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Children's Act Evaluation and Emotion Attribution Reasoning Regarding Different Moral Transgressions

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This study investigated patterns of reasoning regarding different types of moral transgressions and different measures of moral development in children 6–8 years of age (*N* = 130). The findings documented different patterns of reasoning for each measure and for transgressions including different moral principles. Children distinguished between their understanding of their emotional response to a transgression and the moral violation that has occurred, using much more moral reasoning when justifying act evaluations and much more self-interest reasoning when justifying emotion attributions. Children also differentiated between different types of moral violations—that is, transgressions including different moral principles. Stories about others' welfare elicited reasoning related to others' welfare, stories about fairness elicited reasoning related to equality/rights/fairness, and a multifaceted story elicited both types of moral reasoning.

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Research on moral judgments has documented the early emergence of moral principles such as fairness, justice, and rights (Mulvey, Hitti, Smetana, & Killen, 2016) and the complexity of children's moral reasoning in different contexts. For instance, research has shown that, as early as 6–8 years of age, children weigh concerns about group identity and group loyalty with the desire to adhere to moral principles (Rutland, Killen, & Abrams, 2010). Moreover, the field of moral development is robust, with research findings demonstrating sophistication in children's and adolescents' moral reasoning across contexts and in a range of different cultures (Killen & Smetana, 2015).

However, while moral reasoning is frequently measured, new research is critically needed that examines how children weigh different moral principles across a range of contexts. This involves testing moral judgments by using a range of moral scenarios—ones that are straightforward and ones that are complex—with one sample of children. The current study is novel in that it tests, in concert, children's moral reasoning patterns when the children respond to different moral measures and assesses these patterns in response to a range of different types of moral transgressions. The aim of the study was to bring two distinct, but prolific, moral development research paradigms—social domain theory (Smetana, 2006; Turiel, 1983) and moral motivation theory (Nunner-Winkler, 2009; Nunner-Winkler & Sodian, 1988)—together to assess moral judgments and reasoning from both perspectives.

Theoretical Framework

Moral judgments have been approached from a number of distinct research frameworks. New research that draws together these frameworks will provide novel insight into how the findings are complementary or distinct. Whereas moral judgment research is well established using both social domain theory (Smetana, 2006; Turiel, 1983) and moral motivation theory (Nunner-Winkler, 2009; Nunner-Winkler & Sodian, 1988), scant research has brought together these distinct approaches and drawn on the strengths of both traditions.

Social domain theory (Smetana, 2006; Turiel, 1983) demonstrates that children use three distinct domains when reasoning about social judgments: the *moral domain*, which involves issues of rights, justice, fairness, and others' welfare; the *social–conventional domain*, which involves customs, traditions, and deference to authority figures; and the *psychological domain*, which references personal choice, autonomy, and self-interest. Broadly, findings demonstrate that children perceive transgressions in the moral domain to be universally wrong, however violations that are social–conventional are judged to be context dependent and based on societal consent (Killen & Smetana, 2015). Research from a social domain tradition

typically assesses children's moral judgments by using measures such as *act evaluation*, where participants are asked to judge how okay or not okay an act is and provide social reasoning to justify their evaluation.

Moral motivation theory (Nunner-Winkler, 2009; Nunner-Winkler & Sodian, 1988) demonstrates that, whereas children understand moral principles from a very early age, they do not always act upon these moral principles. For instance, a child may choose not to abide by a moral principle because of competing personal desires, which can impede children's ability to apply moral principles. Thus, it is not enough to know a moral norm, children need to personally accept the validity of moral principles and thereby internalize them and develop moral motivation (Malti, Gummerum, Keller, & Buchmann, 2009). *Moral motivation* is the willingness to follow moral rules that a person understands to be valid, even if this entails personal costs or conflicts with one's own interests (Nunner-Winkler, 2007, 2009).

Research on moral motivation theory traditionally relies upon emotion attribution measures, where children identify either how they expect the transgressor would feel or how they would feel if they committed the same act (Malti & Ongley, 2014). Besides this categorical coding of anticipated emotions, in recent research, Likert-type scales have also been used to measure the valence and intensity of attributed emotions (Krettenauer, Campbell, & Hertz, 2013; Krettenauer & Eichler, 2006; Malti, Killen, & Gasser, 2012). Social reasoning is usually assessed, as well. The intensity and direction of attributed emotions indicate the subjective significance of moral principles (Nunner-Winkler, 1998, 2007). In this context, research has demonstrated that some children are *happy victimizers* and expect a moral transgressor (e.g., a child stealing candy) to be happy, even though they understand the validity of the moral rule (see Arsenio, 2014; Arsenio, Gold, & Adams, 2006). This is because, although they understand and even support the moral rule, they focus more on the personal gains than on the moral rule. Thus, research on moral motivations has clarified instances where children's emotion attributions may not align with their evaluation of the act itself.

An Integrated Approach: Social Domain Theory and Moral Motivation

Whereas these two research traditions—social domain theory and moral motivation theory—have often been distinct, some research has been conducted that draws together the measures used in both traditions (Malti et al., 2012; Malti, Strohmeier, & Killen, 2015). What is still needed, however, is a comprehensive examination of the reasoning patterns associated with both types of measures. Children's justifications for their moral judgments reveal

an understanding of the validity of moral norms (Malti, Gasser, & Buchmann, 2009) but may not necessarily correspond with the motives for moral actions 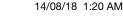(Sengsavang, Willemsen, & Krettenauer, 2015). Thus, new research is needed that compares children's patterns of reasoning across these types of measures in order to clarify what underlying constructs are at play when children provide these different evaluations. For instance, do act evaluation measures elicit more moral reasoning than do emotion attributions? What about reasoning about self-interest?

