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Developmental Changes and Individual Differences in Young Children's Moral Judgments

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Developmental trajectories and individual differences in 70 American middle-income 2½- to 4-year olds' moral judgments were examined 3 times across 1 year using latent growth modeling. At Wave 1, children distinguished hypothetical moral from conventional transgressions on all criteria, but only older preschoolers did so when rating deserved punishment. Children's understanding of moral transgressions as wrong independent of authority grew over time. Greater surgency and effortful control were both associated with a better understanding of moral generalizability. Children higher in effortful control also grew more slowly in understanding that moral rules are not alterable and that moral transgressions are wrong independent of rules. Girls demonstrated sharper increases across time than boys in understanding the nonalterability of moral rules.

Developing an understanding of social and moral rules is a critical task of early development and the focus of a great deal of research. Observational studies, including children's nonverbal reactions to their siblings' rule violations (Dunn, 2006; Dunn & Munn, 1985, 1987), have shown that children's awareness of moral and social rules develops between the 1st and 2nd years of life and that both mothers and peers provide more verbal feedback in response to 3-year olds' than 2-year olds' moral transgressions pertaining to unfairness and harm to others (Smetana, 1989). Analyses of preschoolers' narratives of previous moral conflicts demonstrate that young children focus on physical harm in narrating experiences as both victims and perpetrators of transgressions (Wainryb, Brehl, & Matwin, 2005). In addition to observational and narrative studies, young children's moral and social understanding also has been assessed more directly using interviews focusing on hypothetical rules and transgressions.

Drawing on social domain theory (Smetana, 2006; Turiel, 1983, 2006), researchers have examined whether young children treat moral issues (defined as prescriptive judgments of right and wrong pertaining to others' welfare, fairness, and rights) as distinct from social conventions, or the shared and consensually agreed-on norms and uniformities that coordinate social interactions in various social contexts. This has been accomplished by examining children's judgments along a set of formal criteria drawn from definitions of the domains (Smetana, 2006, 2011; Turiel, 1983, 2002, 2006). Moral rules have been defined as unalterable, whereas conventional rules may change. In addition, moral transgressions are hypothesized to be generalizably wrong (i.e., wrong across different contexts, such as in different countries or at home vs. in school), whereas the acceptability of conventional transgressions is contextually variable. Also, moral transgressions are wrong not just because they are prohibited but because the acts affect others' welfare and rights; therefore, they are defined as wrong independent of rules or authority dictates, whereas social conventions are wrong only if rules or authorities say so. Although not a formal criterion for differentiating the domains, moral transgressions typically are seen as more serious and

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deserving of punishment than are conventional transgressions. The claim that children distinguish between moral and conventional issues along these criteria and ratings has received robust support in numerous studies conducted in the United States and elsewhere (reviewed in Smetana, 2006, 2011; Turiel, 2006).

Young children's evaluations of moral and conventional events have been studied using simple verbal measures and hypothetical, straightforward situations considered to be prototypical of the domains (e.g., hitting as a moral issue and eating ice cream with fingers as a conventional issue). These studies have shown that rudimentary distinctions between moral and conventional rules and transgressions are evident as early as 3 years of age and more consistently by age 4 (Smetana, 2006). Young children's moral evaluations are limited, however. Preschool children are not yet able to coordinate moral evaluations with an understanding of intentions, actions, and outcomes (Wainryb & Brehl, 2006). They also are not able to coordinate moral and conventional concepts in hypothetical, multifaceted situations where components of the two domains overlap or conflict (Crane & Tisak, 1995), unless the competing concerns are made highly salient (Killen, Pisacane, Lee-Kim, & Ardila-Rey, 2001).

Although a number of studies have examined preschool children's ability to distinguish moral and conventional rules and transgressions, surprisingly few studies have focused on the early development of moral judgments regarding hypothetical prototypical situations. In a cross-sectional study, Smetana and Braeges (1990) examined age differences among primarily European American, middle-income children ranging from 2 years 2 months to 3½ years of age. The youngest children did not distinguish between moral and conventional transgressions on any of the dimensions studied. By 3 years of age, children judged moral transgressions to be more generalizably wrong than conventional transgressions, and by 3½, children judged moral events to be more independent of rules and authority and more serious than conventional transgressions. Moreover, distinctions between moral and conventional issues were found at earlier ages among children with better language skills.

These findings imply that in addition to their inability to coordinate morality with other concerns, preschoolers' understanding of moral issues continues to develop throughout the preschool years. Although the aforementioned study suggests that children understand generalizability at earlier ages than other criteria, similar findings were not observed when 3½- to 4½-year-olds were compared to 4½- to 5½-year-olds (Smetana, 1981). Binomial tests performed on responses to individual items indicated that younger children did not judge any of the moral items to be generalizably wrong at significant frequencies, but older preschoolers did. Furthermore, children at both ages judged most hypothetical moral items as wrong in the absence of rules. This suggests that children's understanding of different moral criteria develops at different rates, but the ordering of their acquisition remains unclear.

Except for these studies, there have been few attempts to chart age-related changes in young children's moral judgments or factors influencing their development. No studies that we know of have examined their developmental trajectories. Recent advances in statistical techniques, such as latent growth modeling (LGM), are ideally suited to studying early moral judgment development. These methods allow researchers to examine developmental pathways as well as individual differences associated with change over time. Using LGM, we examined growth in American middle-income preschoolers' understanding of different moral criterion judgments across 1 year.

