for participation. They were selected from municipality records. Families could be included if the second born child was 12 months of age at the time of recruitment and the first born child was around two years older. Exclusion criteria were single parenthood, severe physical or intellectual handicaps of parent or child, and being born outside the Netherlands and/or not speaking the Dutch language. Between April 2010 and May 2011 eligible families were invited by mail to participate and 31% ( $n = 390$ ) of the 1,249 families agreed to participate. The participating families did not differ from the non-participating families in age, educational level of both parents, or degree of urbanization of the place of residence. In the second wave five families did not participate as a result of moving out of the Netherlands,

family problems, or because families considered further participation as too much of a burden. For the current paper, families were excluded (1) if neither parent had completed the CBCL in both waves ( $n = 10$ ), (2) if a parent interfered in the sharing task or if the children refused to participate during this task ( $n = 59$ ), and (3) if a family had more than one missing value on the main variables in one of the two waves ( $n = 19$ ). These exclusion criteria resulted in a final sample of 302 families. More information about both the computer task and the sharing task is provided in the Measures section. The included families did not differ from the excluded families in any of the background variables (all  $ps > .21$ ). The distribution of family constellations was as follows: 81 boy-boy (27%), 68 girl-girl (23%), 77 boy-girl (25%), and 76 girl-boy (25%).

At the time of the first visit at Wave 1 preschoolers were between 2.5 and 3.6 years old ( $M = 3.0$ ,  $SD = 0.3$ ) and their younger siblings were, on average, 12.0 months old ( $SD = 0.2$ ). In the second wave, preschoolers were between 3.3 and 4.6 years of age ( $M = 4.0$ ,  $SD = 0.3$ ) and their younger siblings were 24.1 months old ( $SD = 0.3$ ). At Wave 1 mothers were aged between 25 and 46 years ( $M = 34.0$ ,  $SD = 3.8$ ) and fathers were between 26 and 63 years of age ( $M = 36.7$ ,  $SD = 5.1$ ). At Wave 1 most participating parents were married or had a cohabitation agreement or registered partnership (93%), and the remaining 7% lived together without any kind of registered agreement. With regard to educational level, most mothers (81%) and fathers (77%) had a high educational level (academic or higher vocational schooling). At the time of Wave 2 a third child had been born in 31 (10%) of the families and parents of one family were divorced. Analyses with and without these families yielded similar results, so these families were retained in the current data set.

### **Procedure**

Each family was visited twice at every wave, once for observation of the mother and the two children and once for observation of the father and the two children, within about two weeks after the younger sibling's birthday. The order of father and mother visits was counterbalanced. Families received a gift of 30 Euros after two visits and small presents for the children. Before each home-visit both parents were asked to individually complete a set of questionnaires. During the home-visits parent-child interactions and sibling



interactions were filmed, and children and parents completed computer tasks. All visits were conducted by pairs of trained graduate or undergraduate students. Informed consent was obtained from all participating families. Ethical approval for this research was provided by the Research Ethics Committee of the Institute of Education and Child Studies of Leiden University.

## Measures

**Sharing.** Preschoolers received a small box of raisins (a common children's treat in the Netherlands) and were instructed by the experimenter to share these with their younger siblings. The sharing task was administered during both the father and mother visits. During the first minute of the task, the parent was present but was instructed not to interfere with the task and not to encourage the preschooler. After one minute parents were free to interfere if they considered this necessary. The task was filmed and the number of treats shared with the younger sibling during the first minute (i.e. without verbal or nonverbal interference or encouragement of the parent) was counted. Treats shared with or by the parent were not counted; when a preschooler took treats back from the younger sibling these were subtracted from the total number of shared treats. Parents within the same family were coded by different coders to guarantee independency among ratings. Interobserver reliability was adequate; the intraclass correlations (single rater, absolute agreement) between all pairs of seven independent coders were all above .70. Both coders and experimenters were blind for the hypotheses of this study.