Furthermore, research is needed so as to understand whether similar patterns of reasoning emerge when testing moral development by using different moral transgressions. In prior research, the content of the scenarios used and the types of moral transgressions tested by using these scenarios have varied greatly. For instance, research has assessed moral transgressions including different moral principles such as others' welfare (physical and psychological harm), unfairness, denial of resources, social exclusion, property rights, allocation of resources, and civil rights (Killen & Smetana, 2014). Often, researchers include only stories testing one or a few of these moral principles, yet generalize their findings in terms of moral development broadly (Keller, Lourenço, Malti, & Saalbach, 2003; Killen, Mulvey, Richardson, Jampol, & Woodward, 2011).

However, some prior research has suggested that children provide different patterns of reasoning when different types of stories are assessed. Sengsavang et al. (2015), for example, documented differences in reasoning in stories about prosocial behavior versus antisocial behavior. In stories about engaging in prosocial actions, children referred mostly to other oriented reasons, while, in stories about abstaining from antisocial behavior, participants referenced self-interest, external standards, and rules. Other research has found that children's justifications differ depending on whether they are analyzing moral transgressions versus prosocial actions (Nunner-Winkler, 1999). For instance, Malti, Gasser, et al. (2009) found more moral reasoning in stories about stealing than in stories about not sharing. Research to date, therefore, demonstrates that different stories can lead to different reasoning patterns. Much of this prior research has (a) tested only one or two different principles with the same participants, (b) tested only one type of violation exemplifying each principle, or (c) contrasted prosocial actions from moral transgressions without examining nuances among types of moral transgressions. Thus, additional research is needed to clarify these patterns because these initial examinations of variation in reasoning have typically compared only reasoning about a limited number of different types of transgressions or moral principles. Still needed is research that systematically tests children's

moral judgments across a range of moral transgressions, including different moral principles in concert.

Many aspects of morality have been measured in the field (e.g., moral identity, moral self, moral emotions, and moral judgments). The focus of the current study is on the development of moral judgments, emotion attributions, and moral reasoning. Many researchers studying moral development assess children's judgments by using either a dichotomous evaluation or a Likert-type evaluation (Killen & Smetana, 2014). Further, children are frequently asked to provide social reasoning to justify their evaluations (i.e., they are asked "Why?") (Killen & Smetana, 2014). However, what frequently varies across studies is the actual measure employed. For instance, researchers have asked children to provide a range of types of moral judgments, including act evaluations (Killen, Rutland, Abrams, Mulvey, & Hitti, 2013), severity ratings (Zelazo, Helwig, & Lau, 1996), punishment acceptability (Smetana et al., 2012), emotion attributions (Malti & Keller, 2009), and so on. New research is needed that compares children's patterns of responding across these types of measures in order to clarify children's underlying conceptions when they provide these different evaluations.

The Current Study

The current study focused on two assessments: *act evaluation*, drawing on social domain theory (Smetana, 2006), and *emotion attribution*, drawing on moral motivation theory (Nunner-Winkler, 2007, 2009). These two assessments were chosen because they reflect the core features of social domain theory and moral motivation. Participants in the current study ranged 6–8 years of age because during this developmental period children show an awareness of range of moral principles (Smetana, 2006) and because different patterns of moral judgments are, at times, noted during this developmental period. Further, extensive research documents moral judgments in the preschool years and adolescence with less concentration on the early school years. Yet, children's emotion attributions during the early school years is of particular interest because children frequently make positive emotion attributions when asked how actors who commit moral transgressions will feel after the transgression (around 6 years of age), and during this period they transition to making negative emotion attributions much more frequently (by about 8 years of age) (Nunner-Winkler & Sodian, 1988). While some research has documented age-related differences in this happy victimizer effect, other research has found greater continuity across this developmental period (Keller et al., 2003). Given the mixed prior findings on developmental

differences in judgments and reasoning, it was an open question whether there would be age-related differences in terms of reasoning.

Specifically, our goal was to investigate differences in reasoning so as to clarify patterns of reasoning displayed by children during this age period. For instance, the current study included scenarios that examined transgressions including moral principles of others' welfare, fairness, and also includes one mixed story that draws together both—others' welfare and fairness. Moreover, the current study assessed judgments and reasoning by using both act evaluation measures and emotion attribution measures. One aim was to examine differences in reasoning used across these types of measures. Prior research demonstrates that act evaluation focuses more on the moral principles that reflect why an act is wrong, whereas emotion attribution focuses more on the individual motivation behind it (Keller, 1996; Malti, Gasser, et al., 2009). Therefore, the current study aims to examine whether reasoning demonstrates similar patterns. Furthermore, the study was designed to compare children's moral reasoning across a range of different moral transgressions. We aimed to systematically compare children's moral reasoning elicited by transgressions including different moral principles, such as other's welfare and fairness.

Hypotheses

In terms of reasoning about act evaluation, we expected to find differences between transgressions that refer to different moral principles. Specifically, we expected transgressions that involve moral principles regarding fairness to elicit reasoning related to equality, rights, and fairness (H1) and stories that involve principles related to others' welfare to elicit reasoning related to others' welfare (H2). Additionally, we expected the mixed story would elicit reasoning about others' welfare, as well as about equality, rights, and fairness (H3). While this is a straightforward expectation, prior research has often not distinguished between different types of moral reasoning (instead grouping all types of moral reasoning under the same code) and has not compared proportional use of reasoning across stories with transgressions that include different moral principles.

