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Children's strategies for self-correcting their social and moral transgressions and perceived personal shortcomings: Implications for moral agency

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ABSTRACT

Previous research has found that when children engage in social and moral transgressions, they take steps to either remedy or explain their behavior. However, no prior systematic investigation has examined the strategies children employ to 'correct' their behavior in future situations. The present study employed a domain theory lens to investigate developmental changes in children's self-reported strategies for self-correcting their moral and social conventional transgressions as well as adjusting self-perceived personal shortcomings. Participants were 100 children from two regions of the US distributed across five age groups, six-, eight-, 10-, 12- and 16-years. Findings from interviews revealed significant differences in strategies for self-correction by domain and age. Implications for expanding our definitions of moral agency and improving social and emotional learning (SEL) programs are discussed.

KEYWORDS

Moral development: social domain theory, moral agency; social and emotional learning (SEL)

One important factor in the process of moral development is that children and adolescents engage in social and moral transgressions (Higgins, 1996; Wainryb, Brehl, Matwin, Sokol, & Hammond, 2005). Previous research has found that when children transgress they try to either remedy or explain their behavior to others (Nucci, 1985; Nucci & Nucci, 1982a; Pasupathi & Wainryb, 2010). Research that has directly examined children's strategies to control their behavior, such as delay of gratification, discovered that children do attempt to prevent future engagement in certain behaviors (Nerlove, Mischel, & Mischel, 2008). These findings suggest that children have an awareness of their transgressions and consider strategies for addressing their own wrongdoing. However, no prior studies have systematically explored how children and adolescents think about what steps, if any, they should take to address their future social and moral transgressions and personal shortcomings. Therefore, little is known about how children and adolescents develop strategies for changing their own behavior and potentially reducing the likelihood of engagement in social transgressions and behavioral choices in their personal domain that they may consider either unwise or placing themselves at risk.

Programs such as those developed by social and emotional learning (SEL) researchers and educators, have attempted to help children develop strategies for managing their behavior, and ideally improving it, such as conflict resolution and self-calming (Dapolio, 2016), and mindfulness (Schonert-Reichl & Lawlor, 2010). However most, if not all, of these programs and interventions used parents or teachers as the agent responsible for implementing or teaching strategies that would lead to a change in the child's behavior. Children then, were seen as targets, instead of being actively involved agents in their own behavioral adjustment. While some SEL programs have attempted to incorporate children in the process of coming up with strategies for fixing their behavior (Elias, 2003), there has as yet not been a systematic investigation into children's identification of their social and moral transgressions and what strategies they may have used to correct them. The present study addressed these issues by eliciting children's self-reports of their own reported social and moral transgressions and perceived personal shortcomings or behavior placing themselves in jeopardy, along with their efforts to address future engagement in transgression through developing their own strategies.

Prior research has indicated that children respond to transgressions as a function of the social cognitive domain of the action (Nucci & Nucci, 1982a; Nucci & Weber, 1995; Smetana, Jambon, & Ball, 2014; Tisak, Nucci, & Jankowski, 1996; Turiel, 1983, 2008). Prior research has demonstrated that individuals distinguish among issues of morality (harm, fairness and issues of rights), social conventions (arbitrary social norms established for the smooth functioning of social interactions and social groups in society), personal issues (privacy and personal prerogatives) and prudential issues (personal safety and well-being) (Nucci, 2014; Smetana, 2011; Smetana et al., 2014).

Social cognitive domain theorists have argued that to understand children's moral development it is important to study children and adolescents' conceptualizations of their involvement in moral transgressions (Wainryb et al., 2005). Following this line of inquiry, Wainryb et al. (2005) investigated children's narratives of harming and being harmed by others. It was found that when narrating situations of harm in which the child was a transgressor, children were engaged in wrestling with coordinating their personal concerns and preferences with the moral considerations of the victim's harm. This is in keeping with social domain theorists' proposition that individuals are engaged in coordinating across domains in generating behavioral decisions (Smetana et al., 2014).

In addition, previous research has demonstrated that moral and conventional transgressions result in different types of responses. These differential domain-related patterns have been reported by peers, family members (Smetana, 2011; Smetana, 1989) from teachers (Killen & Smetana, 1999; Nucci, 1984; Smetana, 1984) and from the transgressors themselves (Nucci & Nucci, 1982a, 1982b; Wainryb, Brehl, Matwin, Sokol, & Hammond, 2005). For example, Nucci and Nucci (1982a, 1982b) observed children's moral and conventional transgressions in playground and school settings in order to study children's actual response to their transgressions. They found that children responded to observed moral domain transgression by focusing on the intrinsic features of the action and its effects on others. On the other hand, when reacting to breeches of conventions they focused on the normative status of the acts and their organizational function.

