

Universiteit Utrecht
Master Kinder- en Jeugdpsychologie

THESIS

Associations between responsive and permissive parenting behavior and empathic behavior in children: The moderating role of sensory processing sensitivity.

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24-06-2013

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Abstract

The aim of the present study was to examine the contribution of permissive and responsive parenting behavior to empathic behavior in children and to investigate the moderating effect of sensory processing sensitivity on these relationships. A total of 280 Dutch children (51.2% boys, $M = 4.8$ years) participated in this study. Data were gathered using web-based questionnaires filled in by the primary caregiver, to assess child temperament, parenting and child adjustment. We expected that permissive parenting behavior would predict lower levels of empathy, especially among children high on sensory processing sensitivity. However, results did not support these hypotheses: No such associations were found. We also expected that responsive parenting behavior would predict higher levels of empathy, especially among children high on sensory processing sensitivity. Results indicated that as parents showed more responsive parenting behavior, children indeed demonstrated more empathic behavior. Further, contrary to expectations based on the differential susceptibility hypothesis, responsive parenting behavior was most strongly associated with empathic behavior among children low on sensory processing sensitivity. According to this study, the lower the score on sensory processing sensitivity, the stronger the positive relationship between responsive parenting behavior and empathic behavior. Results do not correspond with the differential susceptibility hypothesis and raise the question whether being low or high on sensory processing sensitivity indicates susceptibility. More research is needed in the future to gain a wider and more valid view regarding this subject.

Keywords: Responsive parenting behavior, permissive parenting behavior, empathic behavior, sensory processing sensitivity

Associations between responsive and permissive parenting behavior and empathic behavior in children: The moderating role of sensory processing sensitivity.

For children, it is important to develop empathy early in life. Empathy provides a basis for several forms of social behavior we need to function well in society. For example, theorists such as Eisenberg, have assumed that prosocial and moral behaviors arise from the ability to respond in an empathic way (Eisenberg, Fabes, & Sprinrad, 2006 as cited in Kanat-Maymon & Avi Assor, 2010). Prosocial behavior is important for positive connections between social groups (Hastings, Rubin, & DeRose, 2005) and empathy is central in the emotional bond between people (Kiang, Moreno, & Robinson, 2004). In addition, deficits in empathy are recognized as common in children with disruptive behavior disorders (American Psychiatric Association, 2001), and such disorders are related to negative long term outcomes such as crime (Caspi, 2000), unemployment (Caspi, Wright, Moffitt, & Silva, 1998), antisocial behavior (Lahey, Waldman, & McBurnett, 1999), mental health problems and substance use (Fergusson, Horwood, & Ridder, 2005). In short, empathy is linked with positive developmental outcomes and a lack of empathy is associated with difficulties to function well in society. This implies the importance and necessity of acquiring more insight in aspects that contribute to empathic behavior and factors that undermine the development of empathic behavior. In this study, the interplay between parenting and sensory processing sensitivity and how they can predict empathy will be examined.

In this study, empathy is defined as the expression of care and concern for others in distress and the capacity to respond emotionally to another persons' distress, with the goal of relieving that distress (Batson, Duncan, Ackerman, Buckley, & Birch, 1981; Eisenberg, 2000). The ability to recognize the distress of others and to react in an empathic way, starts to develop early in life and is already seen up from the age of two and increases in the years after (Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992). This study focuses on kindergartners, as empathy starts being an important part of their lives: Due to changes in their environment (going to school or after school care) they have frequent contact with peers.

Parenting and empathy

There is much evidence that parenting is a good predictor of children's social and emotional adjustment, including empathy (Maccoby, 2000). The quality of care a child receives from parents is one of the most important environmental influences on the development of empathic behavior in children (Zahn-Waxler & Radke-Yarrow, 1990). In this study we will focus on two different parenting behaviors, permissive and responsive