In terms of emotion attribution following moral transgressions, we expected that participants who attributed positive emotions would rely on self-interest reasoning (H4), whereas those who attributed negative emotions would reference moral reasons (H5). This was based on prior research that has demonstrated that some children are *happy victimizers* and attribute positive emotions and reference individual motives and personal interests in their reasoning (Nunner-Winkler, 1998, 2007).

Finally, we expected differences in reasoning for act evaluation measures and emotion attribution measures because these two aspects represent different facets of children's emerging morality. As moral motivation theory (Nunner-Winkler, 2007) demonstrated, knowing moral principles and evaluating transgressions based on these principles is rather independent from emotion attributions in conjunction with these very same principles. Thus, justifications for the validity of moral norms do not necessarily correspond with justifications for attributed emotions following the violation of these same norms. Whereas children's reasoning about their act evaluations represents the moral knowledge they possess (Malti, Gasser, et al., 2009), the reasoning about their emotion attributions provides additional insight into their mental state regarding violations of these moral principles (Mulvey, Hitti, & Killen, 2013). Further, neuroscience research has demonstrated different patterns of emotional responses when moral principles are violated (Sommer et al., 2010). Specifically, we expected that self-interest reasoning would be used much more frequently for emotion attributions (H6) and that moral reasoning would be used much more frequently for act evaluations (H7). This is based on prior research that demonstrates that children rely on moral reasoning when making act evaluations (Killen & Smetana, 2015) and use more personal reasons when making emotion attributions (Arsenio, 2014; Nunner-Winkler & Sodian, 1988). Given that prior research has not documented gender-based differences in reasoning, we did not expect any differences based on participant gender.

Method

Participants

Children ($N = 130$, $M = 90.9$ months, $SD = 7.7$, range 71–106 months) from elementary schools from small and medium-sized cities in the southwest of Germany participated in the study. The sample included more boys ($n = 78$, 60%) than girls ($n = 52$, 40%). The sample was economically diverse and approximately one third of the children were from families with migrant backgrounds. Teachers and parents were informed by letter about the procedure and the objectives of the study. Informed parental consent was obtained for all participants.

Design and Procedure

A within-subjects design was used. All participants received all tasks in a randomized order. After a short warm-up conversation in order to familiarize participants with the interview situation, the interviewer introduced

a Likert-type smiley scale and asked a couple of question to familiarize participants with the 4-point Likert-type response format (1 = *very bad* to 4 = *very good*). Specifically, children were asked questions like "Which smiley would you choose if you felt a little happy"?" and "Which smiley shows someone who feels very bad?" until they had used different points on the scale. Subsequently, the main interview started. Participants were presented five prototypical moral transgression tasks: two fairness stories (theft and award without merit), two others' welfare stories (thirst and teasing), and one mixed story (bullying) that included aspects related to both others' welfare, as well as fairness. Interviews were conducted individually by trained research assistants in a quiet room either at school or at the child's home. The interviews lasted 15–45 min. Participants were presented with picture cards illustrating the stories, and interviewers referred to the images during the administration of the tasks. The names used in the stories matched the gender of the participant.

Tasks and Assessments: Moral Transgressions

All five moral transgression tasks had the same structure, and each described a situation in which a protagonist commits a moral transgression. Participants completed four measures for each story: (a) dichotomous act evaluation ("Is what the child did okay or not okay?"; ok/not ok), (b) justification for act evaluation (responses to "Why?"), (c) Likert-type emotion attribution to self as victimizer ("What about you? If you had done tha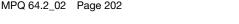t, how would you feel?" Likert-type: 1 = *very bad* to 4 = *very good*), and (d) justification for emotion attribution to self as victimizer (responses to "Why?"). These four types of measures were used in all stories.

For the emotion attribution analyses, a dichotomous variable was created by splitting the Likert-type emotion attribution into positive and negative evaluations (Likert-type responses of a and b were recoded as 0, and Likert-type responses of c and d were recoded as 1) in order to better understand patterns of reasoning for those who attribute positive versus negative emotions.

Participants completed two scenarios regarding fairness (theft and award without merit) and two scenarios concerning others' welfare (thirst and teasing) and one mixed concerning both—others' welfare, as well fairness (bullying). The theft story involved one child stealing another child's special candy. The award-without-merit story described two children building towers, and one of them unjustifiably winning a prize. The thirst story was about one child not sharing his drink with a thirsty child. These three stories were used in previous research by Nunner-Winkler (1998) and

Nunner-Winkler and Sodian (1988). The teasing story described one child being teased in the school yard, and the bullying story involved children bullying another child by taking away his shoes and leading him into an embarrassing situation. These two stories were previously used by Gasser and Keller (2009). These stories were carefully chosen so that they varied not only in terms of the moral principle that was tested, but also in terms of whether the act was straightforward or prototypic. For instance, the stealing story is a very clear, straightforward moral transgression, whereas the award story is more complex but also tests the moral principle of unfairness. Similarly, the teasing story is clearly prototypic, whereas the thirst story is more nuanced. Including both stories that were straightforward, as well as those that were more complex, enabled us to test with greater certainty whether differences in reasoning generalize across different types of stories testing the same moral principles. See Table 1 for a summary of the scenarios and see the appendix for the exact wording of the stories.

Coding and Reliability

Participants' justifications were coded with coding categories used in the previous research (Killen & Stangor, 2001; Smetana et al., 2012), as well developed from the interviews themselves resulting in four categories: (a) equality, rights, and fairness, (b) others' welfare, (c) rules and sanctions, and (d) self-interest (see Table 2). The coding system included three domains, based on social domain theory (Smetana, 2006): moral, social conventional, and psychological.