Examinations of transgressors' reactions to their own social and moral transgressions, (Nucci, 1985; Nucci & Nucci, 1982a) found that children's main reactions after a moral domain violation consisted of attempts to heal the interpersonal breach caused by the

behavior (apology or restitution). In contrast, transgressor responses to their own violations of convention focused upon the rule and the purpose of the rule (question rule, claim ignorance of rule, appeal to circumstances, deride respondent, noncompliance).

However, less research has investigated children's efforts to address perceived 'shortcomings' or violations of one's own individual standards regarding one's behavior in the personal domain, as well as instances of poor judgment in the prudential domain. Research has demonstrated that as children enter into adolescence more issues are seen as falling within the personal domain (Nucci, 2014; Smetana, 2011). As adolescents develop they begin engaging in more joint decision-making with parents, as well as engaging in more autonomous decision-making in general and in the personal and prudential domains in particular (Smetana, 2011). This research suggests that a fruitful area of investigation would be to explore how children and adolescents self-correct or address aspects of their personal conduct that they place outside of the legitimate control of others. Furthermore, even less research has explored how children think about mixed domain transgressions, or involving issues from more than one of the domains, such as breaking a social conventional rule (e.g., calling a teacher by their first name) that also involves moral considerations, such as causing harm (i.e., psychological distress to the teacher by feeling disrespected).

While social domain theorists have yet to investigate children's strategies for addressing their social and moral transgressions and personal shortcomings, previous research has explored the strategies provided by parents following their child's transgression (Recchia, Wainryb, Bourne, & Pasupathi, 2014). Recchia et al. interviewed 100 children aged seven-, 11- and 16-years and asked them to share a time that they did a harmful action (e.g., hurt or upset a friend) and a helpful action (e.g., helped a friend). The researchers then asked the children to share those events and discuss them with their mother and see if there is anything that can be learned from the event (Recchia et al., 2014). The study found that mothers suggested several types of strategies. For harmful events mothers most often suggested strategies of repair, to cease engagement in the behavior and to substitute a socially acceptable act for the harmful behavior.

As the review above illustrates, children are actively involved in making sense of their social and moral interactions. However, while previous research has acknowledged that children and adults hold moral standards which they sometimes inadvertently violate (Higgins, 1996; Pasupathi & Wainryb, 2010), research into transgressors' thinking after they have transgressed, or post-judgment thinking is very limited. So far, research has shown that transgressors react to their transgressions in domain consistent ways (Nucci & Nucci, 1982a, 1982b; Smetana, 1989), take into consideration both their perspective and those of their victim (Wainryb et al., 2005), and have the need to come to terms with their transgressions, in order to maintain a healthy sense of moral agency (Pasupathi & Wainryb, 2010; Recchia, Wainryb, Bourne, & Pasupathi, 2015; Recchia, Wainryb, & Pasupathi, 2013). However, no prior study has reviewed children's actual evaluations of their own experienced transgressions and the strategies they themselves generate to change their future behavior.

Understanding how children address their future conduct extends research on moral agency (Pasupathi & Wainryb, 2010) by including children's own plans for behavioral improvement as an aspect of reflecting on one's socio-moral actions. Taking such steps entails striking a balance 'between self-protection and genuine acknowledgement of their own wrong doings' (Pasupathi & Wainryb, 2010, p. 74). The present study explored the following hypotheses. First, based on previous social cognitive domain research, it was

expected that children would report engaging in transgressions that fell within each domain. As suggested by Wainryb et al. (2005), since moral transgressions are more memorable and likely to be noted by other children (Nucci & Nucci, 1982a, 1982b; Smetana, 1989), it was anticipated that moral transgressions would be reported at a greater frequency than actions in other domains. Second, based on previous findings suggesting that the adolescents find increasing areas of experience to fall under their own personal jurisdiction (Nucci, 2014; Smetana, 2011), it was expected that the frequency of reports of events in the personal domain would increase with age with adolescents reporting more events within the personal domain than younger children. Third, it was expected that there would be domain related differences in children's transgressor reactions immediately following an event resulting from the different outcomes associated with domains as suggested by Nucci and Nucci (1982a, 1982b), such as being more likely to apologize for moral harm, and possible age differences based on developmental differences in conceptualizing the domains (Nucci, 2009). Fourth, it was expected that the strategies children developed for altering their future behavior would mostly involve self-reminders or admonitions such as 'don't do this' or 'I should do this instead,' similar to the reminders and advice they receive from others (such as the reminders they have received from their parents as reported by Recchia et al. (2014)). Fifth, it was expected that strategies for altering future behavior would vary by the domain of the event.