parenting, which both could be associated with empathy. Permissive parenting behavior includes warm and accepting child-rearing, but parents are less involved and they exert little disciplinary control, whereby children are allowed to make many decisions for themselves even at an age when they are not yet capable of doing so (Berk, 2009). Evidence demonstrates that a positive relationship exists between permissive parenting and antisocial behavior (Knutson, DeGarmo, & Reid, 2004; Thornberry, Freeman-Gallant, Lizotte, Krohn, & Smith, 2003; Ehrensaft et al., 2003). Specifically, permissive or disengaged parenting behaviors are risk factors for the development of antisocial behavior in children and adolescents (Beck & Shaw, 2005; Frick, 2006). Such antisocial behavior is often associated with aggressive behavior and a weakened capacity of aggressive children to take another's perspective, what lessens their capacity for empathy and finally results in less concern for others (Hastings, Zahn-Waxler, Usher, Robinson, & Bridges, 2000; Strayer & Roberts, 2004). According to Schaffer, Clark and Jeglic (2009), lax parenting has a direct effect on child behavior through its effect on hindering the development of care and concern about others in distress. In addition, it is known that a history of minimal responses from parents to negative emotions, promotes personal distress and self-focus during conflicts which in turn undermine feelings of empathy (Eisenberg, Cumberland, & Spinrad, 1998).

In contrast, it is known that sensitive and responsive parenting behavior contributes to empathic behavior among children (Verhulst, 2005). Responsive parenting involves high acceptance and involvement. Responsive parents are warm, sensitive and attentive to their children's needs. They comfort their children when they are upset and create a safe and supportive environment in which children can express negative emotions. They place a premium on communication, encouraging the child to express thoughts, feelings and desires (Berk, 2009). In this way, understanding the emotions of others is encouraged and children learn to respond in an empathic and responsive way (Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002). Also, the willingness of responsive parents to accommodate to the child's perspective increases the likelihood that the child is able to take someone else's perspective (Kuczynsky & Lollis, 2002; Russell, Mize, & Bissaker, 2004 as cited in Berk, 2009). In addition, responsive parents provide models of caring concern what perhaps makes their children advanced in emotional and social understanding and self-regulation (Berk, 2009). In other words, whereas permissive parenting is linked to antisocial and less empathic behavior, responsive parenting is linked to empathy in children.

Temperament

Parenting is not the only predictor of empathic behavior in children. Besides parenting, temperament is another factor to consider in research on behavioral child outcomes, such as empathy, and it can serve as a moderator in the relation between parenting and child adjustment (Hastings et al., 2005; Van der Mark, van IJzendoorn, & Bakermans-Kranenburg, 2002; Rothbart, 2007). Temperament is defined as biologically based individual differences in responsiveness to changes in the internal and external environment (reactivity) and self-regulation. It is influenced over time by heredity, maturation and experience. In addition, temperament is relatively stable over time and consistent across situations (Rothbart & Bates, 2006). Sensory processing sensitivity is the temperament aspect we will focus on in this study as a potential moderator on the relation between responsive and permissive parenting behavior and empathic behavior in children.

Sensory processing sensitivity is a relatively stable characteristic of individuals across the lifespan. Although very little is known about this subject, it even is a relatively common characteristic: About 20% of individuals are characterized as being high on sensory processing sensitivity (Aron & Aron, 1997). Aron and Aron (1997) even suggest that sensory processing sensitivity may be the underlying basis of the differences in strategies people use when faced with novel stimulation in life: Exploration or vigilance. It therefore constitutes an interesting temperament trait for research. Defined by Aron (1996; 1999 as cited in Aron, Aron, & Davies, 2005; Aron & Aron, 1997), sensory processing sensitivity is described as an individual difference characteristic. Individuals high on sensory processing sensitivity are particularly sensitive to subtle stimuli, easily over stimulated and prone to check a novel situation thoroughly. They tend to process information from their environment on a deeper and more complex level than other people, which affects the way they plan, think and learn. Aron and Aron (1997) suggest that children high on sensory processing sensitivity process all experiences more thoroughly, leading these individuals to be more affected by their childhood environment. Aron and colleagues (2005) found initial evidence for this assumption: It was found that a problematic child rearing history among children high on sensory processing sensitivity, predicted shyness and negative affectivity in adulthood, whereas no such association was found among children low on sensory processing sensitivity. These results concerning negative child rearing styles and negative child adjustment, directly raise the question whether children high on sensory processing sensitivity are also more affected in positive ways.