All justifications were coded by the first author and approximately 25% of the interviews were coded by a second researcher for inter-rater reliability (Cohen's $k = .89$). Disagreements were discussed until an agreement was reached. Justifications were coded as 1 = *full use of the category*;

Table 1. Summary of the scenarios

Story	Moral transgression	Moral principle
Teasing	Picking on another child	Others' welfare
Thirst	Not sharing with a thirsty child	Others' welfare
Award without merit	Not sharing an unfairly awarded prize with the wronged child	Fairness
Theft	Stealing candy from another child	Fairness
Bullying	Hiding another child's property and thus leading the child into an embarrassing situation	Fairness and others' welfare

Table 2. Coding system

Domain	Category	Example
Moral	Equality/rights/fairness	*[I]t is not fair to get all the rewards*
	Others' welfare	*[T]hat would hurt him*
Social conventional	Rules/sanctions	*[B]ecause it's a rule at school;because you could get in trouble*
Psychological	Self-interest	*[B]ecause I love candy*

.5 = *partial use with one other code*; .33 = *partial use with two other codes*; and 0 = *no use of the category*, and analyses were conducted on proportional use of different types of reasoning.

Results

Data Analyses

Analyses of variance (ANOVAs) and repeated-measures ANOVAs were used to test hypotheses related to differences in children's reasoning by story type and measure. Since preliminary statistical tests did not reveal any significant differences based on age or gender, both variables were dropped from all analyses.

Act Evaluation

Descriptive statistics. All participants (N = 130) evaluated all stories as wrong when completing the dichotomous act evaluation question. Therefore, all analyses involving reasoning about act evaluation reference reasoning about why the act was wrong.

Act evaluation reasoning. In order to test the hypothesis that participants will use different reasoning when evaluating the different types of stories, a 4 (reasoning: *equality/rights/fairness*, *others' welfare*, *rules and sanctions*, and *self-interest*) ×5 (story: *theft*, *award without merit*, *thirst*, *teasing*, and *bullying*) repeated-measures ANOVA was conducted.

We expected that, in stories about fairness, participants' reasoning should concern equality, rights, and fairness (H1), whereas, in stories about others' welfare, reasoning should primarily concern others' welfare (H2). In the mixed story, we expected that there would be reasoning from both categories (H3). We did not expect reasoning about self-interest or rules and sanctions to be used frequently for justifying act evaluations for any story. As expected, a main effect of reasoning was found, $F(3, 1935) = 344.74$, $p < .001$, $\eta_p^2 = .35$, which revealed that participants used more

reasoning about equality, rights, and fairness ($M = 0.46$, $SD = 0.46$) than others' welfare ($M = 0.39$, $SD = 0.45$) when justifying their act evaluations across all stories. Further, they used self-interest reasoning ($M = 0.02$, $SD = 0.14$) and reasoning about rules and sanctions infrequently ($M = 0.06$, $SD = 0.20$). Pairwise comparisons revealed that all groups differed at $p < .001$, except for equality, rights, and fairness versus others' welfare, which differed at $p = .027$. As expected, there was a significant interaction between reasoning and story, $F(12, 1935) = 11,574$, $p < .001$, $\eta_p^2 = .42$. Confirming our hypotheses, for all five stories, there were significant differences in the use of reasoning (see Table 3).

Fairness stories. As expected, in stories about fairness, children justified their evaluation primarily with arguments related to equality, rights, and fairness. Namely, in the theft story, three quarters of the children ($M = 0.76$, $SD = 0.37$) referenced equality, rights and fairness. Pairwise comparisons revealed that participants used more reasoning about equality, rights, and fairness than any other code (all ps $< .001$) and less self-interest reasoning than any other code (versus fairness and rules and sanctions, ps $< .001$; and versus welfare, $p = .002$).

Likewise, in the award without merit story, almost all children ($M = 0.96$, $SD = 0.15$) referred to equality, rights, and fairness when justifying their evaluations. Pairwise comparisons revealed that participants used more equality, rights, and fairness reasoning than any other code (all ps $< .001$).

Table 3. Proportional use of reasoning for act evaluation

Story (principle)	Equality/rights/ fairness M (SD)	Others' welfare M (SD)	Rules and sanctions M (SD)	Self-interest M (SD)
Teasing (others' welfare)	0.07 (0.22)[o, y, z]	0.70 (0.40)[o, p, q, ◊, ♯]	0.13 (0.27)[p, r]	0.04 (0.17)[q, r]
Thirst (others' welfare)	0.13 (0.30)[i, m, x]	0.63 (0.46)[i, k, l, □, ▼]	0.00 (0.00)[k, m, n]	0.06 (0.21)[l, n]
Award without merit (fairness)	0.96 (0.15)[g, h, i, z, ✿, ▲]	0.03 (0.12)[g, □, ▼, ♦]	0.00 (0.00)[h]	0.00 (0.00)[i]
Theft (fairness)	0.76 (0.37)[a, b, c, d, x, y, ▲]	0.12 (0.27)[a, f, ◊, ♯]	0.09 (0.25)[b, e]	0.00 (0.04)[c, d, e, f]
Bullying (mixed)	0.37 (0.43)[u, v]	0.47 (0.45)[s, t]	0.09 (0.27)[s, u, w]	0.02 (0.15)[t, v, w]

a, b, c, d, e, g, h, i, j, k, l, o, p, q, r, s, t, u, v, x, y, z, ↑, □, ▼, ◊, ♯ $p < .001$.

f, w $p = .002$.

m $p = .001$.

n $p = .006$.

♦ $p = .045$.