Method

Participants

The sample consisted of 100 children and adolescents distributed across five ages: six-yearolds (10 girls, 11 boys, M_{age} =6.2, SD = .36), eight-year-olds (nine girls, 11 boys, M_{age} =8.2, SD=.42), 10-year-olds (nine girls, 11 boys, M_{age} =11.1, SD=.41), 12-year-olds (10 girls, nine boys, M_{age} =12.4, SD=.55) and 16-year-olds (1 $\check{2}$ girls, eight boys, M_{age} =16.2, SD=.41). These age groups were selected based upon prior research revealing associations between these ages and developmental shifts of understanding in each of the social cognitive domains that were the focus of this research (Midgette, Noh, Lee, & Nucci, 2016; Nucci, 2014; Smetana, 2011). Participants were recruited from four public schools located in Northern California, two elementary schools (six- to 10-year-olds), one middle school (12- to 14-year-olds) and one high school (15- to 16-year-olds). In addition, one K-12 charter school and one middle school in Western Massachusetts. This set of schools offered a diverse range of participants from both coasts of the US. Between 10 and 12 participants were recruited from each school. Participants were recruited through fliers and word of mouth. Signed parental consent and student assent forms were obtained for all participants. The distribution of the sample by race and ethnicity was as follows: 21% African American, 39% Caucasian, 16% Asian American, 17% Latin@, and 7% of mixed race.

Procedure

Participants were interviewed individually, either at school, at home, or at the investigator's university office based on what was most convenient for the parent and participant. Interviews were audio recorded and took 20 to 30 minutes to complete. Prior to the interview, participants were told that the purpose of the study was to learn about their own

transgressions or action choices they later wish they hadn't done and what they did to correct those transgressions and behavioral choices. Children were first presented with a general open prompt: 'Can you tell me about a time where you were like "oops, I shouldn't have done that?" and 'What happened?' In order to assess the domain of the children's thinking about a given action or issue, children were asked after each prompt why they thought that what they did was something that they thought they shouldn't have done. Children were asked about what they did immediately following their transgression to elicit their 'transgressor reaction' within the situational context. Finally, to discover children's specific strategies for altering their future behavior, they were asked if they thought of taking steps so that they would not make the same personal shortcoming or social/moral transgression again. Such questions included: 'What did you think of doing?' 'What strategies did you use?' 'Did it work?'

The procedure described above was followed for five specific prompts aimed at exploring transgressions in each domain. After being asked in general, 'Can you share a time where you did something you thought you shouldn't have done,' or 'Can you share a time when you did something that you were like "Oops, I shouldn't have done that?", participants were given follow-up prompts designed to elicit descriptions of events in the three main domains: moral, conventional and personal. In order to explore transgressions that were potentially conventional in nature, participants were asked 'At home or at school, are there any rules that you were like "Oops I shouldn't have done that?", or 'I should fix that?' 'What happened?' For the moral domain, children were prompted with the following question: 'Have you done something to a friend or classmate that you were like "Oops I shouldn't have done that?" Something that was mean or unfair?' They were also asked about the personal domain: 'Have you done something for yourself that you wish you hadn't done? Something to do with your choice of friends, clothes, food?' Finally, a prompt was provided asking 'Let's say that your life is being made into a movie. You are the director. What are things that you would like to edit or cut?' This final prompt was designed to elicit a transgression, personal shortcoming or instance of poor judgment that the child might consider most important or that they regretted the most. In addition to providing a transgression or shortcoming for each of the five main prompts, children were prompted to provide additional transgressions that they remembered, such as 'Has something like what you have described happened another time?' or 'Is there another event in which you said or did something you wished you hadn't?' In some cases participants spontaneously provided other examples without a prompt. This set of procedures resulted in an average of 6.4 (SD = 1.70) event descriptions per participant.

Coding of interviews and issues of reliability

A coding scheme was developed based upon responses obtained in 20 interviews distributed across the five age groups. Each event was coded for the transgression/shortcoming domain, the type of transgressor reaction used following the event and the type of strategy developed following the event. Each reported transgression or perceived shortcoming was categorized within one of the five well-established domain theory-based categories: moral, personal, conventional, prudential and domain overlapping (mixed) (Smetana et al., 2014). Transgressions that had to do with issues of harm, sharing/fairness, rights were coded as moral. Transgressions that had to do with breaking school rules, or rules at home such as curfew that did not pertain to moral or prudential concerns were coded as conventional transgressions. Actions that had to do with putting oneself in situations of danger, such as engaging in drug use were coded as prudential. Perceived shortcomings having to do with personality or personal wishes such as wishing to have a better choice of hobbies, friendships or time management were coded as personal. Transgressions or shortcomings that included elements of more than one domain were coded as mixed.

Codes to capture transgressor reactions were adapted from prior observational research (Nucci & Nucci, 1982a) of children's transgressions. Codes for strategies for altering future behavior included those developed in prior interview studies by Recchia et al. (2014) investigating mother's recommended strategies to their children. The study employed grounded theory to generate codes for strategies and transgressor reactions following a described action or personal choice that were not accounted for by codes employed in previous research. See Table 5 for codes used to categorize the transgression reaction type and the strategy type developed following the reported action or personal shortcoming.

