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Developmental Trajectories of Sympathy, Moral Emotion Attributions, and Moral Reasoning:
The Role of Parental Support

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Abstract

We examined the role of parental support to children's sympathy, moral emotion attribution, and moral reasoning trajectories in a three-wave longitudinal study of Swiss children at 6 years of age ($N = 175$; Time 1), 7 years of age (Time 2), and 9 years of age (Time 3).

Sympathy was assessed with self-report measures. Moral emotion attributions and moral reasoning were measured with children's responses to hypothetical moral transgressions.

Parental support was assessed at all assessment points with primary caregiver and child reports. Three trajectory classes of sympathy were identified: high-stable, average-increasing, and low-stable. Moral emotion attributions exhibited high-stable, increasing, and decreasing trajectories. Moral reasoning displayed high-stable, increasing, and low-stable trajectories.

Children who were in the high-stable sympathy group had higher self-reported support than children in the increasing and low-stable trajectory groups. Children who were in the high-stable moral emotion attribution group or the high-stable moral reasoning group had higher primary caregiver-reported support than children in the corresponding increasing trajectory groups. Furthermore, children who were members of the high-stable group in all three moral development variables (i.e., sympathy, moral emotion attribution, and moral reasoning) displayed higher levels of self-reported parental support than children who were not.

Keywords: sympathy, moral emotion attributions, moral reasoning, supportive parenting, longitudinal study

Developmental Trajectories of Sympathy, Moral Emotion Attributions, and Moral Reasoning:
The Role of Parental Support

Supportive parenting and children's morality frequently have been conceptually related. But what does the empirical picture tell us? So far, there are relevant data pertaining to only parts of the assumed relation between supportive parenting and children's moral development, and we understand relatively little about the developmental processes underlying this relation. Moreover, much of the relevant data has been obtained in studies of young children (Kochanska & Knaack, 2003) or adolescents (Laible, Eye, & Carlo, 2008), or has been limited to the assessment of empathy/sympathy (Eisenberg, Spinrad, & Sadovsky, 2006) or moral reasoning (Walker, Hennig, & Krettenauer, 2000).

The purpose of our study was to examine the relation of trajectories of sympathy, moral emotion attributions, and moral reasoning to supportive parenting (i.e., parental encouragement and positive affect) in a three-wave longitudinal study of children at 6 years of age (Time 1), 7 years of age (Time 2), and 9 years of age (Time 3). To our knowledge, there are very few studies that have addressed these issues longitudinally using a multi-informant approach. Likewise, few, if any investigators have simultaneously investigated the differential development of sympathy, moral emotion attributions, and moral reasoning in relation to components of supportive parenting in middle childhood. This approach is particularly timely, as recent approaches in developmental psychology have called for a more differentiated view on moral emotions and moral cognition to advance the research field (Malti & Latzko, 2010). Both moral emotions and moral cognition may constitute salient motives for prosocial, morally relevant action (Carlo, Mestre, Samper, Tur, & Armenta, 2010; Malti & Latzko, 2012). The analysis of familial socialization antecedents thus contributes to a better understanding of children's developing morality.

Supportive Parenting and Sympathy

In this research, we define supportive parenting as encouragement and expressed

positive affect (Spinrad et al., 1999; Landry, Smith, & Swank, 2006). From early on, attachment theorists have stressed that supportive relationships to parents strongly facilitate a child's emerging feeling of trust and related affective moral skills, such as sensitivity to the needs of others (Bowlby, 1969). Developmental researchers have emphasized that the quality of primary caregivers' interactions with their children (e.g., their warmth, encouragement, and responsiveness) plays a central role in the development of moral emotions (Dunn, 2006; Grusec, 2006). Children may also need to experience the support of their parents in order to internalize moral norms and develop moral judgment skills (Grusec, 2011). In the current study, we relied on the operationalization of warmth and affection as the expression of interest in children's activities, demonstration of affection and love, and the expression of positive emotions with the child (Valiente, Fabes, Eisenberg, & Spinrad, 2004).

Encouragement was conceptualized as behaviors that positively support the child (Spinrad et al., 1999). Responsiveness is characterized by the degree to which parents respond to, and are sensitive to, the needs of the child (Baumrind, 1999). We combined encouragement, warmth and responsiveness into one construct labeled "supportive parenting" because all of these constructs have been conceptualized as key indicators of supportive parenting (Spinrad et al., 1999).

One morally relevant emotional process is sympathy. According to Eisenberg (2000), sympathy is defined as an understanding of another's situation, and involves feelings of concern for the other person that are not the same as those being experienced by the other. Therefore, it is genuinely other-oriented. Family interactions that provide opportunities for the child to interact with family members in ways that encourage sensitivity presumably appear to foster sympathy (Zhou et al., 2002). Supportive parenting is assumed to lead to the acceptance of parental values, and thus, enhances moral sensitivity and sympathy towards others (Grusec, 2011). However, the empirical findings are inconsistent and vary as a function of how sympathy and supportive parenting are conceptualized and measured (Eisenberg et al., 2006):

Some studies have documented a relation between supportive parenting and sympathy (Trommsdorff, 1991), whereas others have not (Kienbaum, Volland, & Ulich, 2001). In a study by Spinrad et al. (1999), parents' positive affect and encouragement was concurrently related to self-reported sympathy of six-year-old children. In the present study, we extended this by examining the longitudinal relation between supportive parenting and sympathy using a multi-informant approach including other and self ratings. Systematic empirical data supporting the commonly assumed relations between children's trajectories of sympathy and supportive parenting would contribute to developmental theory. To obtain such data was the first objective of this study.

Supportive Parenting and Moral Emotion Attributions

The second objective of this study was to investigate the relation between supportive parenting and moral emotion attributions. Moral emotion attributions are an important component of children's experiences of sociomoral events (Arsenio, Gold, & Adams, 2006). The attribution of negative (i.e., moral) emotions to moral wrongdoers indicates that children understand the (negative) outcomes of sociomoral events and accept responsibility for violating internalized norms (Krettenauer, Malti, & Sokol, 2008). Previous research has shown that children mostly report guilt and sad feelings when attributing negative emotions to the self-as-victimizer (Malti & Latzko, 2012). Furthermore, such feelings are related to both morally relevant, prosocial behavior, as well as to immoral, aggressive behavior (Krettenauer et al., 2008). Based on this conceptualization of moral emotion attributions as indicating an internalized sense of responsibility, it is reasonable to assume that supportive parenting fosters not only other-oriented moral emotions such as sympathy, but also moral emotion attributions.

So far, moral emotion attributions have been most prominently investigated in the happy-victimizer task. The predominant finding of this research is that, despite understanding the validity of moral rules such as justice and welfare (Turiel, 1983), kindergarten and early

school-age children still attribute positive emotions to wrongdoers. Numerous studies have provided evidence that before the age of 6, children do not typically attribute moral emotions, such as guilt, to victimizers (see Arsenio et al., 2006, for a review). Keller, Lourenço, Malti, and Saalbach, (2003) argued that only emotions attributed to the self-as-victimizer assess children's internal commitment to moral rules.