**Parental Sensitivity.** Each dyad received a bag with toys and was invited to play with the toys for eight minutes. In Wave 1 this free play situation was the first and in Wave 2 the second observed parent-child interaction of the visit. The Sensitivity scale from the fourth edition of the Emotional Availability Scales (EAS; Biringen, 2008) was used to measure parental sensitivity during free play. The scale is divided into seven subscales; the first two subscales are coded on a 7-point Likert scale and the other subscales are coded using a 3-point Likert scale. The sixth author, who is an experienced coder of parent-child interactions, completed the online training provided by Zeneyp Biringen and then trained a team of coders.

During the team training some alterations were made to improve intercoder agreement, for more information about these alterations see Hallers-Haalboom et al. (2014). Fathers and mothers of the same family were coded by different coders to guarantee independency among ratings. Moreover, sensitivity and sharing behavior were coded by different coders. Intraclass correlations (single rater, absolute agreement) for all pairs of the seven coders were higher than .70 ( $n = 60$ ). During the coding process, the first 100 videotapes were coded independently by separate coders and regular meetings were organized to prevent coder drift.

**Task order.** The task preceding the sharing task was counterbalanced between families, and could therefore be used as a measure of a situational factor of sharing behavior. Prior to the sharing task, half of the preschoolers were involved in a structured interaction task with the parent, in which the child had to follow the parent's lead. In Wave 1 the child had to follow instructions regarding a cleanup task and in Wave 2 the child followed the parent in a structured picture book reading activity. The other half of the preschoolers were involved in free play with one of the researchers, in which they could choose what they wanted to do and what toys to play with. Their younger siblings were not present during these tasks. Within each wave the task order was the same for the father and mother visit.

**Child Externalizing Behaviors.** The Child Behavior Checklist for preschoolers (CBCL/1½-5; Achenbach & Rescorla, 2000) was used to assess externalizing behaviors of both children. The broadband Externalizing Problems scale of the CBCL/1½-5 was shown to be applicable to 1-year-old children (Van Zeijl, Mesman, Stolk et al., 2006). Both fathers and mothers indicated whether they observed any of the 55 behavior problems in the last two months on a three-point scale. The internal consistencies on the externalizing scale ranged from .88 to .92. Externalizing problem scores reported by fathers and mothers were significantly correlated for both preschoolers (Wave 1:  $r = .58, p < .01$ . Wave 2:  $r = .49, p < .01$ ) and the younger siblings (Wave 1:  $r = .46, p < .01$ , Wave 2:  $r = .54, p < .01$ ), and scores of fathers and mothers were not significantly different from each other at either wave for either sibling ( $p_s > .16$ ). We therefore combined the scores of fathers and mothers (for the preschoolers and the younger sibling separately).

## Data Analysis

All measures were inspected for possible outliers that were defined as values larger than 3.29 *SD* above the mean (Tabachnick & Fidell, 2012). Outliers were winsorized to make them no more extreme than the most extreme value that fell within the accepted range conform a normal distribution (Tabachnick & Fidell, 2012). Sharing behavior was positively skewed, and a logarithmic (log10) transformation was used for analyses (Tabachnick & Fidell, 2012). All other measures were normally distributed.

Analyses were conducted using SPSS 19.0. For the four repeated measures of sharing multi-level analysis was used. A linear mixed-effects model with the four measurements of sharing (two measures each wave; once during the father visit, once during the mother visit) was used to test the associations with time at Level 1 (L1) and situational, family, and child measures at Level 2 (L2; i.e., Gender of the parent, parental sensitivity, task preceding sharing, age, and gender and externalizing behavior of both children).

## RESULTS

In all visits the number of treats shared by the preschooler ranged from not sharing any treats to giving all the treats to the younger sibling ( $n = 0-30$ ). Within both waves, the number of treats shared during the first and second visit was positively correlated (Table 1). Moreover, a positive correlation was also found between the second visit of Wave 1 and the first visit of Wave 2 ( $r(253) = .15, p < .05$ ). This implies that children who shared a large number of treats with their younger sibling were also more likely to share a large number of treats during the subsequent visit, within 2 weeks as well as 1 year later.