Others' welfare stories. Further, as expected, in stories about other's welfare, children justified their evaluation primarily with arguments related to other's welfare. Namely, in the thirst story, participants used more reasoning about others' welfare ($M = 0.63$, $SD = 0.46$) than any other type of reasoning, all ps <.001. Moreover, participants used less reasoning about rules and sanctions than equality, rights, and fairness ($p = .001$) and self-interest ($p = .006$).

Similarly, for the teasing story, participants used significantly more reasoning about other's welfare ($M = 0.70$, $SD = 0.40$) than any other type of reasoning (all ps <.001). Moreover, participants used more reasoning about rules and sanctions than reasoning about self-interest ($p <.001$).

Mixed story. As expected in the mixed story (bullying), participants used more reasoning about others' welfare ($M = 0.47$, $SD = 0.45$) and equality, rights, and fairness ($M = 0.37$, $SD = 0.43$) than either of the other types of reasoning (all ps <.001). Moreover, participants used more reasoning about rules and sanctions than about self-interest ($p = .002$).

Reasoning across stories. Furthermore, as expected, equality, rights, and fairness reasoning was more used in stories referring to fairness (H1), and others' welfare reasoning was used more often in stories referring to others' welfare (H2). For both types of reasoning, there were significant differences in the use across stories. As expected, in the two stories referring to fairness (theft and award without merit), participants used more reasoning about equality, rights, and fairness than in stories related to others' welfare (teasing and thirst) (all ps <.001). Additionally, more reasoning about equality, rights, and fairness was used in the award-without-merit story than in the theft story ($p <.001$). Further, in the two stories referring to others' welfare (thirst and teasing), participants used significantly more others' welfare reasoning than in the stories referring to fairness (all ps <.001). Additionally, participants used more reasoning about others' welfare in the theft story than in the award-without-merit story ($p = .045$). All proportions of use of reasoning for act evaluation and the respective pairwise comparisons can be found in Table 3.

Emotion Attribution

Descriptive statistics. For each story, a proportion of the participants asserted that if they had committed the act that they would feel positive emotions (happy victimizers) (see Table 4).

Emotion attribution reasoning. In order to test our hypotheses that participants who expected that they would feel positive emotions if they committed the act would use self-interest reasons to justify their positive
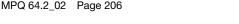
Table 4. Number and percentage of happy victimizers per story

Story (principle)	Number of happy victimizers	Percentage of happy victimizers
Teasing (others' welfare)	26	20.0
Thirst (others' welfare)	23	17.7
Award without merit (fairness)	76	58.5
Theft (fairness)	17	13.1
Bullying (mixed)	34	26.2

emotions (H4), while those who attributed negative emotions would reference moral reasons (H5), a 2 (emotion attribution: positive and negative) ×4 (reasoning: equality/rights/fairness, others' welfare, rules/sanctions, and self-interest) ANOVA with repeated measures on the last factor was conducted for each story.

Others' welfare stories. For the teasing story, there was a main effect for reasoning, $F(3, 384) = 21.21$, $p <.001$, $\eta_p^2 = .14$. Pairwise comparisons revealed that participants used more reasoning about others' welfare than about equality, rights, and fairness ($p = .001$) and more reasoning about other's welfare than about self-interest ($p <.001$) (see Table 5). Moreover, they used more reasoning about self-interest than about rules and sanctions ($p <.001$). Additionally, there was an interaction between emotion attribution and reasoning: $F(3, 384) = 33.88$, $p <.001$, $\eta_p^2 = .21$. As expected, participants who thought that they would feel positive emotions referenced primarily self-interest and thereby used more self-interest reasoning than did those who attributed negative emotions ($p <.001$). In contrast, those who thought that they would feel negative emotions were more likely to reference others' welfare ($p <.001$) and rules and sanctions ($p = .032$) than did those who thought that they would feel positive emotions.

For the thirst story, there was also main effect for reasoning: $F(3, 375) = 32.91$, $p <.001$, $\eta_p^2 = .21$. Pairwise comparisons revealed that participants used more reasoning about others' welfare and self-interest than about either equality, rights, and fairness or about rules and sanctions ($p = .020$ for others' welfare versus equality, rights, and fairness; $p = .022$ for others' welfare versus rules and sanctions; and $p <.001$ for comparisons including self-interest). There was also an interaction between emotion attribution and reasoning: $F(3, 375) = 41.86$, $p <.001$, $\eta_p^2 = .25$. This interaction revealed that participants who thought they would feel positive emotions cited self-interests more than did those who thought that they would feel negative emotions ($p <.001$). However, those who thought they would feel