Furthermore, research on young children's ability to distinguish morality from social conventions has focused primarily on normative trends. A few studies have investigated individual differences in distinguishing the domains, but these studies have focused mainly on atypical populations, such as children with autism (Blair, 1996), children displaying psychopathic tendencies (Blair, 1997), abused and neglected children (Smetana et al., 1999), or rejected children (Sanderson & Siegal, 1988). Although several studies have examined individual differences in young children's domain-related moral judgments and attributions (Arsenio, Gold, & Adams, 2006; Jagers, Bingham, & Hans, 1996; Siegal & Storey, 1985), this research has focused primarily on the role of experiential factors (such as the role of day-care experience). In contrast, research on the development of empathy (Valiente et al., 2004) and conscience (Kochanska, 1997) has focused extensively on the influence of temperament. To our knowledge, however, research from the social domain theory framework has not examined the influence of stable individual characteristics such as temperament on early moral judgment development. According to social domain theory (Smetana, 2006; Turiel, 1983), children's moral development emerges through social interactions, including

children's own direct experiences of the consequences of their actions for others' welfare and rights as well as responses from others highlighting those effects. Individual differences in temperament may influence children's social interactions and their experiences with moral rules and transgressions. In the present study, we examined individual differences in temperament as a source of variability in children's developing understanding of various moral criteria.

The Present Study

Our study thus had three aims. First, we sought to replicate previous findings demonstrating that young children distinguish between moral and conventional transgressions using different criteria. We employed methods well established in earlier research to examine children's initial judgments of familiar hypothetical moral versus conventional transgressions. Replicating age distinctions examined in prior studies (Smetana, 1981; Smetana & Braeges, 1990), we compared younger (2½- to 3½-year-olds) and older (3½- to 4½-year-olds) children's ability to distinguish moral and conventional transgressions along different judgment criteria.

The second aim of the present research was to examine the trajectories of change in young children's moral understanding. We investigated whether children's understanding of different moral criteria, including rule and authority independence, generalizability, and rule nonalterability as well as ratings of deserved punishment, increased across time during the preschool years. Growth in children's evaluations of each criterion or rating was examined separately, as the prior research led us to expect that initial levels of understanding as well as rates of change may vary for different criteria. We expected that with age, children would be more likely to treat moral rules as not alterable and moral transgressions as generalizably wrong and wrong regardless of rules and authority dictates. Given the inconsistencies in prior research regarding early acquisition, we did not test specific hypotheses about which criteria would be understood at young ages.

The third aim of the study was to examine individual differences in moral development according to children's age, sex, and temperament. Surgency, or extraversion, which includes more active, positive, and impulsive behavior, has been linked to an approach system that influences children's positive affect, pleasurable interest, and rapid latencies to approach objects (Rothbart & Bates, 2006). Children who are higher in surgency are relatively fearless and thus may be more active, rambunctious, and more likely to get into trouble. Consistent with this notion, one study showed that infants whose parents rated them as higher in surgency received more rules for their behavior at 14 months of age than infants low on this temperamental pattern (Smetana, Kochanska, & Chuang, 2000). Thus, more surgent children may initiate more moral transgressions and receive more rules and reprimands in response to moral misbehavior from parents and other caregivers. Consistent with this speculation, 6- and 7-year olds who are rated higher in surgency exhibit more aggressive behavior (Rothbart, Ahadi, Hershey, & Fisher, 2001). We hypothesized that compared to their less surgent peers, more surgent children's greater ''approach'' tendencies may result in earlier acquisition of moral concepts (although the association in middle childhood with more aggressive behavior suggests that this understanding may not always translate into inhibiting moral misbehavior). That is, we hypothesized that greater surgency may be associated with a better initial understanding of these different moral judgment dimensions (with slower subsequent growth over time).

In contrast, effortful control, including inhibitory control, attention focusing, and perceptual sensitivity, is a precursor of executive control and is part of an inhibitive system of behavior (Rothbart et al., 2001). Typically, effortful control is negatively related to surgency (Rothbart & Bates, 2006). Rothbart and Bates (2006) note that surgency can be viewed as an ''accelerator'' toward action, whereas effortful control can be seen as the ''brakes.'' Higher levels of effortful control have been strongly linked with toddlers' more fearful, less joyous behavior (Kochanska & Knaack, 2003) and better social competence (Spinrad et al., 2007). It also has been associated with greater empathy, guilt, and shame in normally developing 6- and 7-year-olds (Rothbart et al., 2001) and with lower levels of conduct problems and externalizing behavior in childhood and adolescence (Caspi, Henry, McGee, Moffitt, & Silva, 1995; Eisenberg et al., 1996; Kochanska & Knaack, 2003; Spinrad et al., 2007). We speculated that children who are higher in effortful control may be better able to focus their attention on the types of messages from both parents and victims of moral transgressions that help them process and understand why moral transgressions are wrong. Therefore, we hypothesized that children who are higher in effortful

control also may acquire moral concepts at earlier ages than other children.

Children were between 2.5 and 4.3 years of age when they entered the present study. Therefore, we hypothesized that their initial moral judgments would differ as a function of age. More specifically, we hypothesized that older children would view moral transgressions as more generalizably wrong, more independent on authority and rules, and less alterable than would their younger peers.

We also examined whether children's gender was associated with differences in initial judgments or developmental change. Previous studies of early moral and conventional judgments have yielded few consistent sex differences (see Smetana, 2006 for a review). However, there is some evidence from an observational study of 1- to 3-year-old toddlers' moral and conventional transgressions in the home (Smetana, 1989) that parents respond differentially to boys' and girls' moral transgressions in ways that may facilitate girls' more accelerated moral judgment development. Sequential analysis indicated that mothers were more likely to respond to their young daughters' than sons' moral violations with statements focusing on the intrinsic consequences of the acts for others' rights or welfare. In past research, these types of responses (often referred to as inductive reasoning) have been associated with greater moral judgment development (Dunn, 2006; Hoffman, 1975; Hoffman & Saltzstein, 1967; Zahn-Waxler, Radke-Yarrow, & King, 1979). Similarly, Smetana (1989) found that mothers responded more to their same-age sons' than daughters' moral transgressions with statements focused primarily on social control. This more power assertive style of response provides little information to the victim or transgressor about why these acts are wrong and thus may be less likely to facilitate moral understanding (Hoffman, 1975; Hoffman & Saltzstein, 1967; Zahn-Waxler et al., 1979). These socialization differences led use to hypothesize that moral understanding may grow more slowly over time among boys than girls.