There is some empirical support for the argument that parenting may relate to children's moral emotion attributions. For example, observations of early maternal child-rearing behavior deemphasizing the use of power were related to children's internalization 6 years later, when they were 8 to 10 years old (Kochanska, 2010). The measures of internalization included children's narratives about emotions they attributed to the self as victimizer, justifications of these emotions, and anticipated reparation behaviours (see also Kochanska, Forman, Aksan, & Dunbar, 2005; Kochanska, Koenig, Barry, Kim, & Yoon, 2010). Our study is the first to investigate whether children with supportive parents express more moral emotion attributions over time than children with less supportive parents in the kindergarten-to-elementary-school years. Primary caregiver and child reports of supportive parenting were obtained to study its relation to moral emotion attributions. We deliberately chose to begin the study when the children were 6 years old because research in the happy victimizer tradition has shown that this is the age when emotions attributed to the self-as-victimizer are most likely to shift from positive to negative; thus, the quality of parenting may be especially relevant at this age.

Supportive Parenting and Moral Reasoning

The third objective of this study was to investigate the relation between supportive parenting and the development of moral reasoning in middle childhood. Domain researchers have proposed that affective dimensions of parenting, such as support, may be important in promoting children's moral reasoning skills because moral conflicts frequently occur in the context of the broader affective quality in parent-child relations (Smetana, 1997). Still, most

researchers to date have focused on the relations between supportive parenting and moral reasoning in late childhood or adolescence, seemingly because significant qualitative shifts in moral reasoning are expected to take place during early adolescence (for an exception, see Walker et al., 2000).

Regarding relations between supportive parenting and moral reasoning, only a few studies in middle childhood exist, and almost all are limited to examining cross-sectional relations (Janssens & Dekovic, 1997). An exception is a longitudinal study by Walker and Hennig (1999): They found that children had better moral reasoning skills (i.e., stage level score) if their parents had exhibited supportive interactions with the child and had a higher moral reasoning stage level than that of their child. The present study is one of the first to examine longitudinally if supportive parenting is important for predicting moral reasoning from early to middle childhood.

The Present Study

In summary, we investigated the relation of supportive parenting to children's sympathy, moral emotion attribution, and moral reasoning trajectories over a three-year time period. Regarding the developmental trajectories of sympathy, moral emotion attributions and moral reasoning, we expected the majority of the children to show increasing trajectories as previous research has shown normative developmental increases in these dimensions of moral development (Eisenberg et al., 2006; Hoffman, 2000; Malti, Gummerum, Keller, & Buchmann, 2009). In contrast, we expected a smaller group of children to display decreasing or stable-low trajectories in sympathy, emotion attribution and moral reasoning because children also increasingly differentiate judgments and emotions based on the situational context (e.g., who is being victimized, when, and why) (Hay, 1994).

Based on the view that supportive parent-child relationships contribute to affective and cognitive moral development, we expected supportive parenting to predict increasing and high-stable parent- and child-rated sympathy trajectories over time. We also predicted that

supportive parenting would be associated with increasing and high-stable moral emotion attributions and moral reasoning over time. This hypothesis was derived from a previous study by Kochanska (1991) showing that authoritative parenting in the toddler years predicted children's later moral internalization, including emotion attributions.

Furthermore, we also examined the role of supportive parenting on interrelations between sympathy, moral emotion attribution, and moral reasoning trajectories. Researchers have argued that affective and cognitive components of morality get increasingly coordinated over the course of development (citation withheld for blind review). Yet, longitudinal evidence is still very limited. Based on the assumption that different dimensions of morality become increasingly integrated in middle childhood, we expected supportive parenting to positively predict membership in high stable trajectories of sympathy, moral emotion attribution, and moral reasoning.

We controlled for sex, verbal intelligence, and socioeconomic status in the analysis because these variables have been shown to affect moral development (Eisenberg et al., 2006; Malti, Gasser, & Gutzwiller-Helfenfinger, 2010).

Method

Participants

A community sample of kindergarten children and their primary caregivers was drawn from residents in the canton of Zurich in Switzerland (citation withheld for blind review). Written informed parental consent for participation was obtained. Interviews were conducted at T1 with 175 children (85 girls) and 175 primary caregivers. A supplementary questionnaire measuring the child's social development and the primary caregiver's parenting style was filled out by 163 (93%) of the primary caregivers. The participating children had an average age of 6.1 years ($SD = 0.19$). The primary caregivers were defined as the persons most responsible for the children's socialization (90.3% mothers; 9.7% fathers), of whom 85% were Swiss nationals and 15% were other mostly European nationalities. We kept the 10% of

the fathers in the sample because we think it is justified to focus on the role of the primary caregivers' perceptions of supportive parenting (i.e., defined as the person most responsible for the child's socialization) on children's moral development. Our previous research indicates that this is a valid approach (citation withheld for blind review). At T1, most of the primary caregivers were married and lived together with their partner (88%), 12% of the primary caregivers were singles or divorced.

At the second assessment (T2; one year later), 158 interviews were carried out with children and 160 with primary caregivers. One child refused to participate and one mother refused to let her child participate because the child was too shy. A supplementary questionnaire measuring the child's social development and the primary caregiver's parenting style was completed by 147 (92%) of the primary caregivers. At the third assessment (T3; two years after T2), 141 interviews were carried out with children and 139 with primary caregivers. A supplementary questionnaire measuring the child's social development and the primary caregiver's parenting style was completed by 134 (96%) of the primary caregivers.

Sample attrition effects were tested by comparing the primary caregivers at T1 ($N = 175$) with those who dropped out at T2 ($N = 15$) and T3 ($N = 21$) on demographic variables (i.e., highest primary caregiver education, marital status) and the study variables at T1. Caregivers who dropped out at T2 were more likely to lack a significant other than caregivers who stayed in the sample at T2, $\chi^2(1, 175) = 4.44, p < .05$: 25% of this latter group were single, compared to 7% of the other group. No other variables were related to attrition status.

Of the original 175 participants, 158 children had at least two waves of sympathy assessments (attrition rate: 10%), 160 had at least two waves of moral emotion attribution assessments (attrition rate: 9%), and 159 children had at least two waves of moral reasoning assessments (attrition rate: 9%).

Procedure

The first assessment was conducted during the spring in 2006. The second and third assessments were completed 1 and 2 years later respectively, using the same procedure from T1. There were three sessions for each child at T1, each lasting about 60 minutes: one at home, consisting of a computer-assisted personal interview (CAPI) and video recording (observation) of the child's interaction with the primary caregiver, and two in quiet rooms at the kindergarten (or school, respectively), using paper-and-pencil tests and video recording. The primary caregivers were individually interviewed at home using the CAPI procedure; these sessions also lasted about 60 minutes. While the child was being interviewed at home, the primary caregiver filled out a supplementary paper-and-pencil questionnaire on the child's social development and on their parenting style. The interviewers were undergraduate psychology students who had been intensively trained in the relevant interview techniques.

