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No! Don't Touch the Toys:

Preschoolers' Discipline Towards their Younger Siblings

Keywords: Sibling discipline, externalizing behavior, inhibitory control, gender, early childhood

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Abstract

Parental limit setting is a challenging and common situation in the daily lives of young children. During these situations, older siblings may use their more advanced cognitive skills and their greater physical strength to discipline their younger sibling and prevent or correct noncompliant behavior. This is the first study to examine preschoolers' discipline towards their toddler siblings during parental limit setting. In addition to observing preschoolers' sibling discipline, associations with their inhibitory control and externalizing behavior, their sibling's noncompliance and both children's gender were investigated. Sibling discipline was observed during parental limit setting in 285 families during one home visit with the mother and one home visit with the father. Preschoolers did discipline their younger siblings without being asked in the majority of the families, with girls displaying more disciplining behavior than boys. Toddlers' noncompliance was related to increased sibling discipline when their older siblings showed high levels of externalizing behavior themselves, while no such relation was found in case of older siblings with low levels of externalizing behavior. Sibling discipline was not related to preschoolers' inhibitory control or toddler's gender. Sibling discipline might thus be an expression of power assertion of the older sibling, instead of the moral urge to prevent transgressions.

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**No! Don't Touch the Toys:
Preschoolers' Discipline Towards their Younger Siblings**

For firstborn children the birth of a sibling is a major transition that many of them experience when they are 2 to 3 years old. When it happens, firstborns not only experience a decrease in parental attention, but they also have to learn to interact with a younger sibling. How children interact with their younger sibling may depend on the specific situation (Garner, Jones, & Palmer, 1994; Morrongiello, Schmidt, & Schell, 2010). For example, interactions between siblings during play can be reciprocal (Howe, Rinaldi, Jennings, & Petrakos, 2002), whereas in challenging situations the older sibling may take the lead and help, or may use power assertion and try to direct or dominate the younger one (Howe, Recchia, Della Porta, & Funamoto, 2012; Howe, Ross, & Recchia, 2011; Morrongiello et al., 2010). The aim of our study was to examine children's discipline towards their younger sibling in a limit-setting situation, as well as associations with inhibitory control, externalizing behavior, and gender of both children.

Parental limit setting and discipline constitute a challenge for young children, as they have to inhibit impulses and self-regulate to comply (Kochanska, Coy, & Murray, 2001). Whereas infants generally lack the cognitive and self-regulation skills to understand and to comply with parental rules, toddlers are beginning to develop the necessary skills to respond appropriately to parental limit setting (Kochanska et al., 2001). Preschoolers start to understand the consequences of moral transgressions and show protest when faced with others' transgressions (Vaish, Missana, & Tomasello, 2011). Because of their more advanced development in this domain, they may try to discipline their younger sibling and prevent or correct noncompliant behavior. Preschoolers may however also use their superior strength and power (Howe et al., 2011) to prevent the younger sibling from doing something that the older one is not allowed to do. Various underlying processes might explain the use of discipline in

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sibling interactions: it could arise from the moral urge to prevent transgressions as well as the desire to cooperate with the parent, or the desire to dominate the younger sibling, or from feelings of jealousy or frustration with the younger sibling's behavior.

The normative development of compliance during toddlerhood and preschool make the study of sibling discipline in this period particularly interesting. During the toddler years, children start to internalize moral and conventional rules, and shift from requiring supervision to be compliant to self-regulated or committed compliance (Kochanska & Aksan, 2006). This process is referred to as conscience development, which is composed of three mechanisms: moral emotion, moral conduct, and moral cognitions. Moral emotion (i.e., feeling guilty after a transgression) and moral conduct (i.e., being compliant in the absence of external control) emerge around the age of 2 years (Kochanska, 1993; Kochanska & Aksan, 2006). Moral cognition, which refers to a child's ability to understand rules and the consequences of violation of these rules, emerges somewhat later, around the age of 3 years (Kochanska & Aksan, 2006; Vaish et al., 2011). A study with 2- and 3-year-old children showed that 3-year-olds protested when a hand puppet destroyed a picture or sculpture belonging to another puppet, whereas 2-year-olds did not (Vaish, et al., 2011). This finding may also be relevant to situations in which a younger sibling misbehaves and does not comply with parental rules, and suggests that preschoolers might protest and try to correct their siblings' behavior by explaining parental rules or interfering, verbally or physically, with the noncompliant behavior (Howe et al., 2012). Both explaining parental rules and interfering with a sibling's noncompliant behavior can be considered sibling discipline.