Method

Sample

The initial sample for this study included 70 children (33 boys and 37 girls) who ranged in age from 2.44 to 4.27 years of age (M = 3.39, SD = .48) at the first interview (only 4 children were over the age of 4). They were drawn from four day-care centers serving middle-socioeconomic-status families located in a suburb of a Northeastern city. The sample was 83% European American, 5% Asian, 1% African American, and 9% Other (primarily biracial). Nearly all (91%) of the children lived in two-parent homes, with the rest living in single-parent homes or in other family configurations. All parents were college educated.

At the second wave of the study, which occurred 6 months later, all 70 participants were reinterviewed (M = 3.85 years, SD = .48). Nearly all interviews took place at participants' day-care centers, but 2 participants no longer attended the same centers and were interviewed at their homes. At the third wave, which occurred 1 year after the initial interviews, 65 children (M = 4.34 years, SD = .48) were reinterviewed. Three of the children had moved out of town, and 2 others could not be located. This resulted in an overall retention rate of 93%. Attrition analyses conducted to compare children who dropped out with those who were retained showed that there were no differences between the two groups in family background (mothers' or fathers' education or family marital status), children's age, or moral judgments at Wave 1.

Measures

Social rules interview. The stimulus items pertained to events that were common and familiar to children at these ages and were drawn from items used in previous research with preschool children (Nucci & Turiel, 1978; Smetana, 1981; Smetana & Braeges, 1990). The hypothetical stimuli consisted of eight $8\frac{1}{2} \times 11$ in. colored drawings depicting familiar moral and conventional transgressions. The moral transgressions were: hitting another child, shoving another child, teasing another child, and calling another child names. The conventional items were: taking out a toy during snack time, wearing a bathing suit to day care, standing during story time, and a boy wearing nail polish. We employed male and female versions of the stimuli, except for the one gender-specific item (a boy wearing nail polish), and the sex of the transgressor was matched to the child. The items were presented in varying order.

For each stimulus item, children were asked the following questions in a fixed order: (1) ''Is it OK or not OK for the child to ____?'' assessing *permissibility* (not examined here); (2) ''What if the teacher didn't see him/her ____? Would it be OK to ____ then?'' assessing *authority independence*; (3) ''What if no one ever told him/her it was wrong to ____.

Would it be OK to ____ then?'' assessing *rule independence*; (4) ''What if all the teachers got together and said that kids could ____. Would it be ok then?'' assessing *rule nonalterability*; (5) ''Now let's think about a different situation. Let's say the child was at home or another school. Would it be OK or not OK to ____ at home?'' assessing *generalizability*, and (6) ''Should [the transgressor] get in trouble?'' and if yes, ''A little bit or a lot,'' assessing *deserved punishment*.

All social judgment questions except those pertaining to deserved punishment were scored categorically, with nonmoral responses (e.g., that the act is contingent on authority or rules, alterable, or contextually relative) assigned a score of 0. Moral responses (e.g., that the act is wrong independent of rules and authority, unalterable, or generalizably wrong) were assigned a score of 1. Responses regarding deserved punishment were scored on a 3-point scale ranging from 1 (*no punishment*) to 3 (*a lot*). For each question, mean responses by domain were obtained for each participant.

Child temperament To assess children's temperament, parents completed the very short form of the Children's Behavior Questionnaire (CBQ; Putnam & Rothbart, 2006). The CBQ is appropriate for caregivers of children ages 3–8 years of age. The very short form asks parents to rate their child on 36 items, which are rated on a 7-point scale ranging from 1 (*extremely untrue*) to 7 (*extremely true*). These ratings are used to form 12-item scales of Surgency, Effortful Control, and Negative Affect (αs = .82, .77, .63, respectively). Negative affect was not examined here. As expected, surgency and effortful control were moderately but negatively associated, $r(67) = -.38$, $p < .01$.

Procedures

Parents of children between the ages of 2.5 and 4.3 at each of the four day-care centers were invited to have their children participate in the study. Letters describing the study and parent permission forms were given to all eligible families. Consenting parents completed and returned the CBQs to their day care. Children were interviewed at a quiet corner or in a separate room at their day-care centers. The Social Rules Interview was divided into two parts and administered in separate sessions (a few of the youngest children required more than two sessions to complete the interviews). The sessions always began with a warm-up task involving reading a book together.

Results

Descriptive Analyses

Table 1 shows the correlations among the variables assessed at each wave of the study. As can be seen, the predictors (age, sex, and temperament) showed no to modest correlations with the different moral judgment criteria. The moral judgments were moderately to highly correlated at Wave 1, moderately correlated at Wave 2, and low to moderately correlated at Wave 3. Likewise, the different moral judgment criteria showed moderate stability from one wave to the next.

Moral-Conventional Differences

To address the first study aim, the Wave 1 sample was divided into two age groups of 35 children each. The younger group ranged in age from 2.44 to 3.40 years (16 males, 19 females), and the older group ranged in age from 3.41 to 4.27 years (17 males, 18 females). The two groups did not differ significantly according to gender.

We conducted separate 2 (age group) $\times$ 2 (gender) $\times$ 2 (domain) repeated measures analyses of variance (ANOVAs) with domain as the repeated measure on each of the criteria or ratings examined here. All judgments showed significant main effects for domain (means, standard deviations, and F values for these judgments are in Table 2). Across both ages, moral transgressions were found to be more generalizably wrong, more independent of rules and authority, less alterable, and more deserving of punishment than were conventional transgressions.