Reliabilities were established by two independent raters employing 20% of the interview transcripts distributed across the five age groups. Interrater reliability was calculated using Cohen's Kappa among the categories for transgressor domain, transgressor reaction type and strategy type. Cohen's Kappa scores ranged from .77 to .89 with a mean Kappa of .84. Any discrepancies in the final coding were resolved through a meeting of the raters and a single category was assigned.

Results

The presentation of the results focuses on three outcomes: the nature/domain of transgressions and behavioral choices, participant reactions to those transgressions and behavioral decisions and strategies they stated having used or considered using to alter their actions and future decisions based on the described events.

The nature and domain of transgressions and shortcomings

A total of 640 transgression/shortcoming events were collected. Six-year-olds reported the fewest events, with an average of 5.4 events per participant (SD=1.50). Sixteen-year-olds reported the most events, with an average of 7.9 events per participant (SD=1.63). The number of reported events increased with age (F(4,95=8.74, p<.01) η_p^2 =.29. Post hoc Tukey Honest Significant Difference (HSD) (<.05), revealed that 16-year-olds reported significantly more events than every age group except for 12-year-olds.

Transgressions ranged in severity from deciding to get into a car with a drunk driver, hitting a sibling, to perceived personal shortcomings such as wanting to change one's personality to be more outspoken and wishing to change clothing style. As noted above in the description of methods, participants described experiencing events that fell across the five domains: moral, conventional, personal, prudential and mixed. The proportion of events by domain and age is presented in Table 1. The proportion of reported events varied significantly by domain (F(14, 85) = 2.63, p<.003) η_p^2 =.30.) Tukey post hoc test (p.05) showed that the proportion of reported events in each domain category varied significantly from each other, except for the proportion between mixed domain events compared to prudential and personal domain events and conventional domain events when compared to moral and

Age	Domain								
	Moral	Conventional	Personal	Prudential	Mixed	Average			
6	.45	.30	.08	.06	.10	5.48			
8	.50	.25	.11	.05	.08	5.90			
10	.36	.25	.16	.07	.15	6.05			
12	.41	.27	.20	.03	.08	6.73			
16	.28	.25	.38	.03	.05	7.95			

Table 1. Proportion of reported transgressions by domain of event and age of transgressor.

personal domain events. Consistent with previous research (Wainryb et al., 2005), the events participants reported with the greatest frequency fell within the moral domain. A total of 247 (38.6%) reported events fell within the moral domain. This was followed in order of event type: conventional 170 (26.6%), personal 132 (20.6%), mixed domain 62 (9.7%) and prudential domain 29 (4.5%).

The kinds of transgressions that children mentioned that fell in the moral domain mostly involved, as found by Wainryb et al. (2005), physically hurting siblings or classmates and saying mean things to others. In fact, the most frequently reported moral transgression was harming a sibling (59 [23.8%]). Reporting proportion of moral transgressions varied significantly by age (F(4.95)=3.69, p < .01) η_p^2 =.13, but not by sex (F(1.98=.49, p>.48). Post hoc (Tukey, p < .05), revealed that eight-year-olds (M=.50, SD=.19) were significantly more likely to report transgressing in the moral domain than 16-year-olds (M=.28, SD=.12).

Conventional transgressions included such behaviors as forgetting table manners, talking during class, or not listening to parents or teachers. No statistically significant sex differences (F(1.98)=.07, p>.78) or age differences (F(4.95=.52, p>.72) were found in reporting proportion of conventional transgressions

In terms of the personal domain, participants' perceived shortcomings as expressed through their desire to change something about their own behavior based on their own personal standards or preferences, included their choice of clothing, concerns over their choice in friendships, personal time management and eating habits. The extent to which participants reported actions or choices in the personal domain varied significantly by age (F(4.95)=16.03, p < .01), η_p^2 =.40. Proportion of reported shortcomings in this domain by age from most to least followed the following order: 16-year-olds (M=.38, SD=.14), 12-yearolds (M=.20, SD=.16), 10-year-olds (M=.16, SD=.13), eight-year-olds (M=.11, SD=.09) and six-year-olds (M=.08, SD=.12). As hypothesized, 16-year-olds reported self-perceived personal shortcomings significantly more frequently than any other age group (Tukey HSD, p < .05). In fact, 16-year-olds were the only age group to report more personal shortcomings overall than moral transgressions. No sex differences were found (F(1.98)=.88, p>.34) in these reported proportions.

Prudential transgressions comprised of actions or decisions that could be harmful to the self, included drug use and engaging in activities that led to tripping and falling down (in the case of six-year-olds). No age (F(4.94)=.96, p>.43) nor sex (F(1.98)=1.18, p>.27)differences were found in the total proportion of reported prudential domain events. Mixed domain transgressions were transgressions that included combinations of the domains described above. Mixed domain events frequently involved the combination of conventional home rules, such as listen to your parents and moral considerations of harming a sibling. The reporting of mixed domain transgressions varied significantly by age (F(4.95)=2.81,p < .02), η_p^2 =.10. Post hoc Tukey HSD test revealed that 10-year-olds (M=.15, SD=.15) were significantly more likely to report mixed domain events than 16-year-olds (M=.05, SD=.06). Proportions of reported mixed domain events in descending order by age were as follows: 10-year-olds reported the greatest number of mixed events followed by six-yearolds (M=.10, SD=.12), 12-year-olds (M=.08, SD=.08), eight-year-olds (M=.08, SD=.11) and then 16-year-olds (M=.05, SD=.06). No sex differences were found (F(1.98)=2.45, p>.12).