The means, standard deviations, and bivariate correlations of the predictors and the outcome measures are presented in Table 1. Parental sensitivity and externalizing behavior of both siblings showed stability over time. More externalizing behavior of the younger sibling was associated with less sharing during the first visit of Wave 1. Externalizing behaviors of both siblings were positively correlated at both waves.

To investigate the effects of situational factors, parenting, and characteristics of both siblings on sharing in the presence of a parent, a two-level model was estimated, in which the four subsequent measures of sharing were nested within families.

Table 1.

*Summary of Means, Standard Deviations and Correlations for All Variables*

Wave 1	Wave 2							<i>M</i>	<i>SD</i>
	1	2	3	4	5	6	7		
1. Sharing by oldest during first visit	<b>.14</b>	.17**	-.07	-.06	.07	-.03	.05	5.39	7.26
2. Sharing by oldest during second visit	.31**	<b>.09</b>	.04	-.07	-.03	-.05	.03	5.42	6.02
3. Paternal sensitivity	-.15	-.04	<b>.30**</b>	-.04	-.00	-.04	-.02	23.86	3.06
4. Maternal sensitivity	-.03	-.02	.16**	<b>.22**</b>	-.06	-.06	-.04	24.52	2.81
5. Age oldest child	.02	.11	.00	.02	<b>.98**</b>	-.00	-.00	4.02	0.31
6. Externalizing behavior oldest	-.10	-.10	-.05	-.09	-.03	<b>.74**</b>	.40**	19.71	8.60
7. Externalizing behavior younger	-.24**	-.06	.02	-.02	-.01	.40**	<b>.56**</b>	21.32	8.75
<i>M</i>	3.66	3.73	24.13	24.93	3.02	17.67	12.99		
<i>SD</i>	5.16	4.26	2.95	2.66	0.30	8.13	6.46		

*Note:*  $n = 302$ . \*  $p < .05$  \*\*  $p < .01$ . Correlations below the diagonal refer to associations between variables within Wave 1, correlations above the diagonal refer to associations between variables within Wave 2, and correlations on the diagonal reflect longitudinal associations between Wave 1 and Wave 2. Possible scores for sharing range from 0 to 30. Parental sensitivity is rated on a scale ranging from 7 to 29. Child externalizing behavior is rated on a 3-point Likert scale, ranging from 0 to 2. For all variables, higher scores indicate more of that behavior.

Level 1 was the time level, which estimates the influence of the repeated assessments, and Level 2 the family level, with factors that differed between families. Predictors at Level 2 were gender of the parent present, parental sensitivity, task order, gender and externalizing behavior of both children, and preschoolers' age. All continuous predictors were centered at their grand mean. The intraclass correlation of the unconditional model (i.e., the model without predictors) was .11, which indicates that 11% of the variance in sharing was explained by the four repeated measures of sharing within a family. The linear mixed-effects models are presented in Table 2. The fixed effects indicate that at Level 1 there was a significant effect of visit number, indicating that children shared more during the two visits of Wave 2 ( $M = 5.38$ ,  $SD = 6.55$ , non-transformed), than during both visits of Wave 1 ( $M = 3.70$ ,  $SD = 4.71$ , non-transformed). Therefore it is not surprising that this effect of visit number disappeared when age of the oldest sibling was entered in the model, due to the overlapping variance of these variables. At Level 2 a significant main effect of the task preceding the sharing task was found, indicating that children who were involved in a task with their parent (either structured interaction or clean up) prior to the sharing task shared more treats ( $M = 4.82$ ,  $SD = 6.12$ , non-transformed) with their younger sibling than children who were involved in free play with the research assistant ( $M = 4.22$ ,  $SD = 5.33$ , non-transformed). No main effects were found for presence of father or mother, parental sensitivity, or sibling characteristics.