However, the domain main effect for deserved punishment was qualified by a significant Domain $\times$ Age Group interaction, $F(1, 66) = 5.17$, $p < .05$, $\eta^2_p = .07$. Post hoc analyses revealed that younger and older preschoolers did not differ in their ratings of deserved punishment for moral transgressions (Ms = 2.53, 2.52, SDs = .50, .56, respectively), but older children treated conventional transgressions as less deserving of punishment than did their younger peers (Ms = 2.47, 2.14, SDs = .57, .72), $F(1, 68) = 4.68$, $p < .05$. Thus, younger children did not differentiate between the amount of punishment deserved for moral versus conventional transgressions, but older children did, $p < .01$.

There were no significant effects for children's gender, either as a main effect or in interaction with other variables.

Table 1
Correlations Among Predictors and Moral Criteria Across Time

	M	*SD*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. W1 Age	3.39	.48	−.09	−.04	−.13	.29*	.09	.04	.04	.11	.08	.06	.18	−.04	−.18	.10	.01	.13	−.22†	.04
2. Sex (female)	.53	.50	1.00	−.15	.17	−.24*	−.10	.00	−.21†	−.04	−.15	.17	.18	.07	−.28*	.04	−.02	.04	.15	−.12
3. Surgency	4.41	.84		1.00	−.38**	.05	.12	.20†	.04	.17	.09	.23†	.25*	.24*	.24*	.08	.03	−.02	.27*	.30*
4. Effortful Con	5.32	.70			1.00	−.04	−.00	.15	.22†	.13	−.01	−.22†	−.14	−.17	−.21†	−.28*	−.22†	−.19	−.12	−.15
5. W1 Auth Ind	.80	.27				1.00	.66**	.57**	.56**	.12	.33**	.39**	. 40**	.02	.01	.38**	.15	.14	−.24†	.06
6. W1 Rule Ind	.87	.25					1.00	.68**	.47**	.11	.44**	.45**	.41**	−.03	.13	.33**	.03	.04	−.16	−.00
7. W1 General	.81	.30						1.00	.65**	.19	.41**	.42**	.44**	.06	.00	.22†	−.05	−.01	.02	.01
8. W1 NonAlt	.69	.38							1.00	.10	.22†	.29*	.27*	.23†	−.08	.17	−.11	−.05	.02	−.04
9. W1 Punish	2.52	.53								1.00	−.03	.13	.02	.02	.25*	−.05	−.08	−.25*	−.06	.37**
10. W2 Auth Ind	.86	.26									1.00	.58**	.58**	.26*	.02	.47**	.30*	.34**	.23†	.01
11. W2 Rule Ind	.86	.26										1.00	.50**	.44*	.22†	.42**	.31*	.17	.27*	.05
12. W2 General	.86	.22											1.00	.27*	.26*	.47**	.24†	.35**	.17	.22†
13. W2 NonAlt	.65	.36												1.00	.05	.17	.04	.09	.33*	−.06
14. W2 Punish	2.50	.62													1.00	.05	.30*	−.00	.24*	.46**
15. W3 Auth Ind	.92	.21														1.00	.55**	.43**	.18	.19
16. W3 Rule Ind	.90	.20															1.00	.55*	.34**	.10
17. W3 General	.87	.25																1.00	.24†	.10
18. W3 NonAlt	.63	.41																	1.00	.10
19. W3 Punish	2.52	.52																		1.00

Note. Correlations are on transformed values. W1, W2, W3 = Waves 1, 2, and 3, respectively; Effortful Con = effortful control; Auth Ind = authority independence; Rule Ind = rule independence; General = generalizability; NonAlt = nonalterability; Punish = deserved punishment.
†$p < .10$. *$p < .05$. **$p < .01$.

Table 2
Means, Standard Deviations, and F*-Values for Moral and Conventional Judgments at Wave 1*

	Younger preschoolers		Older preschoolers		Mean		Domain main effect
Criteria	M	C	M	C	M	C	$F(1, 66)$, η^2_p
Authority independence	.73 (.31)	.60 (.38)	.88 (.20)	.68 (.37)	.80 (.27)	.64 (.36)	26.77**, .29
Rule independence	.85 (.27)	.72 (.31)	.88 (.23)	.75 (.34)	.87 (.25)	.74 (.33)	20.03**, .23
Rule not alterable	.65 (.38)	.45 (.34)	.73 (.38)	.52 (.41)	.69 (.38)	.49 (.37)	43.68**, .40
Generalizability	.79 (.32)	.56 (.31)	.84 (.28)	.61 (.38)	.81 (.30)	.59 (.35)	41.04**, .38
Deserved punishment	2.53 (.50)	2.47 (.57)	2.52 (.56)	2.14 (.72)	2.52 (.53)	2.30 (.67)	8.96**, .12

Note. M = moral; C = conventional.
**$p < .01$.

Modeling the Growth of Criterion Moral Judgments

The second aim of the study was to examine the growth trajectories of different moral criteria across 1 year. We conducted LGM analyses using Amos 6.0 statistical software. A detailed description of LGM can be found elsewhere (Duncan, Duncan, & Stryker, 2006; Duncan, Duncan, Stryker, Li, & Alpert, 1999). As in other types of structural equation modeling, LGMs are evaluated using fit statistics. In the present study, this included the chi-square goodness of fit, the comparative fit index (CFI), and the root mean square error of approximation (RMSEA; see Bentler, 1990; Browne & Cudeck, 1993, for a discussion of these indices). Nonsignificant chi-square statistics, CFIs greater than .90, and RMSEAs less than .05 indicate good model fit; RMSEAs between .05 and .08 indicate acceptable model fit. Nonnormal indicators can bias estimates of the model fit, model parameters, and standard errors in SEM analyses. Because several of the variables used in our analyses were either skewed or kurtotic or both, we applied transformations (square root or inverse, as appropriate) to

reduce their nonnormality. The transformations resulted in normal distributions, making LGM appropriate for these data.