Differential susceptibility hypothesis

According to the differential susceptibility hypothesis, vulnerable children are most adversely affected by many kind of stressors like negative environmental influences. These same children should also be more disproportionately susceptible to the beneficial effects of environmental support and enrichment. This differential susceptibility hypothesis is an alternative view to the more traditional view on children's different reactions to rearing experiences, the diathesis stress model, whereby susceptible children are described as disproportionately influenced by negative experiences (Belsky & Pluess, 2009). In accordance with the differential susceptibility hypotheses, more susceptible children will benefit disproportionately from supportive environments, although they are also affected by harsh environments: They are affected in a 'for better and for worse' manner (Belsky, Bakermans-Kranenburg, Van IJzendoorn, 2007). Specifically, the same children that are most sensitive to harsh parenting are expected to benefit most from supportive parenting (Belsky, 1997; Belsky et al., 2007). Differences in susceptibility can have numerous origins, for example differences in genes, physiological differences or temperamental differences (Belsky & Pluess, 2009). The idea that children should vary in their susceptibility to rearing has its roots in the evolutionary biology, whereby the dispersion of genes in future generations is the ultimate goal of all living creatures. Because of future uncertainty and not knowing what child rearing practices would be most effective for inclusive fitness, natural selection would have produced parents to bear children varying in susceptibility to rearing (Belsky & Pluess, 2009).

However, little research has been done on this topic with diversity in sensory processing sensitivity as potential susceptibility factor, despite the fact that it is a relatively common and stable characteristic of individuals to be high on sensory processing sensitivity (Aron & Aron, 1997). This is surprising, considering the definition of being high on sensory processing sensitivity. Moreover, in addition to knowing the influence of a negative child rearing style among children high on sensory processing sensitivity, it is interesting to examine the impact of a positive child rearing style, to fully understand these children and their needs. The present study contributes to bridging this gap. Furthermore, this study is of social interest. Aron and Aron (1997) acknowledge that it is difficult to raise children high on sensory processing sensitivity anyway because they perceive much that is distressing, which goes unnoticed or is not reflected on by other children. Knowledge about how to approach these children to facilitate empathic development seems even more important. This implies the importance of research on this subject: With more knowledge we might be able to make a difference in the way teachers and parents approach children high on sensory processing sensitivity so that they can be raised under optimal conditions.

Present study

To summarize, more susceptible children are thought to be more affected by their environment, both for better and for worse. That is why in the current study, the contribution of responsive parenting behavior and permissive parenting behavior to empathic behavior in children will be examined, with sensory processing sensitivity as potential moderator, reflecting susceptibility. We expect that responsive parenting behavior will predict higher levels of empathy, especially among children high on sensory processing sensitivity. It is also expected that permissive parenting behavior will predict lower levels of empathy, especially among children high on sensory processing sensitivity.

Method

Participants

Participants, children in kindergarten and their primary caretakers, were recruited via primary schools to participate in this study. Primary schools, 300 in total, were randomly approached and asked to distribute information about this study among their kindergartners and their caretakers. A total of 49 schools gave permission. Information about the study was spread among approximately 2800 parents with children attending these schools, and 274 families actively consented to participate in the study (9.8%). A total of 280 children (51.2% boys) participated in this study. The average age of the children was 4.8 years ($SD = 0.6$) and they were mainly Dutch natives (96.4%). The average age of the primary caregivers (90.4% mothers) was 37.8 years ($SD=4.7$) and they were also mainly Dutch natives (92.2%). Most of the primary caregivers finished higher education (HBO, University) (73.6%) and 75.1% of the families (information about wages is unknown in 17.4% of the cases) receive average or above modal wage (more than €30.000 annual household income). A total of 73 families (26%) were not included in the data analyses because of missing values. This group does not differ from those who are part of the analyses on age of the primary caregiver, $t(279) = -1.70$, $p = .09$, or education, $\chi^2(1) = 2.65$, $p = .10$. This group does differ however on gender ($\chi(2) = 10.24$, $p = .01$, $odds = .30$): Compared to mothers, fathers have more missing data. The group that is not included in the data analyses does not differ from those who are part of the analyses on age of the child, $t(279) = -0.16$, $p = .99$, or gender of the child, $\chi^2(1) = 3.04$, $p = .08$.