Table 5. Proportional use of reasoning for emotion attribution

		Teasing (others' welfare)	Thirst (others' welfare)	Award without merit (fairness)	Theft (fairness)	Bullying (mixed)
Equality/rights/fairness	Negative emotion	0.04 (0.19)	0.12 (0.29)	0.92 (0.21)[r]	0.38 (0.45)[x]	0.35 (0.44)◊
M (SD)	Positive emotion	0.00 (0.00)	0.04 (0.20)	0.11 (0.23)[r]	0.06 (0.16)[x]	0.02 (0.17)◊
	Total	0.03 (0.17)[a]	0.10 (0.27)[g, i]	0.40 (0.45)[m, n, o]	0.34 (0.62)[l]	0.27 (0.41)[z]
Others' welfare	Negative emotion	0.45 (0.47)[e]	0.50 (0.47)[l]	0.05 (0.15)	0.38 (0.45)[w]	0.28 (0.41)✿, [r], ▲
M (SD)	Positive emotion	0.00 (0.00)[e]	0.07 (0.23)[l]	0.03 (0.12)	0.00 (0.00)[w]	0.02 (0.17)✿
	Total	0.36 (0.00)[o, b]	0.42 (0.46)[g, h]	0.04 (0.13)[m, p]	0.33 (0.45)[u]	0.22 (0.38)
Rules/sanctions	Negative emotion	0.20 (0.37)[f]	0.01 (0.10)	0.00 (0.00)	0.14 (0.32)	0.19 (0.37)
M (SD)	Positive emotion	0.04 (0.14)[f]	0.00 (0.00)	0.03 (0.17)	0.12 (0.28)	0.07 (0.25)
	Total	0.17 (0.34)[c]	0.01 (0.08)[h, i]	0.02 (0.14)[n, q]	0.13 (0.32)[y]	0.16 (0.35)□
Self-interest	Negative emotion	0.13 (0.30)[d]	0.12 (0.28)[k]	0.01 (0.07)[s]	0.04 (0.15)[y]	0.06 (0.22)▼
M (SD)	Positive emotion	0.77 (0.41)[d]	0.85 (0.35)[k]	0.80 (0.32)[s]	0.82 (0.35)[y]	0.84 (0.36)▼
	Total	0.26 (0.41)[b, c]	0.25 (0.41)[j, i]	0.51 (0.46)[o, p, q]	0.14 (0.32)[t, u, v]	0.26 (0.43)[z, u], ▲, □

[b, c, d, e, k, l, m, n, p, q, r, s, v, w, y, z], ◊, ▲, □, ▼ $p < .001$.

[a, u], ✿ $p = .001$.

[f] $p = .032$.

[g] $p = .020$.

[h] $p = .022$.

[o] $p = .034$.

[t] $p = .009$.

[x] $p = .004$.

negative emotions relied more on reasoning about others' welfare than did those who thought they would feel positive emotions ($p <.001$).

Fairness stories. For the award-without-merit story, there was a main effect for reasoning: $F(3, 351) = 140.59$, $p <.001$, $\eta_p^2 = .55$. Pairwise comparisons revealed that participants used more reasoning related to equality, rights, and fairness than any other form of reasoning (all ps $<.001$, except for self-interest, which differed at $p = .045$). They also used more self-interest reasoning than reasoning about either other's welfare and rules and sanctions (ps $<.001$). As with the other stories, there was also an interaction between reasoning and emotion attribution: $F(3, 351) = 231.27$, $p <.001$, $\eta_p^2 = .66$. Pairwise comparisons revealed that participants used more reasoning about equality, rights, and fairness if they thought they would have negative feelings ($p <.001$) and more reasoning about self-interest if they thought they would have positive feelings ($p <.001$).

For the theft story, there was a main effect for reasoning: $F(3, 384) = 6.16$, $p = .001$, $\eta_p^2 = .05$. This revealed that participants used more reasoning about self-interest than about any other code. Further, there was an interaction between emotion attribution and reasoning: $F(3, 384) = 25.67$, $p <.001$, $\eta_p^2 = .17$. This revealed that participants used more reasoning about others' welfare ($p <.001$) and equality, rights, and fairness if they thought that they would feel negative emotions ($p = .004$) and more reasoning about self-interest if they thought that they would feel positive emotions ($p <.001$).

Mixed. For the mixed story (bullying), there was main effect for reasoning: $F(3, 381) = 13.95$, $p <.001$, $\eta_p^2 = .10$. Pairwise comparisons revealed that participants used more reasoning about self-interest than any other type of reasoning (ps $<.001$). Additionally, there was an interaction between reasoning and emotion attribution: $F(3, 381) = 42.57$, $p <.001$, $\eta_p^2 = .25$. This interaction demonstrated that participants who thought they would feel negative emotions referenced others' welfare ($p = .001$) and equality, rights, and fairness ($p <.001$) more than did participants who thought they would feel positive emotions. Furthermore, those who thought that participants would feel positive emotions were much more likely to reference self-interest than were those who thought they would feel negative emotions ($p <.001$).

Reasoning Across Measures

The next analysis examined differences in types of reasoning across measures (act evaluation and emotion attribution). Therefore, a summary score was created for moral reasoning by summing the coding categories equality,

rights, and fairness and others' welfare. We included self-interest reasoning and moral reasoning in the analyses, but omitted rules and sanctions because of the low frequency with which this type of reasoning was used across both measures. In order to test our hypotheses that there would be differences in the use of self-interest reasoning (H6) and in the use of moral reasoning (H7) between act evaluation and emotion attribution a 4 (reasoning: moral reasoning about act evaluation, self-interest reasoning about act evaluation, moral reasoning about emotion attribution, and self-interest reasoning about emotion attribution) ×5 (story: theft award without merit, thirst, teasing, and bullying) repeated-measures ANOVA was conducted.

There was an overall effect for reasoning: $F(3, 1893) = 521.07$, $p < .001$, $\eta_p^2 = .45$. Pairwise comparisons revealed that all groups differed at $p < .001$. Of particular interest, this revealed that participants used more moral reasoning for the act evaluation justifications ($M = 0.84$, $SD = 0.33$) than for the emotion attribution justifications ($M = 0.50$, $SD = 0.47$) ($p < .001$). Further, they used more self-interest reasoning for the emotion attribution justifications ($M = 0.28$, $SD = 0.42$) than for the act evaluation justifications ($M = 0.025$, $SD = 0.14$) ($p < .001$).