To test our study hypotheses and in keeping with standard practice (Kline, 2005), we conducted the analyses in two steps. First, a baseline or unconditional model without predictors was estimated for each rating or criterion judgment to examine the intercept (the initial level of the judgment) and the slope (the change in the judgment over time). Given that data appeared to be missing at random, the LGMs were fit with full maximum likelihood estimation of missing data. If the unconditional model for each judgment identified significant variability in either the intercept or the slope, we then estimated a conditional growth curve model including predictors for the significant intercept or slope factors.

Generalizability. The unconditional LGM of generalizability judgments fit the data well, $\chi^2(1) = .06$, $p = .81$, CFI = 1.00, RMSEA = .00. Although children's judgments of generalizability increased across the three waves of the study, the magnitude of the increase was not statistically significant (see Table 3 for the coefficients and standard errors for the unconditional LGMs). The covariance between the intercept and slope was significant and negative, indicating that children who had a better understanding of generalizability at Wave 1 grew more slowly in these judgments across time. Results also indicated significant interindividual differences in both initial generalizability judgments and in changes in these judgments across time.

Given the significant variances in both the intercept and slope, we examined a subsequent LGM model with children's age, sex, surgency, and effortful control as predictors. The data fit the model well, $\chi^2(5) = 4.07$, $p = .81$, CFI = 1.00, RMSEA = .00, and are shown in Figure 1. As can be seen, both surgency and effortful control were significant in predicting initial levels of generalizability (the intercept) and change over time (the slope). Consistent with our hypotheses, young children who were rated by parents as higher in surgency or in effortful control showed a better understanding when initially interviewed that moral transgressions are generalizably wrong (and then grew less in this understanding across time). Age and sex were not significant in this analysis.

Authority independence. The unconditional LGM of authority independence fit the data well, $\chi^2(1) = .01$, $p = .95$, CFI = 1.00, RMSEA = .00. Children's understanding of authority independence increased significantly across time (see Table 3). Interindividual differences in the intercept and slope were not statistically significant, although the variance in the intercept approached significance ($p = .085$). Given the lack of significant variability, a conditional model with predictors was not estimated.

Rule independence. Estimates for the initial LGM of rule independence showed a good fit to the data, $\chi^2(1) = .55$, $p = .31$, CFI = 1.00, RMSEA = .00. Although children's understanding of rule independence increased across time, the magnitude of the change was not statistically significant (see Table 3). However, there were significant interindividual differences in both initial levels of rule independence and in changes in these judgments across time. Therefore, we examined a LGM with predictors.

Table 3
Parameter Estimates (Unstandardized) and Standard Errors for the Unconditional Latent Growth Modeling of Moral Criteria

	Generalizability		Authority independence		Rule independence		Nonalterability		Deserved punishment	
	Coeff	*SE*	Coeff	*SE*	Coeff	*SE*	Coeff	*SE*	Coeff	*SE*
Mean intercept	.89**	.02	.87**	.02	.91**	.02	.81**	.02	.75**	.03
Mean slope	.02	.01	.04**	.01	.01	.01	−.01	.02	.00	.02
Intercept variance	.02**	.01	.01†	.01	.02**	.01	.02†	.01	.03**	.01
Slope variance	.01**	.00	.00	.00	.01**	.00	.01†	.01	.01	.01
Covariance	−.01**	.00	−.00	.00	−.01**	.003	−.01	.01	−.01	.01
Error variance										
Wave 1	.01*	.01	.02**	.01	.00	.01	.02*	.01	.03**	.00
Wave 2	.01**	.00	.02**	.00	.02**	.00	.03*	.01	.03**	.00
Wave 3	.01	.00	.01	.00	.00	.00	.02†	.01	.03**	.00

Note. Coeff = coefficient.
†$p < .10$. *$p < .05$. **$p < .01$.

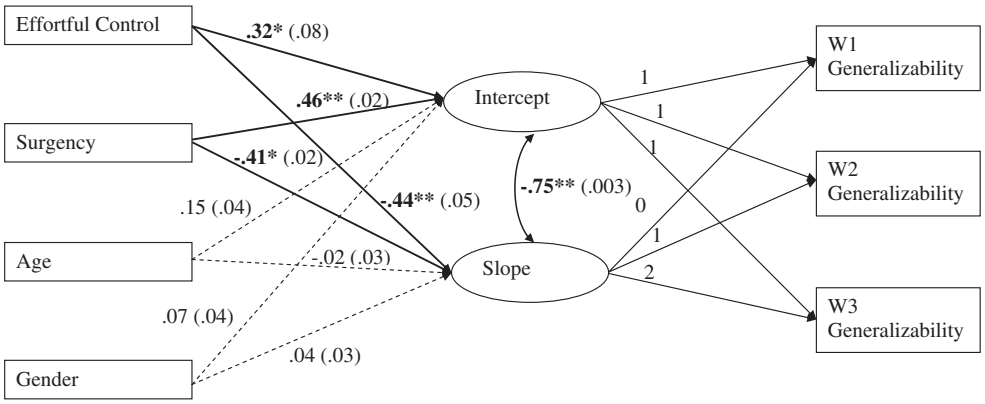

Figure 1. Final growth model with significant predictors of children's judgments of generalizablity across 1 year.
Note. Coefficients are standardized. Significant paths are depicted with bold lines, and significant estimates are bolded. Model fit was good, $\chi^2(5) = 4.07$, $p = .81$, comparative fit index = 1.00, root mean square error of approximation = 0.00.
*$p < .05$. **$p < .01$.

The model with predictors was a good fit to the data, $\chi^2(5) = 5.99$, $p = .431$, CFI = .96, RMSEA = .04. None of the variables significantly predicted the intercept, but effortful control approached significance in predicting the slope, $\beta = -.27$, $p < .077$. We tested a trimmed model to determine if it provided a better fit than the model with all predictors. This model fit the data well, $\chi^2(12) = 8.84$, $p = .72$, CFI = 1.00, RMSEA = .00 (see Figure 2). Although not a significantly better fit, this more parsimonious model indicated that effortful control significantly predicted the slope, $\beta = -.18$, $p < .05$. Contrary to hypotheses, children whose parents rated them as higher in effortful control grew more slowly in their understanding that moral transgressions are wrong independent of rules.