Procedure

This study is part of a longitudinal study, which includes observations, questionnaires and an experiment. Data used in this study were gathered from web-based questionnaires to assess child temperament, parenting and child adjustment. Demographic information was collected during the screening (T0) of the longitudinal study. During the first wave (T1),

parenting behavior, child outcomes and sensory processing sensitivity, were measured. After completing this questionnaire (T1), families received a small gift card to maintain a high response rate. Questionnaires filled in by the primary caregiver were used.

Measures

Sensory processing sensitivity. Sensory processing sensitivity was measured using the short, Dutch version of the Highly Sensitive Personality Scale (HSP scale) (M. Pluess, personal communication, 2012). The internal consistency of the original HSP scale (27 items) is high (Cronbach's alphas ranging from .87 to .85) (Aron & Aron, 1997; Aron, Aron, & Jagiellowisz, 2012), the reliability of the scale is reported as good and the convergent, content and discriminant validity appears to be adequate for research (Aron & Aron, 1997). In this study, a satisfactory internal consistency (Cronbach's alpha = .78) was found. This parent questionnaire consists of 12 items rated on a 7-point scale (1 = *not at all*, 7 = *extremely*). An example of an item is: 'My child notices small changes in the environment'.

Responsive Parenting. Responsive parenting behavior was measured using the subscale 'responsiveness' of the 'Nijmeegse Opvoedvragenlijst' (NOV, Gerris et al, 1993 as cited in Dekovic, Janssens, & Van As, 2003). The subscale measures parents attentiveness to the signals and state of mind of the child and the child's needs. The scale contains eight items, rated on a 6-point scale (1 = *totally disagree*, 6 = *totally agree*). An example item of this scale is: 'I know exactly what my child needs or wants'. This scale has a Cronbach's alpha of .87 for fathers and .85 for mothers (Dekovic et al., 2003). Engels, Dekovic and Meeus (2002) found a Cronbach's alpha of .94. In short, according to previous research, this scale has high internal consistency. This study confirms previous findings with a Cronbach's alpha of .83. No information about validity has been found in other research.

Permissive Parenting. Permissive parenting behavior was measured using the Dutch version of the subscale 'permissive' of the Parenting Practices Questionnaire (PPQ) (Robinson, Mandlco, Olsen, & Hart, 1995). The scale 'permissive' contains 15 items, including the following subjects: 'Not being consistent with punishment', 'ignoring misbehavior' and 'parenting uncertainty' (Schalénbourg, & Verschueren, 2003). In this study, 'ignoring misbehavior' was used. An item of this subscale includes: 'I allow my child to interrupt others'. This scale consists of four items, rated on a 5-point scale (1 = *never*, 5 = *always*). Cronbach's alphas ranging from .75 to .91 were found for the complete PPQ (Robinson et al., 1995). In this study a Cronbach's alpha of .51 was found for 'ignoring misbehavior'.

Empathy. Empathic behavior was measured using the Dutch version of the Infant-Toddler Social and Emotional Assessment (ITSEA, Briggs-Gowan & Carter, 1998; Visser, Smeekens, Riksen-Walraven, & Van Bakel, 2000). This parent questionnaire measures emotional and behavioral problems and competence of the child. Here, the subscale ‘empathy’, containing five items rated on a 3-point scale (0 = *rarely*, 2 = *often*), was used. Examples of items are: ‘Is worried or upset when other children cry’ or ‘talks about other people’s feelings’. Previous research indicates a high internal consistency of the ‘empathy’ subscale (Briggs-Gowan & Carter, 1998). In this study, a moderate internal consistency was found ($\alpha = .68$). Evidence is provided for strong validity for parent ratings on the ITSEA (Carter, Briggs-Gowan, Jones, & Little, 2003). Briggs-Gowan and Carter (2007) also found support for the reliability and validity of the ITSEA. However, conclusions about the validity must be tempered until adequate clinical samples are carefully assessed: Findings cannot yet address the clinical validity (Briggs-Gowan & Carter, 2007; Carter et al., 2003).