As expected, there was also a significant interaction between reasoning and measure: $F(12, 1893) = 9.08$, $p < .001$, $\eta_p^2 = .05$. This revealed significant differences in the use of self-interest reasoning as well as in the use

Table 6. Proportional use of self-interest and moral reasoning in act evaluation vs. emotion attribution

	Act evaluation M (SD)	Emotion attribution M (SD)
Self-interest reasoning		
Teasing (others' welfare)	0.04 (0.17)[a]	0.26 (0.42)[a]
Thirst (others' welfare)	0.06 (0.22)[b]	0.25 (0.41)[b]
Award without merit (fairness)	0.00 (0.00)[c]	0.51 (0.46)[c]
Theft (fairness)	0.00 (0.04)[d]	0.14 (0.32)[d]
Bullying (mixed)	0.02 (0.15)[e]	0.26 (0.43)[e]
Moral reasoning		
Teasing (others' welfare)	0.77 (0.37)[f]	0.39 (0.47)[f]
Thirst (others' welfare)	0.75 (0.42)[g]	0.52 (0.47)[g]
Award without merit (fairness)	0.99 (0.09)[h]	0.44 (0.46)[h]
Theft (fairness)	0.88 (0.29)[i]	0.68 (0.44)[i]
Bullying (mixed)	0.84 (0.35)[j]	0.48 (0.49)[j]

[a, b, c, d, e, f, g, h, i, j]$p < .001$.

of moral reasoning between the two types of measures. Namely, in all five stories, we found significantly more references to self-interest in the reasoning about emotion attribution than in the reasoning about act evaluation and significantly more moral reasons in the reasoning about act evaluation than in the reasoning about emotion attribution (all ps <.001) (see Table 6).

Discussion

Our novel results indicate very different patterns of reasoning for each measure and for transgressions including different moral principles providing a robust pattern of results for moral cognition in the early elementary-school years. Specifically, participants overwhelmingly referenced moral reasons when justifying act evaluations. Further, moral reasons were used much less frequently for emotion attributions. Interestingly, for emotion attributions, self-interest reasoning was much more common than for act evaluations. However, as revealed by the analyses that compare reasoning about emotion attribution for those participants who attribute positive emotions and those who attribute negative emotions, self-interest reasoning was driven by those participants who make positive attributions. Therefore, the current study revealed that children weigh different concerns when making different types of moral judgments. This suggests that future research should use multiple types of measures to ensure that a complete picture of children's moral reasoning is obtained and suggests the importance of looking both to how participants differentiate their judgments by domain, drawing on social domain theory (Smetana, 2006), and to variation in their moral motivations (Nunner-Winkler, 2007, 2009). The current findings advance our understanding of moral reasoning by demonstrating that children differentiate between different types of moral violations and that they distinguish between their understanding of their emotional response to a transgression and their evaluation of the acceptability of the moral violation that has occurred.

Thus, the findings demonstrate sophistication in children's reasoning. Participants recognized all of the acts as wrong and used moral reasons when justifying this. Further, although the majority also expected they would feel bad if they committed these violations (and justified this emotion by using moral reasons), some children expected they would feel positive emotions. These findings align with prior research on *happy victimizers* (Arsenio & Lover, 1995; Keller et al., 2003; Krettenauer, Malti, & Sokol, 2008; Malti & Krettenauer, 2013) and reinforce the idea that this pattern of feeling positive emotions when you commit a transgression is not based on a lack of understanding that the act was wrong, but rather
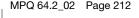
is driven by personal motives (Arsenio & Lover, 1995; Krettenauer et al., 2008). Interestingly, while prior research has demonstrated age-related differences in the happy-victimizer phenomenon (Krettenauer et al., 2008), we documented no differences in reasoning by age group. What our findings suggest is that at 6–8 years of age, children are keenly aware of a range of different moral principles and are demonstrating complex forms of social cognition and differentiating their responses, even though some children during this developmental period still expect they would feel positive emotions following these transgressions. Further, our focus in the current study was on reasoning in particular. In line with prior research that has not identified age-related differences in reasoning (Malti & Keller, 2009; Nunner-Winkler, 1998), our results also demonstrate consistency across the ages of 6–8 years in reasoning patterns. Since this is a fairly narrow age range, future research should aim to replicate the current study with older and younger participants in order to test for age differences among children with a larger age range.

As predicted, the findings documented different patterns of reasoning for different types of moral violations. The stories centered on others' welfare elicited reasoning related to others' welfare; the stories centered on fairness elicited reasoning related to equality, rights, and fairness; and the mixed story elicited both types of moral reasoning. This demonstrates that researchers should test multiple types of moral transgressions when assessing moral development because they do not all function in the same manner. Further, it confirms predictions based on social domain theory that suggest that complex stories that draw on multiple moral principles will elicit multiple forms of reasoning or reasoning from more than one domain (Richardson, Mulvey, & Killen, 2012). What the current findings document is that mixed stories can also elicit more than one type of reasoning from within the same domain. In this instance, although participants still used primarily moral reasoning, they employed both moral reasoning related to others' welfare, as well as moral reasoning related to equality, rights, and fairness.

The current study is the one of the first to draw together distinct research trajectories in moral development. This is important because there has been recent debate among researchers on the role of emotions in moral judgments (Arsenio et al., 2006; Decety, Michalska, & Kinzler, 2012; Turiel, 2006). What our findings demonstrate is that evaluations of act acceptability are justified in different ways than are emotional reactions to hypothetical moral violations. Also, although children do use more self-interest reasoning when making emotion attributions than when evaluating act acceptability, children are consistent in recognizing a key role for moral reasons across these types of judgments.
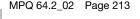
Further, the findings are novel in demonstrating the importance of distinguishing different types of moral reasoning and testing multiple moral principles within the same study. However, still more work needs to be done in this area. Specifically, our focus was on moral transgressions, but future research should continue to examine different patterns of reasoning for distinct prosocial actions, as well (Sengsavang et al., 2015). Additionally, future research should attend to whether reasoning patterns differ depending on the group membership of the actors involved in the violations. For instance, prior research demonstrates that intergroup moral judgments may be more challenging for children to make than are moral judgments involving peers with whom one shares group membership (Killen & Smetana, 2015; Mulvey, 2016; Rhodes & Chalik, 2013). Finally, future research should extend this research approach to a wider developmental period, especially given that some research indicates that moral development may resemble a U-shaped curve (Nucci & Turiel, 2009).