For gender of the parent present a significant interaction was found with age of the preschooler. To examine the interaction effect, separate regression analyses for fathers and mothers were conducted (Figure 1). Preschoolers' amount of sharing increased with age, and this effect was stronger when they shared in the presence of their father than in the presence of their mother. No differences were found in the amount of sharing in the presence of father and mother during Wave 1 (father:  $M = 0.54$ ,  $SD = 0.27$ ; mother:  $M = 0.58$ ,  $SD = 0.31$ ),  $t(541) = 1.46$ ;  $p = .15$ , or Wave 2 (father:  $M = 0.68$ ,  $SD = 0.36$ ; mother:  $M = 0.63$ ,  $SD = 0.34$ ),  $t(532) = -1.56$ ;  $p = .12$ .

The random parameters revealed that the random intercept accounted for a significant proportion of variance, even after adding various Level 2 predictors (Table 2).

Table 2.  
*Multilevel Model of Fixed and Random Effects for Sharing Behavior (LG10)*

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	<i>b</i> ( <i>SE</i> )	<i>b</i> ( <i>SE</i> )	<i>b</i> ( <i>SE</i> )	<i>b</i> ( <i>SE</i> )	<i>b</i> ( <i>SE</i> )	<i>b</i> ( <i>SE</i> )
Fixed factors						
Intercept	.61**(.01)	.68**(.02)	.68**(.03)	.61**(.05)	.58**(.07)	.58**(.07)
Level 1 (Time)						
Visit number 1		-.15**(.03)	-.14**(.03)	-.15**(.03)	-.09 (.05)	-.08 (.05)
Visit number 2		-.10**(.03)	-.10**(.03)	-.10**(.03)	-.04 (.05)	-.04 (.05)
Visit number 3		-.05 (.03)	-.05 (.03)	-.05 (.03)	-.03 (.03)	-.02 (.03)
Level 2 (between family)						
Gender present parent			.00 (.02)	.00 (.02)	.00 (.02)	.00 (.02)
Parental sensitivity			-.00 (.00)	-.00 (.00)	-.00 (.00)	-.00 (.00)
Task order				.04*(.02)	.05*(.02)	.05*(.02)
Gender oldest child					-.02 (.02)	-.02 (.02)
Gender younger child					.01 (.02)	.01 (.02)
Age oldest child					.05 (.04)	-.07 (.06)
Externalizing oldest child					-.00 (.00)	-.00 (.00)
Externalizing younger child					.00 (.00)	-.01 (.00)
Externalizing younger * Age oldest						-.00 (.00)
Gender parent*Age oldest						.08** (.03)

*Note.*  $n = 302$ . \*  $p < .05$  \*\*  $p < .01$ . Possible scores for sharing range from 0 to 30. Parental sensitivity is rated on a scale ranging from 7 to 29. Child externalizing behavior is rated on a 3-point Likert scale, ranging from 0 to 2. For all variables, higher scores indicate more of that behavior.

Table 2.

*Multilevel Model of Fixed and Random Effects for Sharing Behavior (LG10) (Continued)*

	Variance components					
Level 1						
Residual variance	0.09** (0.00)	0.09** (0.00)	0.09** (0.00)	0.09** (0.00)	0.09** (0.00)	0.09** (0.00)
Intercept variance	0.01** (0.00)	0.01** (0.00)	0.01** (0.00)	0.01** (0.00)	0.01** (0.00)	0.01** (0.00)
-2 log likelihood	626.90	592.81	592.13	588.04	555.86	545.86

*Note:*  $n = 302$ . \*  $p < .05$  \*\*  $p < .01$ . Possible scores for sharing range from 0 to 30. Parental sensitivity is rated on a scale ranging from 7 to 29. Child externalizing behavior is rated on a 3-point Likert scale, ranging from 0 to 2. For all variables, higher scores indicate more of that behavior.