Reactions to reported transgressions and personal shortcomings

Out of the 640 events provided, 511 included descriptions of the participants' immediate reactions to their own actions or choices. Cases without such reported reactions primarily fell within the description of personal qualities that required long-term change rather than an immediate apology or behavioral shift. Transgression reactions fell into eight categories. The full list of transgressor reactions and their proportion by age and domain is summarized in Tables 2 and 3. The top three most common reactions overall, across domains, were the following: apologize (31.5%), cease the behavior (20.1%) and correct the behavior (15%).

Following procedures established in prior research (Shaw, Wainryb, & Smetana, 2014; Wainryb, Shaw, Laupa, & Smith, 2001) an initial MANOVA was conducted examining transgressor responses (scored as proportions) as a function of domain with age and sex as grouping variables. Wilks' lambda revealed statistically significant differences by domain (F(4.265)=4.88, p<.01) and age (F(4.265)=2.68, p<.01). There were no significant main effects or interactions for sex (F(1.265)=1.49, p > .16) or domain X age interaction (F(16.265)=1.20, p > .16)p<.06). As a result, sex was dropped from further analysis. To explore the significant interactions within domains, separate repeated measures ANOVAs were conducted for transgressor responses within each domain with age as the grouping variable and response type as the repeated measure. Only response types with frequencies of .05 or greater within

Table 2. Proportion of reported transgressor reactions by age of transgressor.

	Transgressor reaction									
Age	Apologize negotiate repair	Self- cease	Run	Calm down	Correct	Reprimand	Behavior	Behavior		
6	.34	.02	.06	.04	.14	.05	.05	.29		
8	.30	.02	.02	.08	.17	.03	.12	.25		
10	.35	.03	.02	.13	.25	.01	.13	.07		
12	.22	.08	.04	.08	.30	.04	.13	.10		
16	.20	.05	.13	.18	.15	.00	.18	.10		

Table 3. Proportion of reported transgressor reactions by domain of event.

	Transgressor reaction								
Domain	Apologize negotiate repair	Self- cease	Run	Calm down	Correct	Reprimand	Behavior	Behavior	
Moral	.54	.03	.09	.11	.06	.03	.09	.04	
Conventional	.20	.09	.02	.08	.22	.01	.13	.24	
Personal	.02	.00	.02	.15	.35	.02	.20	.23	
Mixed	.23	.01	.08	.11	.17	.07	.14	.18	
Prudential	.04	.00	.05	.09	.50	.00	.09	.22	

Note: Data in bold are the proportions above .05 used for repeated measures ANOVA analyses.

each domain were used for each domain specific analysis. Tukey HSD post hoc pairwise comparison tests allowed for analyses of specific response type differences. To explore significant age differences in types of transgressor reactions independent of domain, separate ANOVAs were run on each strategy with age as the independent variable. Tukey HSD post hoc pairwise comparison tests were employed to analyze specific age differences, Table 2 represents the response categories as a function of age and Table 3 represents response categories as a function of domain (in bold are proportions over .05 that were analyzed within each domain).

Repeated measures ANOVA analyses of respondent reactions within the moral domain revealed significant differences in the proportion of respondent reaction response (F(4.489)=57.26, p<.01) η_p^2 =.32. The transgressor reactions for the moral domain that occurred in decreasing order of frequency were apologize (M=.54, SD=.38), self-reprimand (M=.11, SD=. 25), repair (M=.09, SD=.22), calm down (M=.09, SD=.22) and cease the behavior (M=.06, SD=.16). Post hoc analyses (Tukey HSD, critical p<.05) revealed that to apologize was the most frequent type of reaction within this domain. Apologize was significantly more likely to be used than any of the other types of responses. The other responses did not vary significantly from each other.