Sibling discipline may be influenced by various child characteristics: the older sibling's inhibitory control or externalizing behavior, and gender of both siblings may play a role. Inhibitory control starts to develop during toddlerhood and increases with age (Kochanska, Murray, Jacques, Koenig, & Vandegeest, 1996; Williams, Ponesse, Schachar,

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Logan, & Tannock, 1999). Several studies indicate that during early childhood girls outperform boys in inhibitory control and self-regulation, which in turn makes them more compliant than boys (Kochanska et al., 1996; Kochanska et al., 2001). The ability to regulate and control behavioral impulses as represented by inhibitory control is important for rule understanding and compliance (Kochanska et al., 2001), and individual differences in preschoolers' inhibitory control have been found to be related to other-oriented behaviors and a high motivation to imitate parental behaviors (Forman, Aksan, & Kochanska, 2004; Kochanska & Aksan, 2006; Rhoades, Greenberg, & Domitrovich, 2009). Being able to inhibit behavioral responses enables children to direct their attention and behavior towards others (Rhoades et al., 2009), which in turn may allow them to focus more on the behaviors of their younger siblings and to act upon them if they feel that rules are being violated. During parental limit setting, imitating parental behavior or cooperating with parents could take the form of disciplining a sibling. Thus, if sibling discipline is an expression of more advanced moral development, higher levels of inhibitory control would be expected to be associated with more sibling discipline.

However, sibling discipline could also be related to externalizing behavior. Sibling discipline may result from preschoolers' frustration or jealousy directed at their younger sibling behaving in a way that they themselves are not allowed to do. Differential parental control, in which preschoolers receive more parental control and are more restricted in their behaviors than their younger siblings, is related to more jealous behavior during parent-child interactions and more interruptions of interactions between the parent and the younger sibling (Volling, Kennedy, & Jackey, 2010). Expressing this frustration through sibling discipline might be more prominent in children with more externalizing behaviors. Moreover, sibling discipline could also be driven by the desire to maintain dominance over the younger sibling, and thus be as a form of power assertion of the older sibling, which has been related to

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behavioral dysregulation and externalizing behaviors (Howe et al., 2011). Thus disciplining a younger sibling may be related to more behavioral control (indicated by higher levels of inhibitory control), but sibling discipline may also arise from less behavioral control (indicated by higher levels of externalizing behavior). These two hypotheses are at this stage both speculative, therefore we tested them as competing hypotheses in our study.

A third child characteristic that could be related to sibling discipline is child gender. Previous studies found gender differences in sibling caregiving and teaching behaviors (Dunn, Deater-Deckard, & Pickering, 1999; Klein & Zarur, 2002), with girls showing more caregiving and boys showing more teaching. From early childhood boys and girls display differences in their behavioral development. For example boys show more aggression than girls (i.e., Alink et al., 2006) whereas girls have better self-regulation skills and are more compliant than boys (i.e., Kochanska et al., 2001). In addition, gender differences in children are best understood when the gender of the children they are interacting with is also taken into account (Maccoby, 1998), indicating that the gender combination of the siblings could influence sibling discipline. Sibling gender combination has indeed been linked to individual differences in sibling interactions. A study on teaching strategies in preschool children towards their younger siblings indicated that teaching occurred most often in brother-brother interactions (Klein & Zarur, 2002). Other studies found that school-aged girls more often than boys displayed teaching behaviors towards their younger siblings (Brody, Stoneman, MacKinnon, & MacKinnon, 1985; Cicirelli, 1976), and that teaching by older siblings was more often directed towards younger sisters than towards younger brothers. Other studies on sibling teaching, however, found no differences between sisters and brothers (Azmitia & Hesser, 1993; Howe & Recchia, 2009).

The contribution of sibling interactions to social development during early childhood remains a scarcely studied topic. Although most children experience the birth of a younger

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sibling during their toddler years (Volling, 2012), studies concerning hierarchical sibling interactions, like teaching, often focus on middle childhood (e.g. Howe et al., 2012; Morrongiello et al., 2010). Further, discipline situations are particularly salient in young children’s daily lives, but sibling interactions in such settings seem to have escaped researchers’ attention, although they may affect young children’s development of compliance and social behavior. In this study we examined preschoolers’ discipline towards their 2-year-old siblings in a parental limit-setting context, and associations with preschoolers’ inhibitory control and externalizing behavior, younger siblings’ noncompliance, and gender of both children. Because no previous studies have addressed sibling discipline in the context of parental limit setting, we based our hypotheses on the literature concerning other hierarchical sibling interactions. We investigated two competing hypotheses: First, that discipline would be positively associated with preschoolers’ inhibitory control; and second that discipline would be positively related to preschoolers’ externalizing behavior. Since inhibitory control and externalizing behavior are expected to be negatively correlated, we do not expect to find support for both hypotheses, but consider them as competing hypotheses. In addition, we expected that higher levels of younger siblings’ noncompliance would be related to more sibling discipline, since more noncompliance implies more opportunities for discipline. Previous studies on gender differences in sibling interactions show inconsistent results, therefore we did not have a directed hypothesis on the effect of gender differences in sibling discipline.