Rule nonalterability. Estimates for the unconditional LGM of rule nonalterability demonstrated a good fit to the data, $\chi^2(1) = .47$, $p = .49$, CFI = 1.00, RMSEA = .00. Judgments that moral rules are not alterable did not increase significantly across time, but there were marginally significant interindividual differences in initial judgments ($p = .07$) and in changes across time in those judgments ($p = .05$).

We explored these trends by fitting a conditional LGM model with predictors of both the intercept and slope. The model provided a good fit to the data, $\chi^2(5) = 4.81$, $p = .44$, CFI = 1.00, RMSEA = .00. As hypothesized and as shown in Figure 3, girls demonstrated significantly greater increases across time than boys in their judgments that moral rules are not alterable. In addition, as in the model for rule independence, children whose parents rated them as higher in effortful control grew more slowly over time in their understanding that moral rules are not alterable.

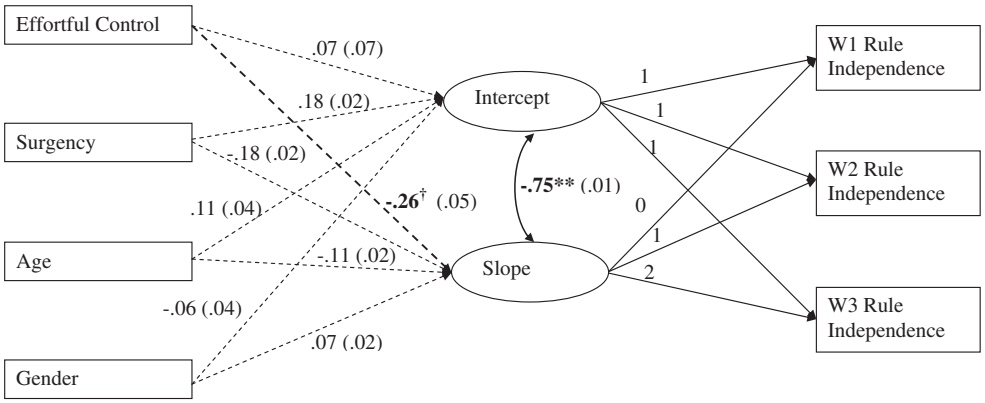

Figure 2. Final growth model with significant predictors of children's judgments of rule independence across 1 year.
Note. Coefficients are standardized. Significant paths are depicted with bold lines, and significant and marginally significant estimates are bolded. Model fit was good, $\chi^2(5) = 5.99$, $p = .31$, comparative fit index = 0.96, root mean square error of approximation = 0.04.
†$p < .10$. **$p < .01$.

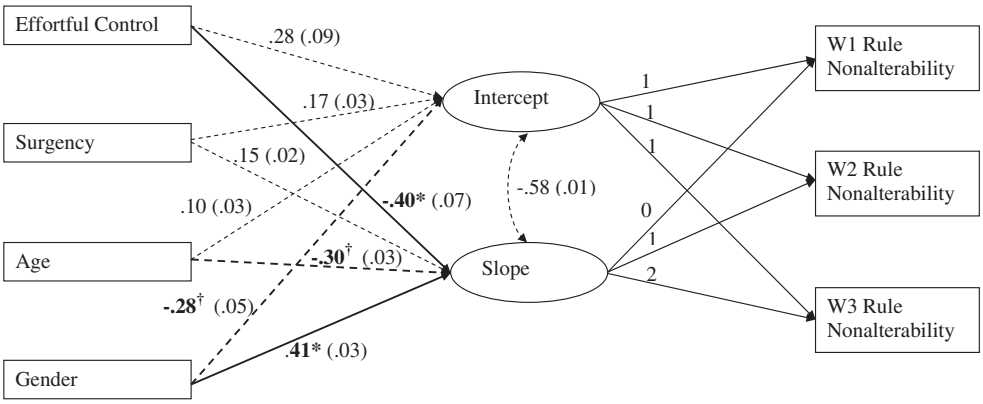

Figure 3. Final growth model with significant predictors of children's judgments of rule nonalterability across 1 year.
Note. Significant paths are depicted with bold lines, and significant and marginally significant estimates are bolded. Model fit was good, $\chi^2(5) = 4.81$, $p = .44$, comparative fit index = 1.00, root mean square error of approximation = 0.00.
$^{\dagger}p < .10$. $^{*}p < .05$.

Deserved punishment. An unconditional linear LGM of deserved punishment could not be estimated because growth in ratings of deserved punishment was nonlinear. Therefore, we used a latent basis LGM to estimate the nonlinear change trajectory (Ram & Grimm, 2007). To do this, we estimated a model with loadings at Wave 1 and Wave 3 constrained to 0 and 1, respectively, and omitted the loading for Wave 2. The error variances were constrained to be equal. The resulting model demonstrated an acceptable fit to the data, $\chi^2(10) = .15.28$, $p = .12$, CFI = .85, RMSEA = .07. Ratings of deserved punishment did not change significantly across time, nor was there significant individual variability in the slope. However, there were significant interindividual differences in the intercept.

Therefore, we ran an LGM model with only the intercept predicted. This model provided a good fit to the data, $\chi^2(4) = .67$, $p = .17$, CFI = 1.00, RMSEA = .00. As shown in Figure 4, children who were higher in surgency at Wave 1 rated moral transgressors as more deserving of punishment.