Measures

Measures of (a) the child's sympathy, (b) the child's moral emotion attributions and moral reasoning, and (c) supportive parenting were obtained.

Sympathy. At T1-T3, children rated their sympathy on a scale containing five items (from Eisenberg, Fabes, & Murphy, 1996; e.g., "When I see another child who is hurt or upset, I feel sorry for him or her"). The children were asked whether the sentence was like him/her or not, and if so, how much (0 = *not like him/her*; 1 = *sort of like him/her*; 2 = *like him/her*). Cronbach's α for the sympathy scale was .67 at T1, .73 at T2, and .74 at T3.

Moral emotion attributions and moral reasoning. At T1-T3, children's emotion attributions and moral reasoning were measured using four hypothetical rule violations: not supporting a needy child, not sharing a pencil, stealing another child's chocolate, and pushing a child off a swing. Previous research in the happy victimizer tradition has shown these vignettes to be valid and reliable (Keller et al., 2003). The stories were systematically counterbalanced, and there were no order effects. Each story was illustrated by a 3-frame sequence of sex-matched cartoons. For example, in the stealing story a child (victim) leaves

his or her jacket with a chocolate bar in the kindergarten/school hall (cartoon 1). Another child (victimizer) takes the chocolate bar (cartoon 2). In cartoon 3, the first child (victim) realizes that the chocolate bar has been stolen. After listening to each of the four stories at T1-T3, the children were asked for (1) their moral evaluation of rule validity and justification (“Is it right or not right what the protagonist did? Why/ why not?”), and (2) an attribution of emotion to the self as victimizer and justification (“How would you feel afterwards? Why?”).

Coding of moral emotion attributions. The emotions attributed to the self were coded 0 for positive and 1 for negative. Very few children attributed mixed emotions (< 1%), and these were therefore coded 1 and combined with negative emotions. Twelve percent, 10%, and 23% of the transcripts were coded by two independent raters at T1, T2, and T3 respectively, and the interrater agreement of the emotion attribution coding was 100% for the interviews at T1-T3. The emotion attribution scores were moderately interrelated across stories (all $r_s > .38$, $p < .001$, at T1-T3; range 0.33-0.47). The scores were therefore averaged across the four stories, yielding means for T1-T3. Higher scores indicated more negative emotion (i.e., moral) attributions.

Coding of moral reasoning. A validated coding system used in previous studies on the development of moral reasoning (citation withheld for blind review) was chosen to code justifications of emotion attributions: (a) moral/altruistic reasons (e.g., “It is not fair to steal”, “The other child will be sad”), (b) sanction-oriented reasons (e.g., “The teacher may find out and get angry”), (c) hedonistic, self-interested reasons (e.g., “He just likes pencils so much”), and (d) unelaborated reasons (e.g., “because he just did it”; “It is not nice”). All responses were probed, after which the reasons were coded. If the child did not change the initial response or did not give an additional answer after probing, the initial argument was coded. As children mentioned more than one justification after probing very infrequently (1%), only one such argument was coded. Twelve percent, 10%, and 23% of the transcripts were coded by two independent raters at T1, T2, and T3, respectively, with $\kappa_s = .96$, $.90$, and $.92$.

The raters were undergraduate psychology students who worked as interns at the Research Centre in Switzerland where the study was conducted. The students were intensely trained in coding by the first author of this manuscript. The raters discussed the disagreements with each other until a consensus was reached. Next, a level score of moral reasoning was constructed (Eisenberg et al., 1987): Sanction-oriented reasons were only infrequently mentioned (< 5%). Moral/altruistic reasons were scored a 2, unelaborated or sanction-oriented reasons were scored a 1, and hedonistic reasons were scored as 0. Almost no child mentioned undifferentiated reasons and attributed positive emotions. Likewise, no child attributed negative emotions and justified this with hedonistic reasons. It seemed thus justified to code unelaborated reasons higher than hedonistic reasons in this context because the former are accompanied by a naïve understanding of moral emotions, whereas the latter are not. With few exceptions, the level scores were significantly interrelated across stories at all assessment points, and mean scores for T1, T2, and T3 were computed and labelled “moral reasoning”. Higher scores indicate more moral reasoning.

Supportive parenting. Supportive parenting was assessed at T1-T3 by (a) primary caregivers’ ratings, and (b) children’s ratings.

Primary caregivers indicated their level of support on a 6-point scale (from never to always) to 10 revised items from two parenting scales, which have been validated in previous studies (citation withheld for blind review). The two scales represented warmth and encouragement. The warmth scale contained 4 items and were taken from the revised, German version of the Supportive Parenting Scale (Schwarz, Walper, Gölde, & Jurasic, 1997; see Simons, Lorenz, Conger & Wu, 1992). One example item for warmth is “I feel strong affection and love for my child”. The encouragement scale was developed by the research team and contained 6 items; these items were oriented on scales that measure encouragement and that have been used in a German longitudinal study on parenting

(Schwarz et al., 1997; Sturzbecher & Freytag, 2000). One example item for encouragement is, “I encourage my child when he or she has not succeeded”. Because the two scales were significantly associated with each other at T1-T3 ($r_s > .20, p < .01$), they were aggregated at each time point, and the resulting composite scale was labelled “primary caregiver-reported supportive parenting” ($\alpha_s = .68$ at T1, $.75$ at T2, and $.65$ at T3).

The children’s reports of supportive parenting were assessed using the German version of the Berkeley Puppet Interview (BPI; Perren, von Wyl, Stadelmann, Buergin, & von Klitzing, 2006). This instrument mixes structured and clinical interview techniques to elicit children’s self-perceptions by obtaining responses from them using two identical hand puppets that make two opposing statements on a topic. For this study, there were 10 supportive parenting items that tapped into warmth (6 items; for example, “My mother tells me that she likes me very much”) and responsiveness (4 items; for example, “My mother tries to cheer me up when I am sad”). The two scales were highly associated with each other at T1-T3 ($r_s > .46, p < .001$), and the scales were therefore aggregated at each time point. The resulting composite scale was labelled “child-reported supportive parenting”. Studies support that warmth and responsiveness are subdimensions of ‘supportive parenting’ as both reflect affection, love, and an interest in the child’s activities and needs (see Eisenberg et al., 2006). Previous studies indicate that the BPI is a reliable measure to assess children’s perceptions of their own social and emotional development and the parenting they receive (see Ablow, Measelle, Cowan, & Cowan, 2009). The interviews were videotaped and afterwards scored for level of support (1 = very low to 7 = very high) by two independent raters who were blind to all of the other data (interrater reliabilities [average ICC] = $.96$, range $.80$ – 1.00 ; α_s at T1 to T3 = $.71$, $.69$, and $.74$, respectively).