The chi-square test of the difference in  $-2 \log \textit{likelihood}$ , which is an indication of the fit of each model, showed a significant increase in explained variance between Model 1 (the random intercept model) and Model 2 (with the repeated measures of sharing included, L1),  $\chi^2(5) = 34.09, p < .001$ , between Model 3 (with gender of the parent present and parental sensitivity) and Model 4 (with task order),  $\chi^2(1) = 4.08, p < 0.05$ , between Model 4 and Model 5 (with age, gender, and externalizing behavior of the preschooler and gender and externalizing behavior of the younger sibling included, L2),  $\chi^2(5) = 32.18, p < .01$ , and between Model 5 and Model 6 (with the two interactions included, L2),  $\chi^2(2) = 10.00, p < .01$ . The difference in  $-2 \log \textit{likelihood}$  between Model 2 and Model 3,  $\chi^2(2) = .68, p = 0.71$ , was not significant. These results correspond with the significant fixed effects.

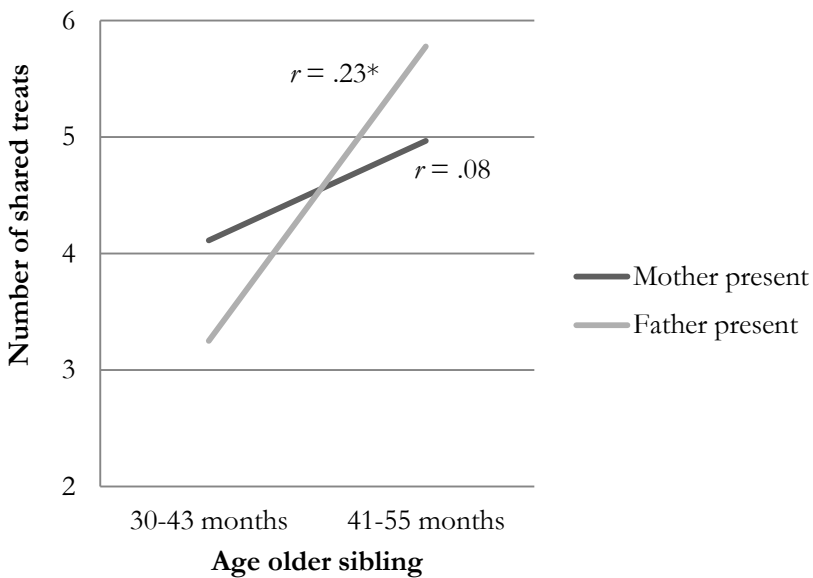


Figure 1.

Interaction of gender of the present parent and age of the older sibling on sharing (non-transformed).

Note.  $n = 302$ . \*  $p < .05$ .



## DISCUSSION

Preschoolers' sharing with their younger siblings increased with age, and children who shared more at Wave 1 also shared more during the second wave one year later. Furthermore, preschoolers shared more if they interacted in a structured task with one of their parents before the sharing task and, at the age of 4 years, when their father was present. Parental sensitivity and externalizing behavior of both siblings were not related to preschoolers' sharing behavior.

Sharing was related to the person children interacted with and the type of interaction preschoolers were involved in just before the sharing task. Children who participated in a structured activity with one of their parents shared more in the presence of this parent than children that were participating in free play with a research assistant before the sharing task. Previous interaction with the parent may make children more aware of parental expectations concerning their behavior, and may therefore make them more likely to share (Powell et al., 2012). However, the task the children were involved in before the sharing task, rather than the person they interacted with, could also have influenced their willingness to share. It could be that free play situation (with the research assistant) was more amusing for the children and evoked more pleasure than a structured task (with the parent). Previous research found that after watching an amusing film clip individuals showed less prosocial behavior (Bartlett & DeSteno, 2013), especially when costly prosocial behavior, like sharing, was involved which could be a threat for maintaining their positive mood (Carlson, Charlin, & Miller, 1988; Isen & Simmonds, 1978). Therefore, it may be that children involved in free play before sharing were less willing to share treats with their younger sibling.