Data analyses

To answer the research questions, hierarchical regression analyses were used, with empathic behavior as dependent variable and sensory processing sensitivity, permissive parenting behavior and responsive parenting behavior as independent variables. The mean of all item scores, is called the scale score for every measured concept: The higher the score, the more characteristics. All variables were centered, to reduce multicollinearity in the regression analyses. Data were checked and the following assumptions have not been violated: Homoscedasticity, collinearity, linearity, normality, non-zero variance. No outliers were found in the sample.

The main effects of permissive- and responsive parenting behavior as well as sensory processing sensitivity on empathic behavior in children were entered in step 1. The interaction between responsive parenting behavior and sensory processing sensitivity and the interaction between permissive parenting behavior and sensory processing sensitivity were entered in step 2. By multiplying the centered parenting behaviors and sensory processing sensitivity, the interaction term was computed. In case of significant interaction effects ($\alpha = .05$), the relation between the predictor variable and the outcome variable is moderated by sensory processing sensitivity. By calculating simple slopes, a plotting of a significant two-way interaction can be facilitated.

Results

Preliminary analyses

Table 1 presents the correlation coefficients, means and standard deviations of the variables used in this study. In the current sample, the mean score on responsive parenting behavior is relatively high. A positive relation was found between responsive parenting behavior and empathic behavior in children: More responsive parents tended to have more empathic children. In addition, a negative relation was found between responsive parenting behavior and permissive parenting behavior: The more responsive parents were, the less permissive they were towards their children. No significant relation was found between sensory processing sensitivity and the parenting behaviors or between sensory processing sensitivity and empathic behavior. There neither was a significant relation between empathic behavior and permissive parenting behavior.

Table 1.

Correlation coefficients, means and standard deviations for Responsive behaviour, Permissive behaviour, SPS and empathic behaviour.

	1	2	3	<i>M</i>	<i>SD</i>
1.Responsive behavior	-			5.13	0.50
2.Permissive behavior	-.20**	-		1.73	0.41
3.SPS	.09	.10	-	4.26	0.80
4.Empathic behavior	.25**	-.05	.10	1.34	0.38

Note. SPS means sensory processing sensitivity

** $p < .01$

Primary analyses

Results of the hierarchical regression analyses are presented in Table 2. The three independent variables together (responsive and permissive parenting behavior and sensory processing sensitivity) account for 7% of the variation in empathic behavior. When the interaction terms are included in the model, this value increases to 9% of the variance in empathic behavior. However, this change is not significant ($\Delta R^2 = .02$, $p = .09$).

Based on earlier research, we predicted that permissive parenting behavior would predict lower levels of empathic behavior in children. This expectation was not supported, no main effect was found; $t(204) = -0.16$, $p = .88$, $\beta = -.01$. Moreover, we expected that the relation between permissive parenting behavior and empathic behavior in children would be stronger for children high on sensory processing sensitivity. This hypothesis was not

supported either, $t(202) = 0.23, p = .82, \beta = .02$. We also hypothesized that responsive parenting behavior would predict higher levels of empathic behavior in children. This expectation was supported, a significant main effect was found. As parents show more responsive parenting behavior, children show more empathic behavior; $t(204) = 3.54, p < .001, \beta = .25$. Also, we expected that this relation would be stronger for children high on sensory processing sensitivity. As expected, a moderation effect was found; $t(202) = -2.12, p = .04, \beta = -.15$. Figure 1 graphically represents the significant moderating effect.

Table 2.

Results of hierarchical regression analyses for the moderating effect of Sensory Processing Sensitivity on responsive and permissive parenting behaviour and empathic behavior.

Step no.	Variable	<i>t</i>	<i>p</i> value	<i>B</i> (<i>SE</i>)	β
Step 1	Responsive behavior	3.54	<.01	.19 (.05)	.25
	Permissive behavior	-0.16	.88	-.01 (.06)	-.01
	SPS	1.20	.23	.04 (.03)	.08
Step 2	Responsive behavior x SPS	-2.12	.04	-.14 (.07)	-.15
	Permissive behavior x SPS	0.23	.82	.02 (.08)	.02

Note. SPS means sensory processing sensitivity

Step 1: $R^2 = .07$; Step 2: $R^2 = .09$.