Intelligence. As a control variable, the children’s intelligence was measured at T1 using the “verbal intelligence” section of the German version of the Hamburg-Wechsler Intelligence Test (HAWIK-III). The mean IQ of the sample was 97.54 ($SD = 12.60$).

SES. As another control variable, the socioeconomic background of the primary caregivers was assessed: Nine percent of the primary caregivers had little or no secondary education, 50% had vocational training, 30% had a baccalaureate degree or a higher vocational diploma, and 12% had a university degree. Primary caregiver education scores, which served as an index of socioeconomic status (SES), were then computed (Range: 1-10; $M = 5.80$, $SD = 2.47$). Education was chosen as an indicator of SES because it is one of the most commonly used indicators for SES and has been shown to affect developmental and health outcomes (Duncan & Murnane, 2011). Higher scores indicate higher SES.

Missing data. In this study, models were estimated using Mplus version 6.11, which uses a full-information maximum-likelihood (FIML) estimation under the assumption that data are missing at random (MAR). Accordingly, the reason for missing data is either random or random after incorporating other variables measured in the study (Arbuckle, 1996).

Results

Trajectories of Sympathy, Moral Emotion Attributions, and Moral Reasoning

The descriptive statistics of the main study variables are displayed in Table 1. Model testing was used to determine growth patterns of sympathy, moral emotion attributions, moral reasoning, and the number of distinct class trajectories. Data analysis was conducted using Mplus version 6.11 (Muthén & Muthén, 2010). Zero-order correlation indicated that there were no significant relations between primary caregiver-reported parenting and child-reported parenting. Thus, we did not combine the parenting variables across informants. Because each of the three supportive parenting variables was significantly related across time points, the supportive parenting variables were averaged across the three time points.

The intercept+linear growth model was selected as the baseline model given that it appeared to provide the most parsimonious fit to the data in preliminary analyses. Based on the intercept+linear growth model, models with different numbers of latent classes were compared to evaluate which model provided the best fit to the data. The intercept and slope

residuals were fixed at zero. We estimated fit indices for one to four classes for sympathy, moral emotion attributions, and moral reasoning (Table 2). Following the procedure suggested by Muthén and Muthén (2010), the variances of the continuous growth factors and the covariance between the growth factors were initially set to zero. The model fit of all three models was best in the 3-class model (*BIC*). Entropy decreased with increasing number of classes for sympathy, and it decreased from a model with two classes to a model with three classes for moral emotion attributions and moral reasoning. The Lo-Mendell-Rubin (*LMR*) likelihood ratio test of model fit indicated that the increment of estimate from a model with two classes to a model with three classes was significant for sympathy, but not for moral emotion attributions and moral reasoning. However, the increment of estimate from a model with three classes to a model with four classes was not significant for any of the three variables. Because the four-factor solution also yielded very small sample sizes for two of the trajectories for moral emotion attribution analysis and moral reasoning analysis, the *BIC* increased from three- to four-class models. The models with three developmental trajectories were chosen as they were optimal for all three outcome variables in that they balanced goodness-of-fit and parsimony most effectively.

For sympathy from 6- to 9-years of age (Figure 1), the first group of children (43%, $n = 68$) was labelled as high-stable because their sympathy was consistently high over time; the second group (47%, $n = 75$), labelled the increasing group, showed increasing sympathy over time; and the third group (10%, $n = 15$), labelled as the low-stable group, showed consistently low sympathy over time (Figure 1).

The three moral emotion attribution trajectories identified a group of children (69%, $n = 111$) labelled as high-stable because their moral emotion attribution was consistently high over time; a second group (20%, $n = 32$) labelled as the increasing group because they showed increasing moral emotion attributions over time; and a third group (11%, $n = 17$) was labelled as the decreasing group who showed a decrease in moral emotion attributions over

time (Figure 2).

For moral reasoning, the first group of children (66%, $n = 105$) was labelled high-stable because their moral reasoning was consistently high over time; the second group (15%, $n = 24$) was labelled as the increasing group because they showed increasing levels of moral reasoning over time; and the third group (19%, $n = 30$), labelled as the low-stable group, showed consistently low levels of moral reasoning over time (Figure 3).

Links between Supportive Parenting and Trajectories of Sympathy

The latent class descriptive statistics of the supportive parenting predictors included in the analysis across the sympathy, moral emotion attribution, and moral reasoning trajectory groups are displayed in Table 3. Two multinomial logistic regression models were run to examine the prediction of sympathy trajectory group membership by each predictor variable and the control variables (i.e., gender, verbal intelligence, SES). Because the dependent categorical variable consisted of three categories, the log odds of membership were calculated relative to the high-stable sympathy groups. Next, we analyzed the effects of the resulting two supportive parenting variables and control variables on moral development trajectory within one regression model (Table 4). Regarding sympathy, the findings indicated that neither of the two supportive parenting predictors differentiated between low-stable and high-stable groups, perhaps because of the small number of children in the low-stable group ($n = 15$). Child-reported parental support differentiated increasing and high-stable groups as well as low-stable and high-stable groups: Children who reported low parental support were more likely to be in the increasing compared to the high-stable group. Likewise, they were more likely to be in the low-stable compared to the high-stable group. Finally, we compared the low-stable and increasing groups: Neither of the parenting variables differentiated these trajectories.

Links between Supportive Parenting and Trajectories of Moral Emotion Attributions

Again, two multinomial logistic regression models were run to examine the prediction of

moral emotion attribution trajectory group membership by each variable (for the latent class descriptive statistics of the supportive parenting and control variables across the three trajectory groups; Table 4). Because the dependent categorical variable consisted of three categories, the log odds of membership were calculated relative to the high-stable moral emotion attribution trajectory group. Primary caregiver-reported support differentiated the increasing and high-stable trajectories: According to the primary caregiver-reported supportive parenting ratings, children who were in the high-stable trajectory group had higher parental support than children who were in the increasing trajectory group. The predictor variables did not differentiate between the decreasing and high-stable trajectory groups and this was potentially the case because there were only 17 children were in the decreasing group. We also analyzed if the predictor variables differentiated decreasing and increasing trajectory groups; they did not.

Links between Supportive Parenting and Trajectories of Moral Reasoning

Again, we ran two multinomial logistic regression models to investigate the prediction of moral reasoning trajectory group membership by each variable (for the latent class descriptive statistics of the supportive parenting and control variables across the three trajectory groups; Table 3). Because the dependent categorical variable consisted of three categories, the log odds of membership were calculated relative to the high-stable moral reasoning trajectory group (Table 4). Primary caregiver-reported support differentiated the increasing and high-stable trajectories: According to the primary caregiver reports, children who were in the high-stable trajectory group had higher parental support than children who were in the increasing trajectory group. We also analyzed if the predictor variables differentiated low-stable and increasing trajectory groups; they did not. Children in the high-stable trajectory scored higher on verbal intelligence than children on the increasing trajectory group, $OR = .94, p < .05$.