Despite these limitations, the current findings suggest that children do show sophisticated and logical patterns of reasoning in relation to both act evaluation and emotion attribution, but that these different measures touch different aspects of moral development. Therefore, future research should include multiple types of measures in concert when examining moral judgments. Additionally, as parents and educators foster children's moral development, they should consider talking with children both about acceptability of acts and about the emotions the children might feel during moral violations in order to aid children in thinking through different dimensions of moral evaluations. Further, and importantly, the current findings reflect the importance of talking with children about the reasons why they might think an act is okay or not okay or might feel a particular way after committing a violation. Finally, these findings reveal that not all moral transgressions are treated in the same way—rather, different patterns of reasoning are associated with different types of transgressions. Therefore, parents and educators should ensure that their conversations about moral transgressions are context specific and that they attend to the nuances of the situation. For instance, they might reference the precise type of harm inflicted or rights infringed upon when discussing transgressions. Further, parents and educators can use moral violations as a learning opportunity to discuss similarities and differences between different types of social transgressions.

In summary, the present findings reveal differential use of reasoning depending both on (a) the type of measure employed and (b) the moral nature of the violation that occurs. Further, the findings bridge social domain theory (Smetana, 2006; Turiel, 1983) and moral motivation theory

(Nunner-Winkler, 2007; Nunner-Winkler & Sodian, 1988), revealing that the theories are not in conflict, but rather complement each other as they each center on different aspects of children's moral development, supporting research by Arsenio (2014). Thus, the findings demonstrate the complexity of moral development in childhood and highlight the important ways in which reasoning differs across measures and situations.

Appendix

Teasing (Others' Welfare)

This is Nina/Dario. During recess, he is being teased by Anna/Max and her/his friend. Nina/Dario cannot defend herself/himself and does a hard job not to cry.

Is what Max/Anna did okay or not okay? Why?

Anna/Max also knows that it is not okay to tease other children, but she/he does so, though.

What about you? If you had done that, how would you feel? Why?

Thirst (Others' Welfare)

Andrea/David is on a field trip in the zoo. It is very hot. When they are having a break, she/he takes out her/his bottle and drinks. There comes Melanie/Tim and asks, "Andrea/David, I am so thirsty, can I have some of your drink?" Andrea/David denies the request and finishes her/his drink herself/himself.

Is what Andrea/David did okay or not okay? Why?

Andrea/David also knows that it was not okay to do so, but she/he has done so, though.
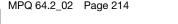
What about you? If you had done that, how would you feel? Why?

Award Without Merit (Fairness)

These are Kathrin/Klaus and Eva/Eric: They are playing who can build the highest tower. This is Marion/Martin: She/he is the referee. Do you know what a referee is? (Let the child explain. If she/he doesn't know, explain.)

Now both towers are very high. Can you count the blocks for me? They are exactly the same height. But Marion/Martin, the referee says, "Eva/Eric, your tower is higher. You get the award!" and she/he gives Eva/Eric a little bag with marbles. Kathrin/Klaus says, "Hey, my tower is as high as your tower!" But Eva/Eric declares, "I got the prize. I'll keep all of the marbles for myself!"

Is what Eva/Eric did okay or not okay? Why?

Eva/Eric also knows that it was not okay to take the marbles and keep them all for herself/himself.

What about you? If you had done that, how would you feel? Why?

Theft (Fairness)

These are Friederike/Florian and Tanja/Thomas. They are in the cloakroom of their school, hanging up their coats. Tanja/Thomas takes out a small bag with candy and says, "Look, what I got from my aunt yesterday." Friederike/Florian really likes this kind of candy, too. Later this morning, Friederike/Florian is going to the restrooms alone. He spots Tanja's/Thomas' coat where she/he left the candy. Friederike/Florian approaches the coat, takes the candy out, and puts it into his own pocket. Nobody was around who could have seen her/him. Later, when the children go out to play Tanja/Thomas notices that his candy is gone. Now he is sad.

Is what Friederike/Florian did okay or not okay? Why?

Friederike/Florian also knows that it was not okay to take the candy, but she/he took it, though.

What about you? If you had taken the candy, how would you feel? Why?

Bullying (Mixed)

The children are in the locker room changing for gym class. This is Lara/Michael: She/he is just putting on her/his gym shoes. These are Jasmin/Fabio and her/his friend. They do not like Lara/Michael and are talking about how they could tease her/him best. When Lara/Michael has left for the gym, they hide her/his outdoor shoes on a high shelf so that Lara/Michael cannot reach them.

Is what Jasmin/Fabio and her/his friend did okay or not okay? Why?

They also know that it was not okay, but they did so, though.

After gym class, when everybody has changed Lara/Michael is still looking for his shoes. After a long search she/he spots them on the shelf but cannot get them down. So, she/he gives in and returns to class in her gym shoes. The teacher is yelling at him because he is late and still wearing his gym shoes. Lara/Michael is so hysterical that she/he cannot explain herself/himself.

What about you? If it would have been you hid the shoes, how would you feel? Why?
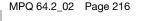
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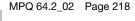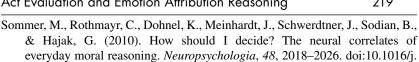
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