Method

Sample

The sample was recruited in the context of the longitudinal study [BLINDED FOR REVIEW] examining the influence of gender-differentiated socialization on the socio-emotional development of boys and girls in the first years of life. This paper reports on data

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from the second wave when the second-born child was 2 years old and the firstborn was between 3.5 and 4.5 years old. Families with two children in the Western region of the Netherlands were selected from municipality records. Families were eligible for participation if at the time of recruitment the second-born child was around 12 months of age and the first born child was between 2.5 and 3.5 years old. Exclusion criteria were single parenthood, severe physical or intellectual handicaps of parent or child, and parents being born outside the Netherlands or not speaking the Dutch language. Eligible families were invited by mail to participate between April 2010 and May 2011; 31% ($n = 390$) of the 1,249 families agreed to participate. The participating families did not differ from the non-participating families on age, educational level of both parents, and degree of urbanization of the place of residence (all $ps > .11$). In the second wave 5 families did not participate as a result of moving abroad ($n = 2$), family problems ($n = 1$), or because families considered further participation as too demanding ($n = 2$). Furthermore, for the analyses of this paper, families were excluded if the younger sibling did not show noncompliant behavior during one of the visits ($n = 63$), if a preschooler refused to complete the computer task measuring inhibitory control ($n = 8$), and if neither parent had completed the questionnaire about preschoolers' externalizing behavior ($n = 29$), resulting in a final sample of 285 families. If a questionnaire was completed by one of the parents, these scores were used as the best estimate of the missing parent's scores. The distribution of sibling gender constellations was as follows: 74 boy-boy (26%), 61 girl-girl (21%), 71 boy-girl (25%), and 79 girl-boy (28%). Analyses with and without families with younger siblings who did not show noncompliance yielded similar results.

At the time of the first visit preschoolers were on average 4.0 years old ($SD = 0.3$) and their younger siblings were 2.0 years old ($SD = 0.0$). Mothers were aged between 26 and 46 years ($M = 35.0$, $SD = 3.8$) and fathers were between 26 and 53 years of age ($M = 37.8$, $SD = 4.8$). Most participating parents were married or had a registered agreement (94%), and the

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remaining 5% lived together without any kind of registered agreement. At the time of Wave 2 a third child had been born in 23 (8%) of the families and parents of two families were divorced (1%). With regard to educational level, most of the mothers (82%) and fathers (79%) had a high educational level (academic or higher vocational schooling).

Procedure

Each family was visited twice within a period of approximately two weeks, once for observation of the mother and the two children and once for observation of the father and the two children. The order of father and mother visits was counterbalanced. After the two visits families received a gift of 30 Euros 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 preschoolers 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 the study was provided by the Research Ethics Committee of [BLINDED FOR REVIEW].

Measures

Sibling discipline. Sibling discipline was measured in a 4-minute disciplinary *don't* context (Kochanska et al., 2001). The parent was asked to put a set of attractive toys on the floor in front of both children, and to make sure the children did not play with or touch the toys. After 2 minutes, both siblings were allowed to play for another 2 minutes only with an unattractive stuffed animal. Sibling discipline was coded every time preschoolers initiated a task-related response towards their younger siblings. Responses that occurred within a 2-second interval were considered one response. Two types of responses were coded as sibling discipline: verbal discipline (e.g., “no”, “you’re not allowed to touch them yet”) and physical interference (e.g., holding the child or moving the toys out of reach). Sibling discipline was

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not coded when the parent instructed the preschooler to respond to the toddler's behavior. The two disciplinary episodes within the same family, one with mother and one with father present, were coded by different coders to guarantee independence among ratings. Intercoder reliabilities were based on 10% of the participating families ($n = 30$). The mean intraclass correlation (single rater, absolute agreement) for all 15 pairs of the six independent coders was .83 (range .78 to .90) for verbal discipline and .81 (range .71 to .94) for physical discipline. Verbal and physical sibling discipline were highly correlated, mother visit: $r(284) = .56, p < .01$; father visit: $r(284) = .52, p < .01$ and showed no mean-level differences ($ps > .30$), so we combined them in a sum score. Moreover, sibling discipline was correlated between the two visits, $r(284) = .21, p < .01$, and showed no mean-level differences between visits ($p = .70$). We therefore computed a combined mean score for the two scales.

Both siblings' noncompliance. Compliance was measured in the same disciplinary *don't* context (see sibling discipline), which has been used in several previous studies of compliance in toddlers and preschoolers (e.g., Kok et al., 2013; Van der Mark, Bakermans-Kranenburg, & Van IJzendoorn, 2002). Noncompliance was coded with an event-based coding system. An event was coded when the child reached towards or touched the prohibited toys after the parent explained that the child was not allowed to touch them. If a child reached or touched the toys more than once within 10 seconds this was coded as one event of noncompliance. Noncompliance scores could range between 0 and a maximum of 24 events (i.e. 240 seconds/ 10 seconds). The two observations of compliance for each child within the same family (once with the mother present, once with the father present) were coded by different coders to guarantee independence of the ratings. Intercoder reliabilities were based on 10% of the participating families ($n = 30$). Interobserver reliability was good with all intraclass correlations (single rater, absolute agreement) of all 465 pairs of the 31 independent coders above .80. To prevent coder drift regular meetings with coders were organized in

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which film clips were reviewed together and situations that raised questions during coding were discussed.