Repeated measures analyses of transgression reaction type within the conventional domain revealed significant differences in the proportion of transgression reaction response (F(5.488)=3.42, p<.01) η_p^2 =.03. The transgressor reactions for the conventional domain in decreasing order of frequency were correct the behavior (M=.24, SD=.36), or emulate the appropriate behavior, cease the behavior (M=.22, SD=.34), apologize (M=.20, SD=.35), calm down (M=.13, SD=.37), negotiate (M=.09, SD=.25) and self-reprimand (M=.08, SD=.22). Post hoc analyses (Tukey HSD, critical p<.05) of overall means contributing to the main effect demonstrated that correct the behavior (M=.24, SD=.36) was significantly more likely to occur than negotiate (M=.09, SD=.25) and self-reprimand (M=.08, SD=.22)

Repeated measures analyses of transgressor reaction type within the prudential domain also revealed significant differences in the proportion of transgressor reaction response (F(4.96)=4.55, p<.01) η_p^2 =.16. The transgressor reactions for the prudential domain that occurred in order of decreasing frequency were cease the behavior (M=.50, SD=.50), correct the behavior (M=.22, SD=.42), self-reprimand (M=.09, SD=.29), calm down (M=.09, SD=29) and repair the harm done (M=.05, SD=.21). Post hoc analyses (Tukey HSD, critical p<.05) of overall means contributing to the main effect revealed that cease the behavior (M=.50, SD=.50) was significantly more frequently used than calm down (M=.09, SD=29), repair (M=.05, SD=.21) and self-reprimand (M=.09, SD=.29).

There were no significant differences in reaction type found for either the personal domain (F(3.176)=2.36, p<.07) or mixed domain events (F(6.289)=1.70, p>.12).

Independent of domain, there were two transgressor reactions that differed significantly by age. The usage of repair was found to differ significantly by age (F(4.286)=3.56, p>.01) η_p^2 =.04. Post hoc analyses (Tukey HSD, critical p<.05) of overall means contributing to the main effect revealed that 16-year-olds (M=.13, SD=.28) were significantly more likely to attempt to 'repair' after a transgression than eight-year-olds (M=.02, SD=.09) and 10-year-olds (M=.02, SD=.08). Furthermore, the use of correct varied significantly by age (F(4.286)=6.06, p>.01) η_p^2 =.07. Post hoc analyses (Tukey HSD, critical p<.05) revealed that six-year-olds (M=.29, SD=.40) were more likely to attempt to correct their behavior than 16-year-olds (M=.10, SD=.23), 12-year-olds (M=.10, SD=.27), and 10-year-olds (M=.07,



SD=.19). Eight-year-olds (M=.25, SD=.39) were more likely to report attempting to correct behavior after a transgression than 10-year-olds (M=.07, SD=.19).

Strategies

Out of the 640 events provided, participants reported developing a strategy in order to alter their behavior, and therefore not make the same transgression or repeat the same personal shortcoming a total of 528 times, or 82.5% of the time. When participants reported not thinking of a strategy immediately after their transgression, many participants stated that they thought of a strategy later on and in some of the cases younger participants provided a strategy they thought of in the process of being interviewed about their transgressions and shortcomings. In some cases, participants provided more than one strategy for each transgression or personal shortcoming; for the purpose of this analysis the focus was on the primary strategy, or the first strategy that the child reported they would use. The goal was to capture strategies the children generated and selected. It was impossible, however, to rule out external sources for some of the reported strategies. From the context of the strategy descriptions some would appear to have come from parents and friends, while others, such as taking deep breaths may well have come from exposure to SEL programs in their school. In all cases the strategies were ones endorsed by the children themselves.

The reported strategies were classified into 11 categories. For a full list and description, with examples of each strategy see Table 5. The most common strategies reported by participants were the following: self-admonition (14.5%), preventative measures (14%), improve behavior (10.2%) and mindfulness (7.9%), or slowing down and becoming more aware and mindful of situations.

Strategies, scored as proportions (see Table 4) were analyzed with a 2(age) × 5(domain) × 2(sex) and domain × age interactions multivariate analysis of variance (MANOVA). As hypothesized, the usage of overall strategies varied by domain (For a full list of strategies by domain refer to Table 4). Wilks' lambda revealed, as expected, statistically significant differences by domain (F(4.268)= 1.55, p<.01). There were no significant differences in strategies by age (F(4.268)=1.21, p>.16, sex (F(1.268)=1.15, p>.32) and no domain \times age interactions (F(16.268)=1.02, p>.41). To explore domain effects, a repeated measures ANOVA was conducted within each domain with strategy type as the repeated measure. Strategy types that did not occur with more than a proportion of 5% were not included in these analyses

Table 4. Proportion of strategies by domain (.05 and higher).

	Domain							
Strategies	Moral	Conventional	Personal	Prudential	Mixed			
Mindfulness	.19	.05	.15	.10	.06			
Preventative measures	.15	.18	.11	.32	.11			
Perspective taking	.04	.01	.01	00	.05			
Practical steps	.03	.09	.14	.06	.12			
Self-admonition	.14	.21	.11	.25	.11			
Improve behavior	.07	.07	.18	00	.18			
Use words	.08	.04	.04	.02	.01			
Think of consequence	.12	.11	.07	.04	.08			
Obey/listen .	.06	.08	.04	.10	.08			
Exercise self-control	.10	.10	.11	00	.09			
Substitute behavior	.01	.05	.03	.10	.10			

Note: Data in bold are the proportions above .05 used for repeated measures ANOVA analyses.



Table 5. Response category definitions.