Links Between Supportive Parenting and the Combined Trajectories of Sympathy, Moral Emotion Attribution, and Moral Reasoning

Lastly, we tested if children who were members of a high-stable trajectory in all moral outcomes (i.e., sympathy, moral emotion attribution, and moral reasoning) differed in terms of their supportive parenting from the remaining children. For these analyses, we created a dummy variable that included all children who were members of the high-stable trajectory in all three outcomes and compared them to the remaining children (coding: 1 = stable high in all outcomes, 0 = rest). Twenty-four percent of the children were in the high-stable group in each of the three outcome variables (i.e., sympathy, moral emotion attribution, and moral reasoning), compared to 76% who were not. Next, a binary logistic regression model was computed to predict group membership in this combined variable by the supportive parenting variables. The model was significant, $\chi^2(5, 174) = 14.74, p < .01$, Nagelkerke's $R^2 = .15$. Child-reported supportive parenting significantly predicted high-stable membership, $\beta = 1.99, p < .01$, and primary-caregiver reported supportive parenting marginally predicted high-stable group membership, $\beta = 0.99, p = .05$ (Figure 4).

Discussion

This study investigated the relations between dimensions of supportive parenting (i.e., encouragement, warmth, responsiveness) and children's trajectories of sympathy, moral emotion attributions, and moral reasoning in middle childhood.

One contribution of our study is the finding of three distinct developmental trajectory groups for sympathy. Specifically, the findings indicated that there were high-stable, increasing, and low-stable sympathy groups. Some children in this age group may develop increasing sympathy due to increasing cognitive awareness of the consequences in harmful situations for self and other (Hoffman, 2000). The low-stable sympathy group was the group with the smallest sample size, indicating that most children in middle childhood do report being at least somewhat sympathetic. At the same time, these findings suggest that a small number of children remain low in sympathy across development. Because previous research documented a negative association between sympathy and problem behaviors

(Strayer & Roberts, 2004), perhaps children in the low-stable sympathy trajectory group are at particular risk for the development of severe forms of behavioral problems.

Consistent with our expectations, children who reported low parental support were more likely to be in the increasing or low-stable compared to the high-stable sympathy group. These findings resonate with previous findings (Spinrad et al., 1999) and extend it by showing that child-reported caregiver support differentiates trajectories of self-reported sympathy. A child's experience of emotional support as provided by the primary caregiver is likely to facilitate the child's later sympathizing with the emotional states of individuals in unfortunate circumstances (see Kochanska, Aksan, Knaack, & Rhines, 2004). These findings add to the existing literature, as trajectories of self-reported sympathy have rarely been included in previous longitudinal studies of young children's development in relation to parenting. However, it needs to be kept in mind that the primary caregiver and child reports of support were not interrelated with each other, which limits the generalizability of our finding.

Regarding moral emotion attributions, the findings are the first to show that moral emotion attributions follow distinct trajectories in middle childhood: a high-stable, an increasing, and a decreasing group. The latter group is somewhat surprising, as we expected rather a low-stable group. Because some researchers have shown that a lack of moral emotions is associated with aggression (Krettenauer et al., 2008), this finding may indicate that some children develop less moral emotion attributions due to their real-life experiences as bullies who, after some time, decrease emotional involvement in the transgression.

As expected, parental support also differentiated moral emotion attribution trajectories. Thus, children who were in the high-stable group had higher parental support according to their primary caregivers than children who were in the increasing group. This finding is important because researchers have acknowledged the role of moral emotion attributions in children's developing morality (Krettenauer et al., 2008). Recent studies have supported that moral emotion attributions contribute to children's (im)moral behavior (Malti et al., 2009).

Possibly, children with supportive parents are cognitively better able to reconstruct the intentions of care-giving adult role models and translate this experience into new knowledge about the self's emotions in relation to others (Leman, 2005).

In contrast to these findings, the supportive parenting variables did not differentiate the low-stable/decreasing versus the high-stable sympathy and moral emotion attribution trajectory groups. The sample sizes in the low-stable groups may have been too small to detect statistical differences ($ns = 15, 17$). The lack of findings for children low in sympathy and moral emotions may also be due to parenting apparently having little effect on the behavior of children with callous-unemotional traits (Wootton, Frick, Shelton, & Silverthorn, 1997). Possibly, the longitudinal relations between these trajectory groups and parenting get stronger during late childhood and early adolescence, a time when inter-individual differences in sympathy and self-reported moral emotions are assumed to undergo further qualitative transformations (Malti & Keller, 2010). As our longitudinal study is still ongoing, we will be able to answer this question in the future.

A further significant finding is that moral reasoning followed distinct trajectories in middle childhood: a high-stable, an increasing, and a low-stable group. This extends previous studies that used a variable-centered approach to investigate the development of moral reasoning longitudinally (Eisenberg et al., 1983). The findings document that a group of children (i.e., the low-stable group) does not develop their cognitive moral skills over time, or at least over the three years in middle childhood. Because studies have shown that moral reasoning relates to both moral emotions and (im)moral behavior, future studies may investigate if children in the low-stable moral reasoning group are at risk for the development of aggressive problem behaviors.

As expected, parental support also differentiated moral reasoning trajectories. Thus, children who were in the high-stable group had higher parental support than children who were in the increasing group. This finding supports previous studies on the role of support on

moral reasoning development (e.g., Walker & Hennig, 1999). It is a possibility that children need supportive parents with a gentle Socratic interaction style of eliciting the other's thoughts and emotions to develop moral reasoning skills (Walker et al., 2000). Again, the lack of findings for the group children who consistently displayed low moral reasoning could be due to the limited effects of parenting on the behaviour of children with psychopathic (callous-unemotional) traits (Wootton et al., 1997), who might be expected to exhibit self-oriented, low-level moral judgment.

Interestingly, we found that parental support differentiated combined trajectories of sympathy, moral emotion attribution, and moral reasoning. Specifically, child-reported support predicted a higher probability to be in the high-stable group of all three moral variables (i.e., sympathy, moral emotion attribution, and moral reasoning). Continuous parental support, as perceived by the child, may facilitate the integration of different affective and cognitive components of morality. Therefore, high and continuous perceived support may help children to remain high-stable in different components of morality, whereas lower levels of support might lead to more diverse developmental trajectories in moral emotions and moral cognition. Since our findings are the first to show that parental support affects combined trajectories of affective and cognitive moral development in middle childhood, future research is needed to validate this finding.

Primary caregiver-reported supportive parenting and child-reported supportive parenting were not related. However, we did not expect correlations between the two measures of parenting because only one of the subscales of the primary caregiver and child report was the same across informants (i.e., warmth), whereas the other subscale differed for the two informants (i.e., encouragement and responsiveness, respectively). This was done because we wanted to use a reliable and validated self-report scale for use with younger children (i.e., the BPI). Consequently, the BPI scales have not been adapted for use with adult samples, which is why another parenting scale for the primary caregivers was used. The two

different subscales of our “supportive parenting scales” might have contributed to the low correspondence across informants.