We also coded parental discipline (i.e., active verbal or physical interference) in response to noncompliance of both children. Neither parental discipline towards the children (discipline towards preschooler mother visit: $r(284) = .04, p = .54$; father visit: $r(284) = .11, p = .10$; discipline towards toddler mother visit: $r(284) = -.00, p = .97$; father visit: $r(284) = .10, p = .09$) nor compliance of the preschooler (mother visit: $r(284) = .04, p = .48$; father visit: $r(284) = -.05, p = .38$) were related to sibling discipline to the younger toddler. We therefore did not include parental discipline and noncompliance of the older sibling as covariates in the analyses.

Behavioral characteristics oldest child. We assessed preschoolers' inhibitory control and externalizing behaviors. To measure preschoolers' inhibitory control an adapted version of the Cat-Mouse task (Simpson & Riggs, 2006), a computerized Go/NoGo task for preschoolers was administered during either the first or the second visit (counterbalanced). The experimenter explained that the child had to catch all the mice that appeared on the screen (Go stimuli) by pressing a red button. The child was told not to catch the cats that appeared on the screen (NoGo stimuli). The task consisted of a practice session, in which five mice and five cats were presented (in alternating order), and a test session, in which 30 mice and 10 cats were displayed in random order. Only during the practice session was the child given feedback. After the practice session the experimenter repeated the instructions for the child. Commission errors (responses to NoGo stimuli) were used as a measure for a lack of inhibitory control (Groot, De Sonnevile, Stins, & Boomsma, 2004). To generate a measure for inhibitory control we computed the sum score of correct rejections on the NoGo stimuli.

The Child Behavior Checklist for preschoolers (CBCL/1½-5; Achenbach & Rescorla, 2000) was used to assess externalizing behaviors of the preschoolers. Both fathers and

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mothers indicated whether they observed any of the 36 behavior problems in the last two months on a three-point scale. The internal consistencies (Cronbach's alpha) were .92 for both parents. Because fathers' and mothers' scores were significantly correlated ($r(284) = .46, p < .01$), and mean scores were not significantly different ($p = .16$), combined mean scores were computed.

Data-Analysis

Data inspection was conducted according to the procedures described by Tabachnick and Fidell (2012). Sibling discipline and preschoolers' inhibitory control were positively skewed, and we used inverse transformation (sibling discipline) and Log10 transformation (inhibitory control) to approach normal distributions of these variables. All other measures were normally distributed. After these two variables were transformed the data did not show any outliers, defined as values more than 3.29 *SD* below or above the mean. To assess the relation between sibling discipline and child characteristics we conducted a hierarchical regression analysis. In the first step main effects of characteristics of both siblings were entered: preschoolers' age, gender, inhibitory control, and externalizing behavior, and younger siblings' gender and noncompliance. In the second step sibling gender composition and toddlers' noncompliance were examined as possible moderators by including three two-way interactions: (1) between preschoolers' gender and siblings' gender, (2) between toddlers' noncompliance and preschoolers' inhibitory control and (3) between toddlers' noncompliance and preschoolers' externalizing behavior. Variables were centered before the computation of interaction terms.

Results

Preschoolers disciplined their younger siblings in 171 families (60%). Sibling discipline was positively related to preschoolers' own externalizing behavior (Table 1). Girls ($M = 0.93, SD = 1.24$) disciplined their younger siblings more often than boys did ($M = 0.67,$

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$SD = 1.29$), $t(283) = -2.74$, $p < .01$, $d = 0.21$. Moreover, sibling discipline was related to sibling gender combination, $F(3, 284) = 3.36$, $p < .05$. Post-hoc Bonferroni tests showed that families with an older sister and a younger brother differed from families with an older brother and a younger sister, indicating that preschool girls disciplined their younger brothers ($M = 1.03$, $SD = 1.33$) more often than preschool boys disciplined their younger sisters ($M = 0.61$, $SD = 1.26$). For families with two brothers or two sisters no differences in sibling discipline with other sibling gender combinations were found.