Transgressor Reaction Categories

Apologize: Reports apologizing after an event by saying sorry (Nucci & Nucci, 1982a).

Cease behavior: Reports stopping behavior immediately after event (Nucci, & Nucci, 1982a).

Run away: Reports running away so not to get in trouble by leaving the situation.

Reprimand: Reports reprimanding themselves, feeling guilty by saying to self, reprimands 'oh, I shouldn't have done that.'
Repair: Tries to make up for the injury, transgression by doing something else in exchange, to restore the relationship, for example by offering a gift or inviting the person to be friends.

Corrects behavior: Corrects the behavior. Does the right behavior, or appropriate behavior following the transgression: I sit down, I fix it. I share. I obey. I raise my hand.

Negotiate: Reports attempting to negotiate with authority figure, or other in an attempt to shirk punishment or consequence. This includes explaining away behavior.

Calm down: Reports trying to calm self down, or reflects on their behavior. Letting it go, or shrugging the event off. Strategies for Correction Categories

Exercises self-control: Reports forcing themselves to exercise self-control or self-restraint, including deciding to keep words, information, thoughts to self; lets go of any anger, annoyance, negative thoughts, or desires, to try to forget about it or ignore stimuli, does not respond, or pay attention to people or things that might provoke unwanted behavior.

Uses words: Reports using words to convince with the other to stop the behavior, to compromise, negotiate, and reach an agreement.

Thinks of consequences: Reports thinking of or reminding self of previous or potential future consequences of their action. Thinking how their actions relate to their own goal present and future.

Mindfulness: Reports being attentive putting their mind to slowing down, paying attention, taking time, focusing or just thinking before acting or reacting. Subject tries to take a moment; gives themselves time to process, and reflect. Collects themselves.

Self-admonition: Reports thinking or remembering to not do the action again, trying not to do it at all or not saying what they aren't supposed to say, such as telling themselves 'don't do it again!'

Preventative measures: Reports taking steps to avoid the situation such as resting so as not to be in a bad mood, or to avoid the situation in the future.

Substitutes behavior: Reports doing another behavior instead such as, changing their activity to distract themselves and to re-direct their attention or focus to something else.

Perspective taking: Reports putting themselves in the other person's shoes, thinking of how they would feel if they were them in that situation.

Practical steps: Reports taking practical steps specific to improving a particular aspect of their behavior, such as putting an alarm to remember to be on time, or write down things on a calendar.

Obeys/listens: Reports deciding to listen or obey authority figure, or relying on parents or others to tell them when to stop, by requesting them to help fix the situation or prevent the situation, such as asking mother or teacher for assistance.

Improves behavior: Reports thinking of the positive, opposite of their original behavior, strives for the ideal, and tries to do the correct behavior, such as being nice or thinking positively.

Repeated measures analyses of strategy type within the moral domain revealed significant differences in the proportion of strategy type usage (F(7.740)=2.95, p<.01) η_p^2 =.02. The strategies for the moral domain that occurred in order of decreasing frequency were mindfulness (M=.19, SD=.30), preventative measures (M=.15, SD=.29), self-admonition (M=.14, SD=.27), think of consequence (M=.12, SD=.28), exercise self-control (M=.10, SD=.20), use words (M=.08, SD=.20), improve behavior (M=.07, SD=.15) and obey (M=.06, SD=.15). In keeping with the nature of this domain, mindfulness was the most employed strategy in the context of moral events. Post hoc analyses (Tukey HSD, critical p<.05) revealed that mindfulness (M=.19, SD=.30) was significantly more likely to be employed than obey (M=.06, SD=.15).

Repeated measures analyses of strategy type within the conventional domain revealed significant differences in the proportion of strategy type (F(8, 619)=3.78, p<.01) η_p^2 =.03. The strategies for the conventional domain that occurred in order of decreasing frequency were self-admonition (M=.21, SD=.35), preventative measures (M=.18, SD=.36), think of consequence (M=.11, SD=.29), exercise self-control (M=.10, SD=.25), practical steps(M=.09, SD=.25), or taking steps such as setting an alarm to arrive on time, obey (M=.08,SD=.23),

improve behavior (M=.07, SD=.20), mindfulness (M=.05, SD=.18) and substitute behavior (M=.05, SD=.17). Self-admonition was the most frequent strategy employed in the context of conventional events. Post hoc analyses (Tukey HSD, critical p<.05) of overall means contributing to the main effect demonstrate that self-admonition (M=.21, SD=.35) was significantly more likely to be employed than improve behavior (M=.07, SD=.20), obey (M=.08, SD=.22), mindfulness (M=.05, SD=.18) and substitute behavior (M=.05, SD=.17). Preventative measures (M=.18, SD=.36), was significantly more likely to be employed than mindfulness (M=.05, SD=.18) and substitute behavior (M=.05, SD=.17).