We did not find gender differences in the moral development trajectory groups. This supports the view that the overall gender differences in children’s moral development are not significant (Krettenauer et al., 2008). However, only about one-third of the members in the low-stable sympathy groups were girls. This finding resonates with other findings. For example, Kochanska et al. (1996) found similar gender effects, as 2-5 year old girls were higher on narrative and objective conscience measures than boys. These gender differences may be explained by family socialization pressures that orient girls and boys towards different values in life, such as care versus competition (Brody & Hall, 2000).

Children in the high-stable moral reasoning group had higher intelligence scores than children who were in the increasing trajectory group. This extends previous cross-sectional findings on links between cognitive skills and the development of moral reasoning (Malti et al., 2010). It is reasonable to assume that intelligence is mostly related to moral reasoning skills but not moral emotions, as these require conductive logic and analytical skills. Our findings support this idea by showing that verbal intelligence is most likely to affect cognitive dimensions of moral development (Malti & Buchmann, 2010).

Surprisingly, SES was not related to any of the outcome variables. This finding contradicts previous cross-sectional research with adolescent samples, which has documented links between SES and moral development. SES differences in moral development may become more accentuated later in development because this is when children increasingly negotiate conflicts about rules and obligations with family members (Smetana, 2007). Alternatively, the finding might be due to our sample composition, which mostly comprised Swiss middle-class families. In addition, Swiss society generally lacks the great SES disparities that can be found, for example, in the United States. Furthermore, we assessed only one indicator of SES (i.e., education). Perhaps other, less traditional indicators of SES, such

as a family's cultural capital, affect moral development.

There are several limitations in the present study. First, the study evaluated only primary caregivers' supportive parenting. Thus, it did not assess the behavior of other family members, such as siblings (Dunn, 2006), although researchers have argued that moral development depends on the relationships among all family members (Killen & Hart, 1995). Future studies may help to disentangle how the diverse relationships within the family contribute to a child's morality. Second, the sample sizes in some groups were rather low, which may have precluded us from detecting group differences in relation to supportive parenting. Thus, future studies with larger samples are needed to extend the current findings. This is particularly important for comparisons between low-stable and other trajectory groups. Third, the child-reported and parent-reported supportive parenting measures were not interrelated. This might have been related to the fact that only one subdimension to assess support was the same across informants (i.e., warmth), whereas the other subdimension of support differed for child- and primary-caregiver ratings (i.e., encouragement vs. responsiveness). In addition, the child-reported support scale has not been frequently used internationally to assess perceptions of parenting. Therefore, the generalizability of the findings remains limited. Still, both scales showed theoretically expected relations to children's moral development. Fourth, our measures of moral development were limited to self-report. Although self-report measures are useful and valid measures of children's own constructions of their morality (citation withheld for blinded review), additional observational measures might yield important information on moral development.

Despite these limitations, this study provides useful insights into the development and socialization of childhood morality by showing how supportive parenting is linked to trajectories of moral development from early to middle childhood.

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Table 1

Means and Standard Deviations of Study Main Variables by Assessment Point

Variable	Assessment Point		
	T1	T2	T3
Sympathy ^a	0.86 (0.54)	1.23 (0.56)	1.49 (0.42)
Moral emotion attribution ^b	0.72 (0.34)	0.80 (0.29)	0.87 (0.21)
Moral reasoning ^a	1.14 (0.57)	1.44 (0.36)	1.61 (0.38)
Child-rated supportive parenting ^c	5.54 (0.62)	5.73 (0.47)	5.36 (0.50)
Primary caregiver-rated supportive parenting ^d	5.22 (0.45)	5.18 (0.50)	5.11 (0.54)

Notes. T1 = Time 1. T2 = Time 2. T3 = Time 3.

^aRange: 0-2. ^bRange: 0-1. ^cRange: 1-6. ^dRange: 1-7.

Table 2

Model Fit of Growth Mixture Models

No. of classes	Loglikelihood	BIC	AIC	Entropy	LRT p-value for k^{-1}
Sympathy					
1	-348.753	722.82	707.51	-	-
2	-319.977	680.46	655.95	0.88	0.0001
3	-307.894	671.48	637.79	0.77	0.0004
4	-304.484	679.84	636.97	0.74	0.4725
Moral Emotion Attribution					
1	-58.577	142.53	127.15	-	-
2	-14.180	68.96	44.36	0.93	0.0000
3	1.275	53.28	19.45	0.90	0.4300
4	6.205	58.64	15.59	0.91	0.3217
Moral Reasoning					
1	-270.90	567.15	551.81	-	-
2	-258.87	558.28	533.73	0.47	0.0003
3	-254.48	564.71	530.96	0.65	0.2885
4	-252.60	576.16	533.19	0.62	0.5075

Table 3

Descriptive Statistics for Supportive Parenting Factors Across the Three Trajectory Groups

	Sympathy			Moral Emotion Attribution			Moral Reasoning		
	Stable low	Increasing	Stable high	Decreasing	Increasing	Stable high	Stable low	Increasing	Stable high
Supportive Parenting	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Child report T1-T3	5.40 (0.54)	5.51 (0.37)	5.61 (0.40)	5.49 (0.41)	5.60 (0.35)	5.49 (0.53)	5.55 (0.41)	5.59 (0.30)	5.55 (0.40)
Primary caregiver report T1-T3	5.19 (0.40)	5.13 (0.40)	5.22 (0.46)	5.15 (0.47)	5.07 (0.37)	5.22 (0.43)	5.18 (0.36)	4.96 (0.33)	5.21 (0.44)
Control Variables									
Gender (female)	33%	53%	52%	56%	50%	49%	41%	39%	55%
Intelligence	94.91 (11.75)	96.51 (12.32)	98.03 (14.46)	100 (9.90)	92.41 (22.49)	97.16 (14.17)	94.44 (14.70)	89 (29.25)	98.28 (12.33)
SES	4.60 (1.81)	5.72 (2.47)	6.16 (2.53)	6.56 (2.13)	5.03 (2.26)	5.80 (2.84)	4.97 (2.04)	6.00 (2.36)	5.86 (2.86)