To investigate multivariate relations between child characteristics and sibling discipline, we conducted a hierarchical regression analysis. We found a main effect of preschoolers' gender, indicating that girls disciplined their younger siblings more often than boys (Table 2). Moreover, the interaction between preschoolers' externalizing behavior and younger siblings' noncompliance was significant. Simple slopes analyses (Aiken & West, 1991) revealed a significant positive relation between younger siblings' noncompliance and preschoolers' sibling discipline only for preschoolers who showed relatively high levels of externalizing behavior, while no significant relation between younger siblings' noncompliance and preschoolers' sibling discipline was found for preschoolers who showed low levels of externalizing behavior (Figure 1). The main effects of gender of both siblings, younger siblings' noncompliance, preschoolers' age, inhibitory control, and externalizing behavior were not significant (Table 2), nor were the interactions between preschooler's gender and younger sibling's gender and between preschooler's inhibitory control and younger sibling's noncompliance significant.

Discussion

Our results showed that within a parenting discipline situation with two children, over half of the preschoolers disciplined their younger siblings. Girls disciplined more often than boys. Further, preschoolers were more likely to discipline their younger sibling if the latter

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showed higher levels of noncompliance, but this was only true for preschoolers with high levels of externalizing behavior. Preschoolers' sibling discipline was not related to their levels of inhibitory control or the gender of their younger sibling.

Over half of the preschoolers displayed discipline towards their younger siblings during parental limit setting, which is in line with key developmental changes during that period. Preschoolers have internalized parental rules, understand the consequences of rule transgression, and from the age of 3 years onwards children have been found to interfere when others violate rules (Kochanska & Aksan, 2006; Vaish, et al., 2011). Furthermore, the occurrence of preschoolers' sibling discipline towards a younger sibling points to the different roles siblings can adopt during daily family interactions. Given preschoolers' developmental advantages compared to their younger siblings, they can be more dominant, take the lead, and try to control their toddler brothers' and sisters' behavior during a limit-setting situation (Howe et al., 2011). Our finding that sibling discipline is common highlights the importance of investigating this type of behavior in future studies and of exploring how older siblings may influence the development of behavioral control in younger siblings.

Preschoolers with high levels of externalizing behavior disciplined their younger siblings more often when these siblings were more frequently noncompliant, whereas preschoolers' inhibitory control was not related to sibling discipline. Preschoolers with more externalizing behavior may experience great difficulty to restrain their behavior (Kochanska & Aksan, 2006) and as a result may be more inclined to respond to the noncompliance of their younger brothers and sisters, in particular when these younger siblings show more frequent noncompliant behavior. The hypothesis that more discipline may be related to higher levels of older sibling's inhibitory control can, when replicated, be rejected.

Sibling discipline is thus most frequent in sibling dyads in which both children show less behavioral control, indicated by high levels of noncompliance in the younger sibling and

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higher levels of externalizing behavior of the older sibling. A lack of behavioral control in both siblings is related to more conflictual relations and more competition between siblings (Brody, 1998; Howe et al., 2011). Competition between siblings during parental limit setting may arise when parents are more lenient towards the younger sibling than towards the older child who might then experience jealousy towards their younger sibling who is apparently allowed to behave in a way that they themselves are not (Volling et al, 2010). In addition, preschoolers' attempts to prevent their younger sibling from touching the forbidden toys could also be driven by preschoolers' desire to have the toys for themselves. Given that property conflicts are the most common disputes between siblings during early childhood, siblings will have considerable experience with protecting their property or desired objects from their younger siblings especially when both siblings have lower levels of behavioral control (Brody, 1998; Ross, 1996). The interaction effect of younger siblings' noncompliance and preschoolers externalizing behavior on preschoolers' sibling discipline underscores the combined influence of child characteristics and sibling influences on child behavior during sibling interactions. The lack of a relation with inhibitory control in combination with the relation with more externalizing behavior suggest that to discipline a younger sibling response activation may be more relevant than response inhibition. Given these results one might speculate that the motivation to discipline a younger sibling is perhaps not the moral urge to prevent transgressions, but might be more related to power assertion of the older sibling.

Girls disciplined their younger siblings more often than boys. This is in line with results of previous findings that girls show more teaching towards younger siblings than boys (Brody et al., 1985; Cicirelli, 1976). Similar to teaching, sibling discipline can be seen as prosocial behavior which may be aimed at helping the younger siblings to complete the task. The difference in behavior between boys and girls may arise from gender-differentiated parenting, with parents stimulating prosocial behavior more often in girls than in boys

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(Hastings, McShane, Parker, & Ladha, 2007).

Sibling discipline was not related to the gender of the younger sibling. Although bivariate analyses suggested differences between older sister-younger brother and older brother-younger sister dyads, the multivariate regression analysis showed no effect of gender of the younger sibling or sibling gender combination, indicating that other variables related to gender, such as younger siblings' noncompliance, were responsible for the bivariate gender effects. Previous observations concerning children's teaching and comforting of their younger siblings during structured tasks also did not show effects of younger siblings' gender (Garner et al., 1994; Howe & Recchia, 2009). However, results of previous studies that observed teaching and nurturing behaviors between siblings are mixed and there are also several studies that did observe gender differences (e.g., Cicirelli, 1976; Kier & Lewis, 1998; Klein & Zarur, 2002).