Discussion

Previous research from the social domain perspective has provided robust evidence that by age 4 (and often at slightly younger ages), preschool children treat hypothetical, prototypical moral transgressions as distinct from prototypical conventional transgressions along various dimensions that are hypothesized to define and differentiate the domains (Smetana, 2006, 2011; Turiel, 1983, 2006). Although several studies have examined age differences in preschool children's ability to differentiate the domains, previous research has not examined

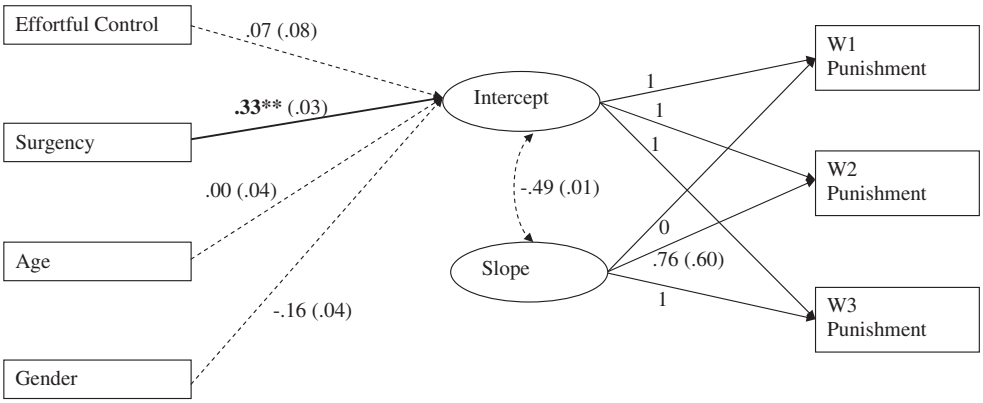

Figure 4. Final growth model with significant predictors of children's judgments of deserved punishment across 1 year.
Note. Significant paths are depicted with bold lines, and significant estimates are bolded. Model fit was acceptable, $\chi^2(10) = 15.28$, $p = .12$, comparative fit index = .85, root mean square error of approximation = 0.07.
$^{**}p < .01$.

developmental changes in young children's moral concepts or individual differences in their development. Therefore, this study makes a novel contribution to the literature by employing a longitudinal design to examine individual trajectories of change in young children's understanding of different moral criteria across 1 year and to investigate the influence of age, and sex, and the temperamental dimensions of surgency/extraversion and effortful control on their development.

Significant change across time was found only in young children's moral judgments of authority independence. Results indicated that across 1 year, 2½- to 4-year-olds grew in their understanding that moral transgressions are wrong regardless of authority dictates (''even if the teacher did not see the transgression''). Significant normative change over time in children's understanding of the other moral dimensions were not observed, but there were significant individual variations in how quickly children acquired an understanding of these different moral concepts as they grew older, and this variation was not simply due to age.

The temperamental dimensions of surgency/extraversion and effortful control predicted children's initial understanding of generalizability as well as the magnitude of change in their understanding of other moral criteria across 1 year. More specifically, consistent with the notion that surgency is an ''activator'' toward action (Rothbart & Bates, 2006), young children whose parents rated them higher in surgency/extraversion were more likely to have acquired an understanding that moral transgressions are generalizably wrong and more deserving of punishment when they were first interviewed; because they largely grasped these concepts, they then grew more slowly over time in their understanding of these dimensions.

Children high in surgency are exuberant, positive, interested in their social world, and sometimes impulsive; therefore, their greater tendency to approach may include greater involvement in everyday moral transgressions, like hitting, teasing, and taking other children's toys. This is supported by previous research, which has demonstrated that 14-month-olds whose parents rated them as higher in surgency receive more rules for their behavior (Smetana et al., 2000). The present finding, that more surgent children also rated moral transgressions as more deserving of punishment, is consistent with these earlier findings and may reflect greater experiences with (and hence greater parental responses to) moral transgressions. It is important to note, however, that moral transgressions like hitting and taking toys away from others are ubiquitous among young toddlers and do not necessarily signal a greater propensity toward deviance or later conduct problems. In future research, it might be useful to separate the impulsive component of surgency from the positive affect and pleasurable interest that is also part of this temperamental dimension. Whereas the former may be implicated more in the association between elementary school-aged children's surgency and aggression (Rothbart et al., 2001), the latter may be more closely tied to early moral judgment development.

Kochanska (1997) found that the effect of surgency on children's moral development is moderated by mothers' discipline practices. Although she focused on behavioral compliance rather than moral judgments as the focal measure of moral development, this research highlights the importance of considering the match between children's temperament and parents' parenting. Parental socialization may be more important in inducing compliance and shaping behavior than in acquiring early moral concepts. That is, children do not simply accept parents' rules and discipline; rather, they interpret and act on them according to their developing social understanding. Thus, parental injunctions and rules can be seen as providing one source of information to the child (along with direct experiences) about the nature of transgressions. Individual differences in temperament may influence how much and when these types of parental messages are needed as well as children's ability to attend to them (Grusec, Goodnow, & Kuczynski, 2000); complementarily, parents may be more effective when they provide domain-appropriate explanations.

The effects of effortful control on judgments of moral generalizability were similar to the findings obtained for surgency, even though these two temperamental dimensions were moderately and negatively associated here, as elsewhere (Rothbart & Bates, 2006). Children whose parents rated them higher in effortful control had a better understanding that moral transgressions are generalizably wrong at their initial interviews. These findings mirror Smetana and Braeges's (1990) results in suggesting that an understanding of the generalizable wrongness of moral transgressions may be acquired early in development. Thus, surgency and effortful control both may facilitate children's early understanding of moral generalizability, but in potentially different ways. The activity and impulsiveness that characterizes greater surgency may lead to more direct experiential involvement and

learning about the negative consequences of moral transgressions for others' rights and welfare, whereas children who are high in effortful control may engage in fewer moral transgressions. However, their greater attention-focusing abilities may help them understand the concept of generalizability through their observations of moral transgressions in multiple contexts. In addition, greater effortful control may help children attend to parental messages; thus, they may benefit more than other children from parents' inductive discipline. This speculation about different experiential pathways to acquiring an understanding of generalizability should be examined in future research.