Table 4

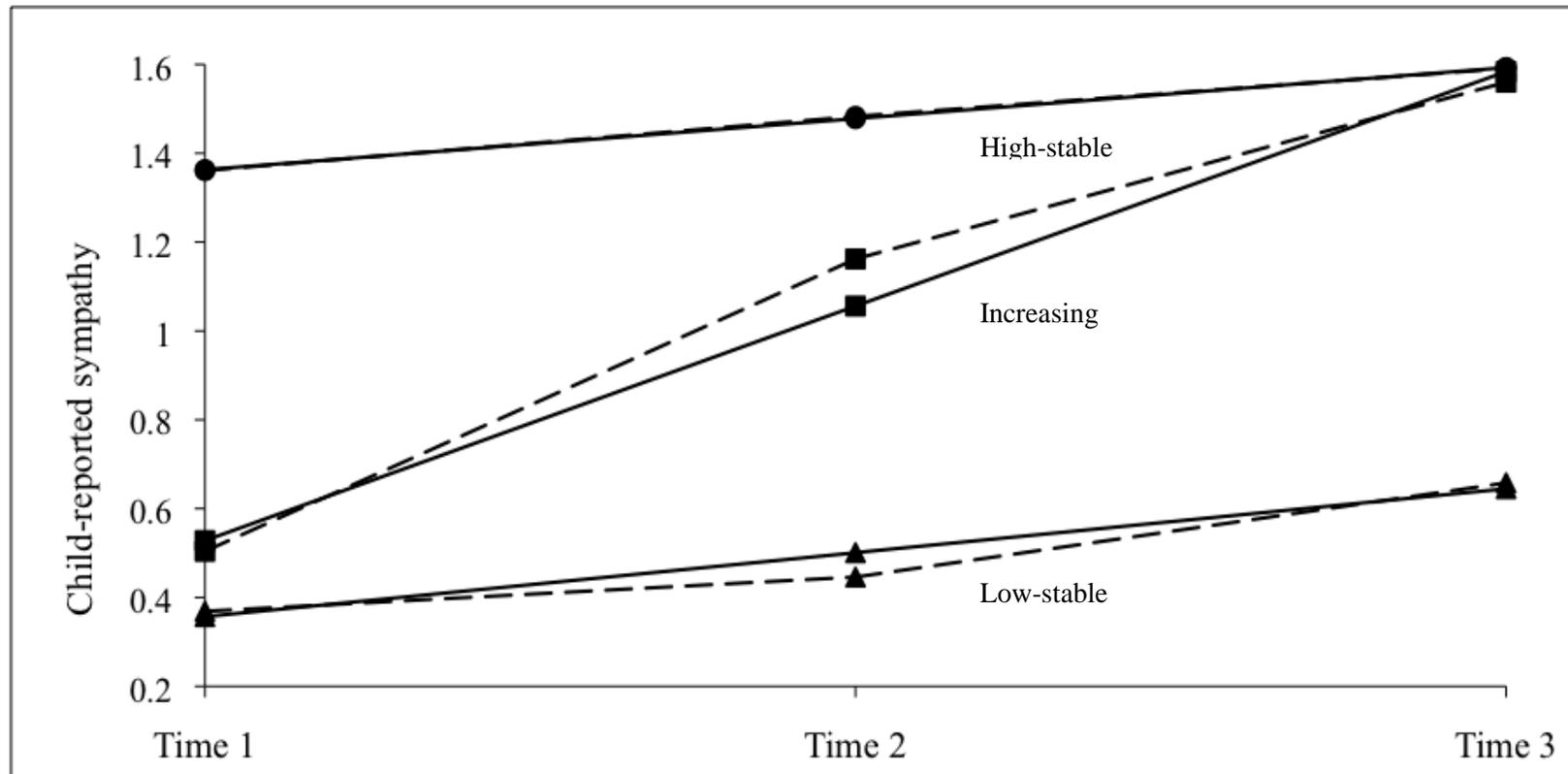
Odds Ratios for Supportive Parenting Factors Predicting Membership in Sympathy, Moral Emotion Attribution, and Moral Reasoning Trajectory Groups

Supportive Parenting	Sympathy		Moral Emotion Attribution		Moral Reasoning	
	Stable low	Increasing	Increasing	Decreasing	Stable low	Increasing
Child report T1-T3	3.10*	0.42*	2.55	0.95	0.99	1.34
Primary caregiver report T1-T3	1.65	0.52	0.44*	0.62	0.90	0.26*
Control variables						
Gender (female)	1.91	1.08	0.67	0.68	0.86	0.76
Intelligence	0.99	0.98	0.99	1.01	1.01	0.94*
SES	1.24	1.01	1.09	0.90	0.93	1.09

Notes. Reference category was the high-stable group.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure Captions.

*Figure 1.*

Mean Class Trajectories (dashed lines) and Fitted Mean Trajectories (solid lines) for Sympathy.