This study is the first to investigate discipline between siblings in the context of parental limit setting. Interactions between siblings are rarely investigated as potential sources of socialization, although they are central in the lives of young children and may be as important as parent-child interactions in influencing child social development. Despite the obvious strengths of this study, such as the large number of observations, there are also some limitations. First, we did not take the responses of the parents or the younger siblings to the older siblings' behavior into account. These responses might influence the behavior of the older sibling, and should be included in further research on sibling discipline. However, the current study demonstrates that individual differences in sibling discipline can, at least partly, be explained by preschooler characteristics even without controlling for parent and sibling behavior in the discipline setting. A second limitation is the predominance of high-educated parents in our sample, which may influence the generalizability of our results. Since early development of social behaviors may differ by social status and parental educational

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background (e.g., Linver, Brooks-Gunn, & Kohen, 2002) the relation between child characteristics and sibling discipline needs to be studied further in more diverse samples. Finally, we coded any verbal or physical interference with siblings' noncompliant behavior as discipline. The intention of the preschoolers could not be taken into account, and therefore the expression of interference might in itself be a form of externalizing behavior. Since the low bivariate correlation between externalizing behavior and sibling discipline suggests that these are only partly overlapping constructs, further research may explicitly focus on investigating possible motivations of children to interfere with the younger sibling's noncompliant behaviors to improve our understanding of intentions behind sibling discipline. For example, comparing child discipline behaviors in settings in which the type of rule violation of a younger sibling varies in the likelihood of eliciting jealousy or cooperation with a parent, and investigating the relation between moral development and sibling discipline could shed light on motivational factors underlying sibling discipline. Furthermore, classifying the actual disciplinary behaviors of the older sibling (e.g. distinguishing harsh physical discipline from gentle guidance), may reveal more information on the relation between behavioral regulation and sibling discipline.

This is the first study on sibling interactions in a family discipline context. Given that parental limit setting is very common in young children's daily lives and provides an important context for the development of self-regulation, our findings may further our understanding of family processes that foster this aspect of children's development. Sibling discipline was observed in over half of the families, which indicates that preschoolers play an active role in the socialization of their younger siblings in parental limit-setting situations. And our results highlight that behavioral regulation of both siblings may shape socializing behaviors of older brothers and sisters.

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References

- Alink, L.R.A., Mesman, J., Van Zeijl, J., Stolk, M.N., Juffer, F., Koot, H.M., Bakermans-Kranenburg, M.J., & Van IJzendoorn, M.H. (2006). The early childhood aggression curve: Development of physical aggression in 10- to 50-month-old children. *Child Development*, 77, 954-966. doi:10.1111/j.1467-8624.2006.00912.x
- Azmitia, M., & Hesser, J. (1993). Why siblings are important agents of cognitive development: A comparison of siblings and peers. *Child Development*, 64, 430-444. doi:10.1111/1467-8624.ep9306035471
- Brody, G. H. (1998). Sibling relationship quality: Its causes and consequences. *Annual review of psychology*, 49, 1-24. doi:10.1146/annurev.psych.49.1.1
- Brody, G. H., Stoneman, Z., MacKinnon, C. E., & MacKinnon, R. (1985). Role relationships and behavior between preschool-aged and school-aged sibling pairs. *Developmental Psychology*, 21, 124-129. doi:10.1037/0012-1649.21.1.124
- Cicirelli, V. G. (1976). Mother-child and sibling-sibling interactions on a problem-solving task. *Child Development*, 47, 588-596. doi:10.2307/1128172
- Dunn, J., Deater-Deckard, K., & Pickering, K. (1999). Siblings, parents, and partners: Family relationships within a longitudinal community study. *Journal of Child Psychology and Psychiatry*, 40, 1025-1037. doi:10.1111/1469-7610.00521
- Forman, D. R., Aksan, N., & Kochanska, G. (2004). Toddlers' responsive imitation predicts preschool-age conscience. *Psychological Science*, 15, 699-704. doi:10.1111/j.0956-7976.2004.00743.x
- Garner, P. W., Jones, D. C., & Palmer, D. J. (1994). Social cognitive correlates of preschool children's sibling caregiving behavior. *Developmental Psychology*, 30, 905-911. doi:10.1037/0012-1649.30.6.905
- Groot, A. S., De Sonnevile, L. M. J., Stins, J. F., & Boomsma, D. I. (2004). Familial

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influences on sustained attention and inhibition in preschoolers. *Journal of Child Psychology and Psychiatry*, 45, 306-314. doi:10.1111/j.1469-7610.2004.00222.x

Hastings, P. D., McShane, K. E., Parker, R., & Ladha, F. (2007). Ready to make nice: parental socialization of young sons' and daughters' prosocial behaviors with peers. *The Journal of Genetic Psychology: Research and Theory on Human Development*, 168, 177-200. doi:10.3200/GNTP.168.2.177-200