$\Delta R^2 = .02, p = .09$

These results, visually shown in figure 1, demonstrate that the lower the score on sensory processing sensitivity, the stronger the positive relationship between responsive parenting behavior and empathic behavior: As parents show more responsive parenting behavior, children demonstrate more empathic behavior. This is in contrast with the expectation: We expected that this relation would be stronger among children high on sensory processing sensitivity. In addition to plotting the moderating effect, a simple slope analyses was conducted. The simple slopes of the regression of responsive parenting behavior on empathic behavior in children were significant when sensory processing sensitivity was low ($t(202)=3.81, p < .01, \beta =.40$) or moderate ($t(202) = 3.38, p < .01, \beta = .25$). The simple slope was not significant at high levels of sensory processing sensitivity ($t(202) = 0.89, p = .40, \beta = .09$).

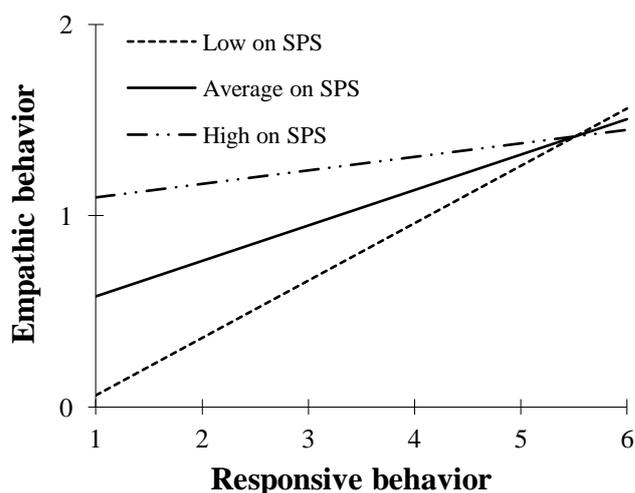


Figure 1. Relationship between responsive parenting behavior and empathic behavior in children for low, moderate and high levels of sensory processing sensitivity.

Discussion

The goal of the present study was to examine the contribution of permissive and responsive parenting behavior on empathic behavior in children and to investigate the moderating effect of sensory processing sensitivity on these relationships. Contrary to the expectations, results from the current study do not support the hypothesis that permissive parenting behavior would predict lower levels of empathic behavior in children. Also, we found no evidence that sensory processing sensitivity influences the relation between permissive parenting behavior and empathic behavior in children. However, as expected, the contribution of responsive parenting behavior to empathic behavior in children was consistent with those in other studies (Verhulst, 2005; Fabes et al., 2002). As parents show more responsive parenting behavior, children demonstrate more empathic behavior. In addition, the study results revealed that sensory processing sensitivity can exert a moderating effect. Specifically, the lower the score on sensory processing sensitivity, the stronger the positive relation between responsive parenting behavior and empathic behavior: A significant relation was found among children with a low and moderate score on sensory processing sensitivity.

We expected the opposite based on the differential susceptibility hypothesis (Belsky & Pluess, 2009): According to this hypothesis, children high on sensory processing sensitivity should benefit the most from responsive parenting behavior. The differential susceptibility hypothesis suggests that children, due to a vulnerability, should be disproportionately affected both by negative environmental influences as by positive environmental influences. The

results found in this study raise the question whether being low on sensory processing sensitivity indicates vulnerability, instead of being high on sensory processing sensitivity. Nevertheless, even for children low on sensory processing sensitivity, no moderation effect was found on the relation between permissive parenting behavior and empathic behavior in children. This result neither corresponds with the differential susceptibility hypothesis: These children are not affected in a ‘both for better and for worse’ manner (Belsky et al., 2007). In this study, results do not indicate a susceptibility for either positive or negative aspects of the environment. Furthermore, the moderating effect of sensory processing sensitivity on the relation between responsive parenting behavior and empathic behavior in children is also not consistent with the differential susceptibility hypothesis: Children showing less empathic behavior in the less responsive environment, show about as much empathic behavior as the comparing groups of children in a responsive environment. The results mentioned above are more in line with the diathesis stress model: Children low on sensory processing sensitivity seem vulnerable for a lack of responsive parenting behavior that is reflected in low levels of empathic behavior. Consequently, the results in this study seem to correspond with the more traditional view of the diathesis stress model, which implies that some children, due to a vulnerability in their make-up, are likely to be more affected in an adverse way by an environmental stressor, in this case less responsive parenting behavior (Belsky & Pluess, 2009).