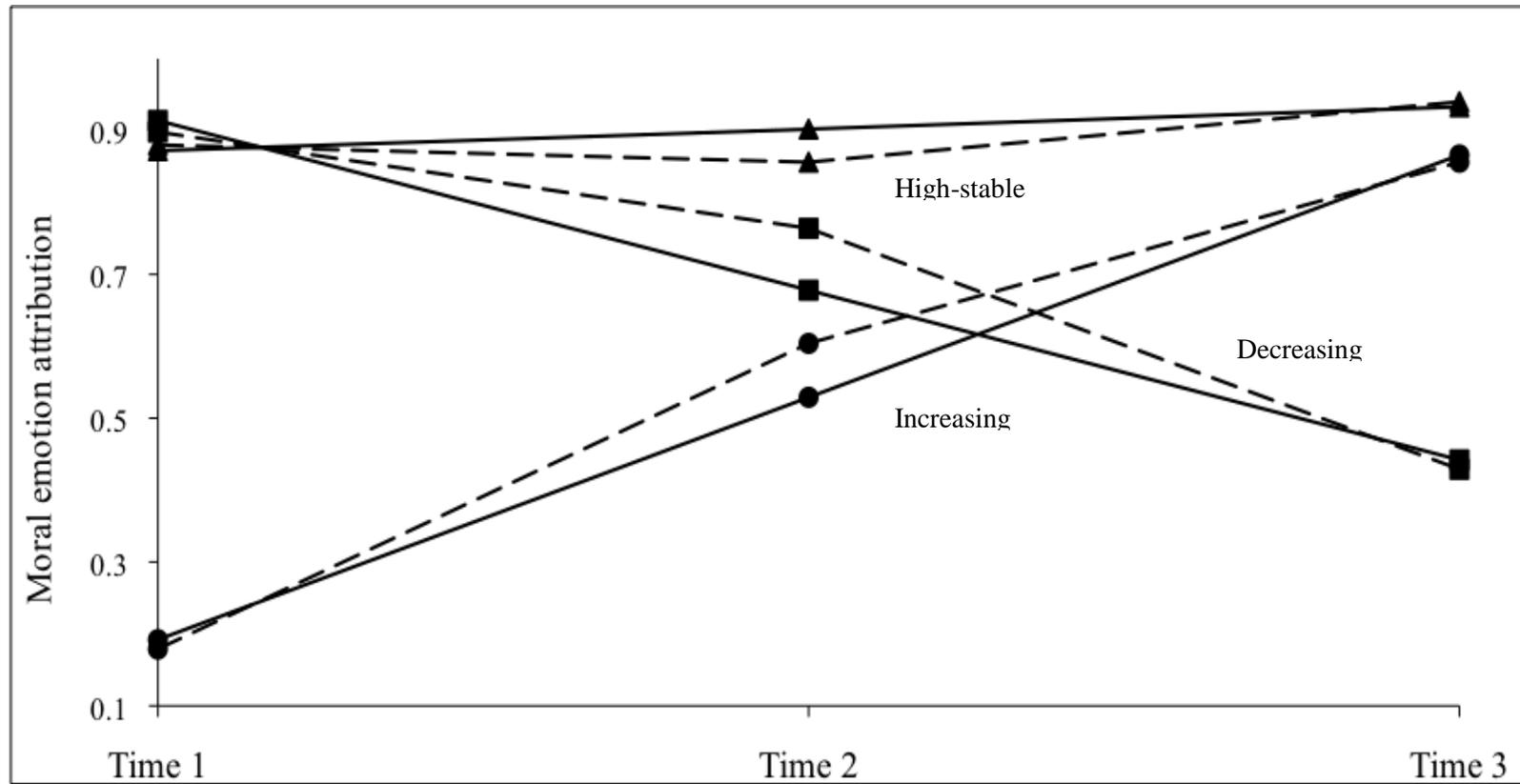


Figure 2.

Mean Class Trajectories (dashed lines) and Fitted Mean Trajectories (solid lines) for Moral Emotion Attribution.

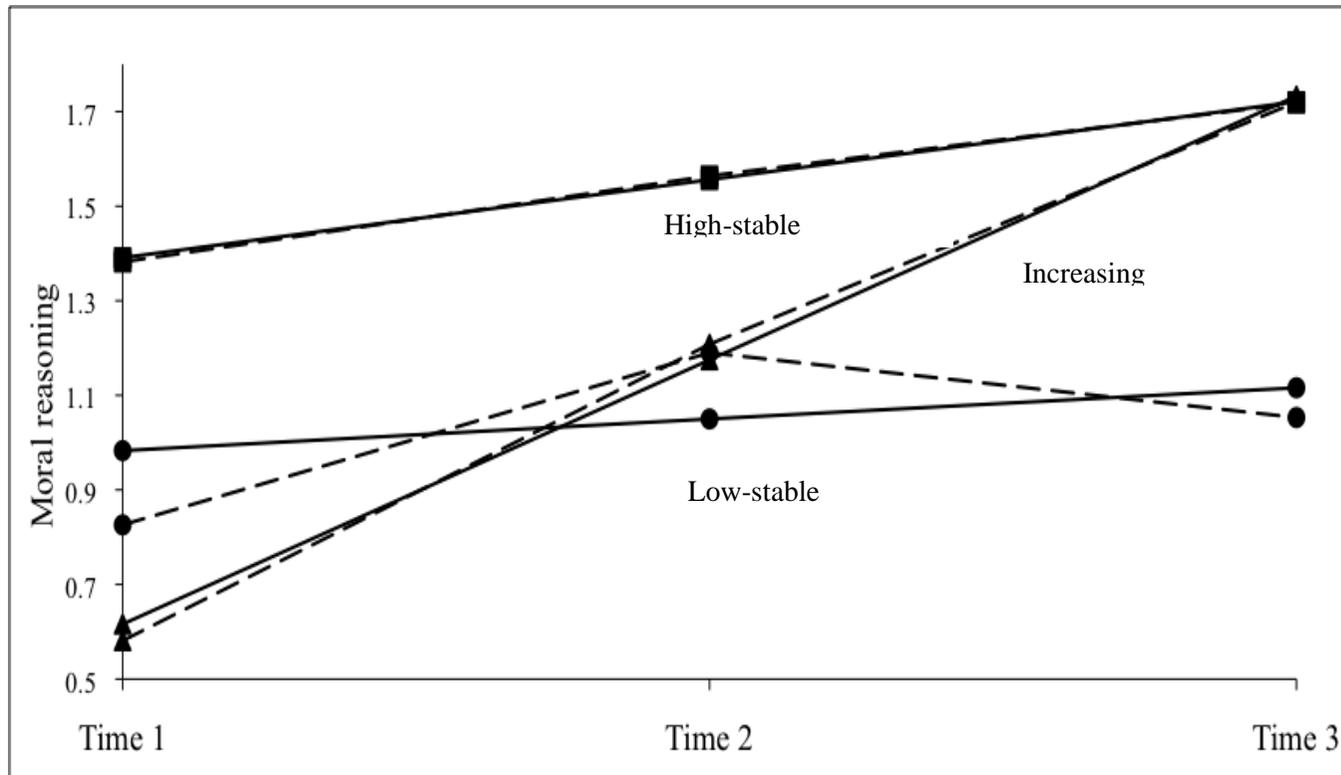


Figure 3.

Mean Class Trajectories (dashed lines) and Fitted Mean Trajectories (solid lines) for Moral Reasoning.

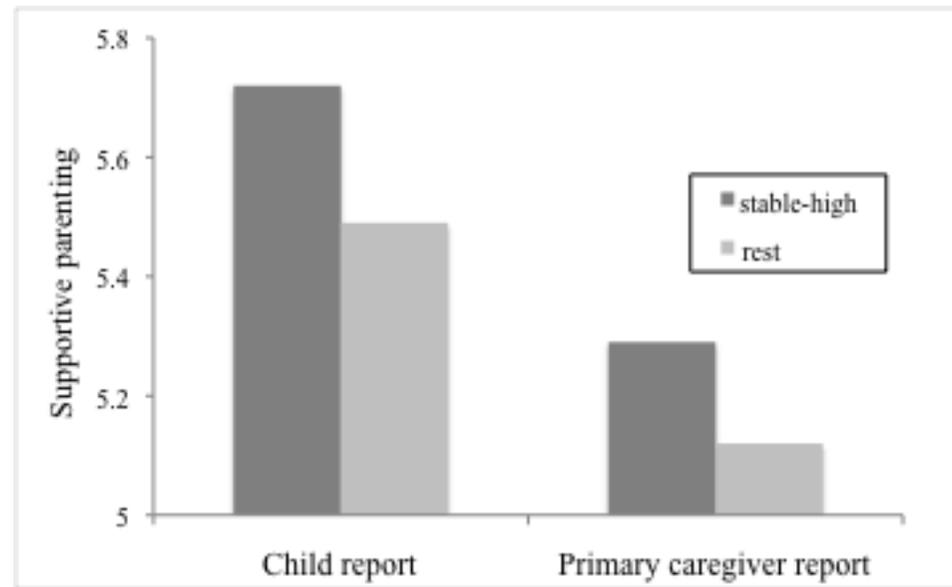


Figure 4.

Supportive Parenting by Combined Stable-High Group Membership (i.e., Sympathy, Moral Emotion Attribution, Moral Reasoning) vs. Rest.