Contrary to our hypotheses, children whose parents rated them higher in effortful control also grew more slowly over the year in their understanding that moral rules are not alterable and that moral transgressions are wrong whether or not there are rules prohibiting the behavior. This seems contrary to our previous hypothesis that observations of others' responses to transgressions help facilitate an understanding of generalizability. However, greater attention-focusing abilities may be less useful, at least at young ages, when it comes to understanding more abstract concepts like rules.

Effortful control clearly has positive implications for children's adjustment. Numerous studies have shown that children who are low on this temperamental dimension are more likely to develop conduct problems and externalizing behavior in childhood and adolescence (Caspi et al., 1995; Eisenberg et al., 1996; Kochanska & Knaack, 2003; Rothbart & Bates, 2006; Rothbart et al., 2001; Spinrad et al., 2007). Thus, effortful control is important both in helping children to acquire moral concepts and in inhibiting immoral behavior. In contrast, more surgent children may acquire an understanding of moral concepts through their direct experience of moral transgressions, but their impulsive temperament may make it more difficult for them to inhibit harmful or hurtful behavior.

Finally, our hypothesis that girls might show more accelerated growth in their moral understanding relative to boys was confirmed only for judgments of rule alterability. These findings are consistent with previous research demonstrating that European American middle-income mothers provide girls with more information about the intrinsic consequences of moral transgressions for others' rights and welfare than they do boys (Smetana, 1989) and that this may result in sex differences in how quickly children acquire an understanding of some dimensions of morality. Nevertheless, it is not clear why sex differences were found in judgments of rule alterability but not in other moral judgments, and this should be investigated in future research.

The results of our study suggest that a rudimentary understanding of morality, as assessed using different moral criteria, is evident during the preschool years. Furthermore, the young children in our study differentiated morality from social conventions on all of the criteria studied here, although age differences were observed in judgments of deserved punishment. Although children ranged in age from 2.5 to 4.3 years of age, they were, on average, 3.4 years of age when they entered the study. This is when children in other cross-sectional studies have been found to differentiate morality from social conventions (Smetana & Braeges, 1990). Therefore, we would expect to see more differentiation of the concepts studied here as children grow older.

The prototypical criterion judgments examined here need to be seen as an initial, tentative step towards developing mature moral judgments. As children develop, they begin to incorporate more psychological elements in their moral thinking, leading to more flexible moral concepts. For instance, at around age 4 or 5, children begin to refer to mental states, intentions, and their own or others' emotions in their narratives regarding moral conflicts (Wainryb et al., 2005). By 5 years of age, children understand that others may have different moral beliefs than their own (Flavell, Mumme, Green, & Flavell, 1992; Wainryb & Ford, 1998), and they are able to manipulate both intention and outcome information in their moral evaluations (Zelazo, Helwig, & Lau, 1996). In addition, research has shown that preschool and kindergarten-age children are not able to recognize multiple components of more complex, multifaceted situations unless those components are made highly salient, although they are able to do so by middle childhood (Crane & Tisak, 1995; Killen et al., 2001). It is likely that children cannot coordinate different moral and nonmoral concepts in their judgments or begin to understand more complex situations (e.g., involving different mitigating circumstances or varied intentions) until they have acquired an understanding of the different dimensions of moral judgments examined here in the context of prototypical events. The present results indicate that this may be facilitated by temperamental factors, which are also likely to interact with parental discipline. Thus, the judgments examined here can be seen as initial and important ''building steps'' in the

development of children's moral understanding. With age, moral judgments become more broadly comprehensive, universally applicable, and generalizable, but at the same time, with age, children also are increasingly able to take context and psychological characteristics into account. Research that follows the development of children's moral understanding from their understanding of prototypical transgressions in the preschool years to an understanding of more complex, multifaceted events in the early school years is needed to further illuminate the developmental trajectory of moral judgments.

Study Limitations and Future Directions

The moral stimuli examined in this study focused exclusively on physical and psychological harm or distress. Narrative analyses have shown that physical harm is very salient to preschoolers (Wainryb et al., 2005), and other research demonstrates that young children apply moral criteria to events involving physical harm more consistently and at earlier ages than unfairness (Smetana, 1981). Thus, we might have observed more normative change in children's understanding of different moral concepts had we also included items pertaining to sharing, stealing, and resource distribution or if we had followed somewhat younger children over time, perhaps for a longer period than a year. However, the interview methods used here are limited by children's developing language abilities (Smetana & Braeges, 1990). Although the interview relies largely on nonverbal *yes* or *no* judgments, the questions are linguistically complex. Research investigating young children's developing understanding of moral criteria using different methods is needed.

In addition, it should be noted that our sample was primarily European American and from middle-income families. We believe that the present findings are broadly generalizable, as the ability to distinguish moral and conventional issues on the different criteria examined here has been demonstrated in racially and culturally diverse samples of young children (Smetana, 2006). However, this also must be tested in further research.

In the present study, we examined each criterion judgment separately to examine their developmental trajectories and individual variations. Because they may vary in their conceptual difficulty, we expected (and found) that the different criteria have different predictors and show different patterns of growth and change across the year. The finding that the criterion judgments were highly correlated at Wave 1 but became less so across the three waves was surprising, as it suggests that the different criteria become increasingly distinct during the preschool years. However, these findings may reflect variations in young children's understanding of these different judgments. Children may treat them as increasingly distinct until their understanding of each is fully acquired, at which point we would expect that their judgments would cohere together.

There has been little previous research from the social domain perspective on individual differences in the acquisition of early moral judgments, particularly among normally developing children. Although we found significant differences in initial judgments and in change over time as a function of children's temperament, more research is needed to identify other factors that influence developmental change. Future research might profitably examine the influence of empathy, children's theory of mind, and parental discipline and responses to transgressions as sources of variability in children's developing understanding of different moral criteria. Despite these limitations, our study represents an important step in describing the development and individual variability in young children's moral judgments.

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