In other words, it could be that being low on sensory processing sensitivity instead of being high on sensory processing indicates vulnerability for less empathic behavior within the context of responsive parenting behavior. Results in this study demonstrate that children high on sensory processing sensitivity already show more empathic behavior in principle, possibly because children high on sensory processing sensitivity are characterized by sensitivity to subtle stimuli, including social stimuli and sensitivity to others’ emotions (Aron et al., 2012). They seem resilient when it comes to empathy: Therefore, responsive parenting will contribute little to empathy among these children. In contrast, children low on sensory processing sensitivity are likely less empathic, because they seem less sensitive to subtle stimuli and less motivated by emotional reactivity, and will therefore benefit the most from responsive parenting behavior (Aron et al., 2012). Up to now, not much is known regarding this subject: The study of Aron and Aron (1997) is currently one of the few existing and leading studies in the field. Sensory processing sensitivity still is a little understood concept, what directly implies the necessity of more research about this subject.

However, we found no evidence that permissive parenting behavior contributes to less empathic behavior in children. This is in contrast to what Schaffer, Clark and Jeglic (2009) found in their study: They found support for a model in which maternal permissive parenting contributed to low levels of empathy. Different informants' ratings of child characteristics are often discrepant from one another and can lead to different conclusions about the same child (De Los Reyes & Kazdin, 2004). This could have contributed to the different results of this study and the study of Schaffer and colleagues (2009), whereby the child of the individual whose parenting style was being assessed, completed the questionnaire. Next to different informants, Schaffer and colleagues (2009) used different questionnaires to measure permissive parenting behavior and empathic behavior and participants in their study were adolescents instead of children what makes these studies difficult to compare. Nevertheless, not much research has been done on this topic with young children as participants. As a consequence, it is difficult to prove the opposite or confirm existing results with our finding. More research is needed in the future to gain a wider and more valid view regarding this subject.

That is why future research recommendations are partly based on some limitations of the current study. First, the internal consistency of the subscale 'ignoring misbehavior' from the Parenting Practices Questionnaire, used to measure permissive parenting behavior, turned out to be relatively low. Future studies should take this into account when measuring this parenting behavior, by using a more reliable scale to measure this concept. This would also increase the likelihood of finding a moderating effect (McClelland & Judd, 1993). It is worth noting some other limitations to this study and proposing options for future research. A second limitation is that our cross-sectional design precludes drawing conclusions about causality. An alternative explanation for the results found in this study could be that more empathic children provoke more responsive parenting behavior. Third, in this study only parent information and questionnaires for measuring concepts are used. Despite the fact that this study includes a well functioning and large sample (mostly highly educated primary caregivers), including different informants, experimental conditions and observations will bring more varied data and minimize the risk of information and method bias. Finally, because of missing data, a relatively large part of the sample was not part of the data analyses. Compared to mothers, fathers more often did not complete the first wave questionnaire. Future research should take this into account or make the decision to use only mothers or fathers as informants to provide a clear picture regarding parenting behavior, child temperament and child adjustment. Although no significant association was found between

permissive parenting behavior and empathic behavior in children, future research may prove otherwise when incorporating the aforementioned suggestions for improving the study.

Despite these limitations and future recommendations, studying possible moderating effects on empathic behavior in children is of social importance. Knowledge about the moderating effects of sensory processing sensitivity on the relationships between different parenting behaviors and empathic behavior in children, is essential for the development of interventions focused on stimulating empathic behavior in children. Children will benefit to different extents from the intervention according to their level of sensory processing sensitivity. Such research might be able to make a difference in the way teachers and parents approach these children, to give them optimal opportunities to develop empathic behavior and to function well in society.

In sum, this study demonstrated that as parents show more responsive parenting behavior, children show more empathic behavior, especially children low on sensory processing sensitivity. With this expertise, educational and parental practices can match the individual needs of children to raise them under optimal conditions, allowing them to develop empathic behavior as much as possible so they can function well in society.

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