Howe, N., & Recchia, H. (2009). Individual differences in sibling teaching in early and middle childhood. *Early Education & Development*, 20, 174-197. doi:10.1080/10409280802206627

Howe, N., Recchia, H., Della Porta, S., & Funamoto, A. (2012). "The driver doesn't sit, he stands up like the Flintstones!": Sibling teaching during teacher-directed and self-guided tasks. *Journal of Cognition and Development*, 13, 208-231. doi:10.1080/15248372.2011.577703

Howe, N., Rinaldi, C. M., Jennings, M., & Petrakos, H., (2002). "No! The lambs can stay out because they got cozies": Constructive and destructive sibling conflict, pretend play, and social understanding. *Child Development*, 73, 1460-1473. doi:10.1111/1467-8624.00483

Howe, N., Ross, H., & Recchia, H. (2011). Sibling relations in early childhood . In C. Hart & P. K. Smith (Eds.), *Wiley-Blackwell handbook of childhood social development* (pp. 356 – 372). New York , NY : Wiley

Kier, C., & Lewis, C. (1998). Preschool sibling interaction in separated and married families: Are same-sex pairs or older sisters more sociable? *Journal of Child Psychology and Psychiatry*, 39, 191–201. doi:10.1111/1469-7610.00313

Klein, P. S. & Zarur, S. (2002). Mediation in a sibling context: The relations of older siblings' mediating behaviour and younger siblings' task performance. *Infant and Child Development*, 11, 321–333. doi:10.1002/icd.261

SIBLING DISCIPLINE

- 1
- 2
- 3 Kochanska, G. (1993). Toward a synthesis of parental socialization and child temperament in
- 4
- 5 early development of conscience. *Child Development*, 64, 325-347. doi:10.1111/j.1467-
- 6
- 7 8624.1993.tb02913.x
- 8
- 9 Kochanska, G., & Aksan, N. (2006). Children's conscience and self-regulation. *Journal of*
- 10
- 11 *Personality*, 74, 1587-1618. doi:10.1111/j.1467-6494.2006.00421.x
- 12
- 13 Kochanska, G., Coy, K. C., & Murray, K. T. (2001). The development of self-regulation in
- 14
- 15 the first four years of life. *Child Development*, 72, 1091-1111. doi:10.1111/1467-
- 16
- 17 8624.00336
- 18
- 19 Kochanska, G., Murray, K., Jacques, T. Y., Koenig, A. L., & Vandegeest, K. A. (1996).
- 20
- 21 Inhibitory control in young children and its role in emerging internalization. *Child*
- 22
- 23 *Development*, 67, 490-507. doi:10.1111/j.1467-8624.1996.tb01747.x
- 24
- 25 Kok, R., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., Velders, F. P., Linting, M.,
- 26
- 27 Jaddoe, V. W., ... & Tiemeier, H. (2013). The role of maternal stress during pregnancy,
- 28
- 29 maternal discipline, and child COMT Val158Met genotype in the development of
- 30
- 31 compliance. *Developmental Psychobiology*, 55, 451-464. Doi: 10.1002/dev.21049
- 32
- 33 Linver, M. R., Brooks-Gunn, J., & Kohen, D. E. (2002). Family processes as pathways from
- 34
- 35 income to children's development. *Developmental Psychology*, 38, 719-734.
- 36
- 37 doi:10.1037//0012-1649.38.5.719.
- 38
- 39 Maccoby, E. E. (1998). *The two sexes: Growing up apart, coming together*. London: Harvard
- 40
- 41 University Press.
- 42
- 43 Morrongiello, B., Schmidt, S., & Schell, S.L. (2010). Sibling supervision and young
- 44
- 45 children's risk of injury: A comparison of mothers' and older siblings' reactions to risk
- 46
- 47 taking by a younger child in the family. *Social Science & Medicine*, 71, 958-965.
- 48
- 49 doi:10.1016/j.socscimed.2010.05.047
- 50
- 51 Rhoades, L. B., Greenberg, M. T., & Domitrovich, C. E. (2009). The contribution of
- 52
- 53
- 54
- 55
- 56
- 57
- 58
- 59
- 60

SIBLING DISCIPLINE

inhibitory control to preschoolers' social-emotional competence. *Journal of Applied Developmental Psychology*, 30, 310–320. doi:10.1016/j.appdev.2008.12.012

Ross, H. S. (1996). Negotiating principles of entitlement in sibling property disputes. *Developmental Psychology*, 32, 90-101. doi:10.1037/0012-1649.32.1.90

Simpson, A., & Riggs, K. J. (2006). Conditions under which children experience inhibitory difficulty with a “button-press” go/no-go task. *Journal of Experimental Child Psychology*, 94, 18-26. doi:10.1016/j.jecp.2005.10.003

Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th ed.). New York: Harper Collins.