Contrary to our expectations children shared more with their younger sibling at Wave 2 than at Wave 1 only when their father was present. Other studies found that mothers praise their children more often and stimulate prosocial behavior more than fathers do (Hastings, McShane et al., 2007; Julian et al., 1994). It could be that in our study children were more inclined to share in order to avoid penalty. Our result is consistent with previous findings that 2-year-old children are more compliant with their mothers' requests (Kwon & Elicker, 2012; Power, McGrath, Hughes, & Manire, 1994),

while by the age of 4 years they are more compliant with their fathers (Power et al., 1994).

Externalizing behavior of both siblings did not influence preschoolers' amount of sharing. The lack of a relation between characteristics of either sibling and preschoolers' sharing is remarkable, but may reflect the predominant significance of situational factors in shaping prosocial behavior (Van IJzendoorn et al., 2010). Although there is some stability in sharing behavior across contexts, situational demands are an important factor in predicting sharing (Carlo, Eisenberg, Troyer, Switzer, & Speer, 1991). In addition, the salience of situational factors can also be seen in the relatively low correlation between the sharing episodes in our study, especially given that within each year the two episodes were only two weeks apart using the exact same procedure. The lack of a relation between externalizing behavior and sharing may be due to the children's non-clinical levels of externalizing problems in our sample. Relations between prosocial behavior and externalizing behavior are often found in clinical samples and at older ages (Hastings et al., 2000; Pursell et al., 2008). We submit that within the nonclinical range externalizing behavior is not related to sharing behavior between siblings.

Overall, our results show that other than child age, only situational factors (rather than individual behavioral or parenting variables) were related to children's sharing behavior. Interestingly, the influential situational factors in our study both relate to parental presence, both before and during the sharing task. This suggests that expectations about parental wishes regarding prosocial behavior are relevant, which in turn means that some aspects of actual parenting behavior are also likely to play a role in the development and expression of sharing behavior. However, our measure of parenting did not capture this underlying process. It may be that more specific measures of parental encouragement regarding sharing would provide more relevant information than the measure of the more broad construct parental sensitivity.

This study has some limitations. The first is the selective nonresponse by parents with lower educational levels. This aspect could influence the generalizability of the results. However, the high educational level of our sample is comparable to educational levels of samples of other studies including both fathers and mothers, often from convenience samples (e.g.,

Blandon & Volling, 2008). It is important for future research to include lower-educated samples. Further, regarding the observational measure of sharing, we used the numbers of treats shared by the oldest siblings. The actual behavior of both siblings during the sharing task may provide valuable information about the sharing process and situational influences on sharing. Future studies should therefore explore the sharing process between siblings in more detail. However, the current study demonstrates that using a relatively simple measure, i.e., the number of shared treats, reveals meaningful associations with sharing between siblings. Finally, in explaining the effect of the situation preceding the sharing task, the type of task the children were involved in was confounded with the person they interacted with. Given that the structured task with the parent was quite different in the first and the second wave, while the effect of task order was found in both waves, we suspect that it is the interaction partner (i.e., the parent), rather than the type of task (i.e., structured), that influenced subsequent child sharing behavior. In order to distinguish their unique effects, future studies should systematically vary the interaction partner and type of task preceding sharing.

Our research is unique in its design, including the observation of parental sensitivity and child sharing behavior in different situations, with both mothers and fathers in a longitudinal design. Our findings show that preschoolers share more with their younger siblings when they interact with one of their parents just before the sharing episode and that they share more in the presence of their father. Parental sensitivity was not related to sharing, but the parent's presence as a situational factor was related to preschoolers' sharing behavior. Our results highlight the importance of situational factors in the expression of sharing behavior in children. In our study the salient situational factors were both related to parental presence, suggesting that children's expectations of parental preferences are important. Such expectations are likely to originate from specific experiences within parent-child interactions regarding sharing. Thus, a socialization factor (parenting) can turn into a situational factor (parental presence) when it comes to children's expressions of prosocial behavior.