Vaish, A., Missana, M., & Tomasello, M. (2011). Three-year-old children intervene in third-party moral transgressions. *British Journal of Developmental Psychology*, 29, 124–130. doi:10.1348/026151010X532888

Van der Mark, I., Bakermans-Kranenburg, M. J., & Van IJzendoorn, M.H. (2002). The role of parenting, attachment, and temperamental fearfulness in the prediction of compliance in toddler girls. *British Journal of Developmental Psychology*, 20, 361- 378. Doi:10.1348/026151002320620299

Volling, B. L., Kennedy, D. E., & Jackey, L. M. (2010). The development of sibling jealousy. In S.L. Hart & M. Legerstee (Eds.), *Handbook of jealousy: Theory, research, and multidisciplinary approaches* (pp. 387-417). Malden, MA: Blackwell Publishers.

Volling, B. L. (2012). Family transitions following the birth of a sibling: An empirical review of changes in the firstborn's adjustment. *Psychological Bulletin*, 138, 497–528. doi:10.1037/a0026921

Williams, B. R., Ponesse, J. S., Schachar, R. J., Logan, G. D., & Tannock, R. (1999). Development of inhibitory control across the life span. *Developmental Psychology*, 35, 205-213. doi:10.1037/0012-1649.35.1.205

SIBLING DISCIPLINE

Table 1.

Summary of Means, Standard Deviations and Correlations for All Variables

	1	2	3	4	<i>M</i>	<i>SD</i>
1. Sibling discipline					0.80	1.27
2. Age preschooler	-.00				4.03	0.30
3. Siblings' noncompliance	.06	-.01			7.50	4.42
4. Inhibitory control preschooler	-.02	-.08	.01		8.13	2.09
5. Externalizing behavior preschooler	.12*	.03	-.04	-.16**	0.54	0.24

* $p < .05$, ** $p < .01$

Note. To facilitate interpretation, the non-transformed scores are presented.

SIBLING DISCIPLINE

Table 2.

Child Characteristics in Relation to Sibling Discipline

	Sibling discipline	
	β	R^2
Step 1		.05
Age	.04	
Gender	.21**	
Siblings' gender	-.08	
Siblings' noncompliance	.09	
Inhibitory control	-.07	
Externalizing behavior	.12*	
Step 2		.07
Gender * Siblings' gender	-.05	
Inhibitory control * Siblings' noncompliance	-.01	
Externalizing behavior * Siblings' noncompliance	.14*	

* $p < .05$, ** $p < .01$

Note: Betas are derived from the final model.

SIBLING DISCIPLINE

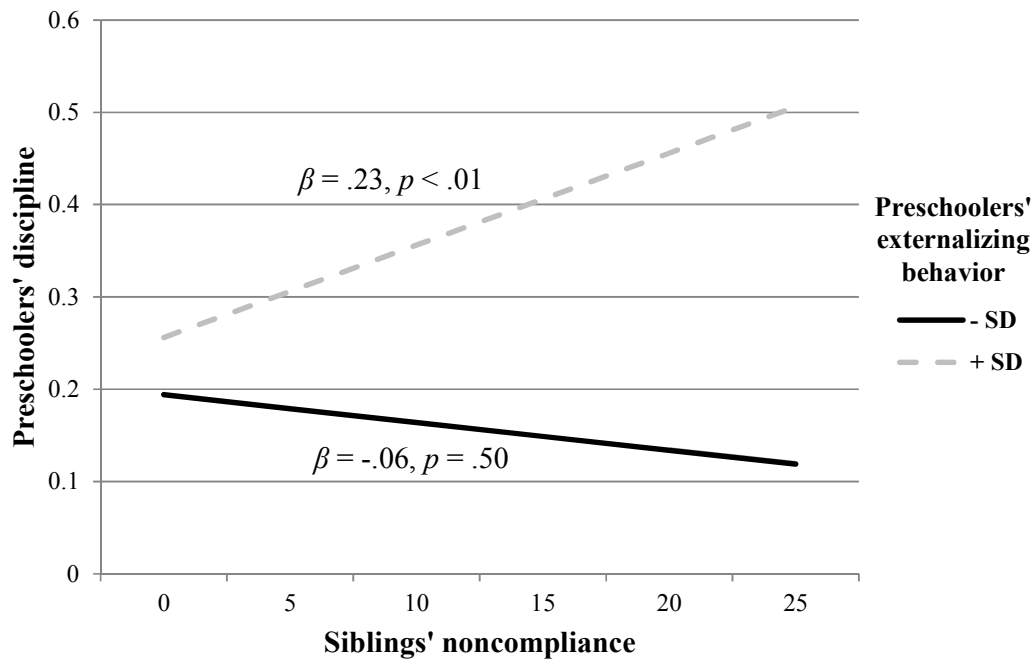


Figure 1.

Association between preschoolers' discipline and siblings' noncompliance by preschoolers' externalizing behavior.