Repeated measures analyses of strategy type within the prudential domain revealed significant differences in the proportion of strategy type (F(5,149)=2.45, p<.03) η_p^2 =.08. The strategies for the prudential domain that occurred in order of decreasing frequency were preventative measures (M=.32, SD=.45), self-admonition (M=.25, SD=.43), obey (M=.10, SD=.29), substitute behavior (M=.10, SD=.29), or change activity, mindfulness (M=.10, SD=.29) and practical steps (M=.06, SD=.22). Post hoc analyses (Tukey HSD, critical p<.05) revealed that preventative measures (M=.32, SD=.45), was significantly more likely to be used than practical steps (M=.06, SD=.29).

The strategies for the personal domain that occurred in order of decreasing frequency were improve behavior (M=.18, SD=.35), mindfulness (M=.15, SD=.29), practical steps (M=.14, SD=.28), preventative measures (M=.11, SD=.25), self-admonition (M=.11, SD=.28), exercise self-control (M=.11, SD=.24) and think of the consequences (M=.07, SD=.19). Improve behavior was the most frequently employed strategy in this domain. However, repeated measures analyses of strategy type within the personal domain revealed no significant differences in the proportion of strategy type (F(6.332)=1.34, p<.2) . Nor were there significant differences in strategy type within the mixed domain (F(9.396)=.67, p<.7).

Discussion

This study examined children and adolescents' self-reported strategies to alter their behavior and prevent their engagement in moral and conventional transgressions as well as addressing their perceived personal shortcomings. While previous research has made inroads into exploring children's perspectives about transgressing (Wainryb et al., 2005) and their immediate reactions after a transgression (Nucci & Nucci, 1982a, 1982b), the literature has not addressed the important question of what children spontaneously do once they have made a judgment and reacted to their experience of a transgression. The present study found that children are actively engaged in developing strategies for self-correction to address their social and moral transgressions and personal shortcomings. Children considered strategies for altering their behaviors and personal qualities across each of the domains of social and personal conduct identified within the study.

As expected, the majority of the issues described by the children and early adolescents involved transgressions that fell in the moral domain. Moral transgressions are viewed as more serious than breaches of convention or poor personal choices and thus are likely to be the most salient (Smetana et al., 2014). Also, as expected the relative importance of concerns for addressing personal shortcomings increased in adolescence and surpassed the rates of self-reports for moral transgressions among 16-year-olds. This outcome was consistent with previous findings suggesting that adolescents are increasingly engaged in developing their personal domain (Nucci, 2014; Smetana, 2011),

Consistent with previous research (Nucci & Nucci, 1982a, 1982b), children reported immediate reactions to their moral and conventional transgressions that differed by domain. In the present study the most frequently reported transgressor reactions within moral events were directed at addressing the interpersonal breaches generated by the harm caused. Across ages the predominant transgressor response was to apologize for their actions. Consistent with findings from prior observational research (Nucci & Nucci, 1982a, 1982b), the most frequent transgressor reactions in the context of conventional transgressions were directed at conforming to the expected social norm. Finally, given that prudential actions and choices impact only the well-being of the actor (Nucci, 2014), it was not surprising that the most frequently reported immediate action in the context of prudential issues was simply to no longer engage in the activity (e.g., stop eating junk food).

As for age differences, it was found older youth were more likely to attempt to repair a relationship after a transgression than younger children, suggesting that by mid-adolescence, youth have learned that 'sorry' may not be enough and that extra steps may need to be taken to address the effects of the transgression on their relationship with others. On the other hand, younger children were more likely to attempt to correct their behavior than older children. This is in keeping with idea that younger children are still learning the 'correct' behavior and are attempting to emulate such behavior after a transgression.

Strategies for self-correction

The self-reports generated in the present study indicate that children and adolescents employ a range of strategies to self-correct their misbehavior and to modify what they regard as poor personal decisions. These strategies included self-admonitions and reminders, along with concrete efforts to alter misbehavior, preventative measures to prevent misbehavior or poor decisions and efforts at improving actions and choices. These self-reported strategies indicate that children are actively involved in meeting many of the goals set out in formal SEL programs such as to 'establish prosocial goals and solve problems, and use a variety of interpersonal skills to effectively and ethically handle developmentally relevant tasks' (Payton et al., 2000).

As expected and in line with prior work examining children's responses to transgressions, strategies for self-correction reported in the present study varied by domain. The most frequently mentioned strategy to address engagement in moral transgressions was to be 'mindful.' Mindfulness was defined in the present study as becoming attentive to the surrounding context and attempting to slow down and think before acting or reacting. This strategy was primarily employed when children were becoming angry and wanted to avoid hitting another child, or when a teenager noticed that they were about to say something hurtful. The tendency for mindfulness strategies to be employed in moral rather than conventional events is consistent with research indicating that children and adolescents associate strong emotions with moral rather than conventional transgressions (Arsenio & Lover, 1995), requiring the exercise of self-control.

In contrast with the focus upon mindfulness, the emphasis in conventional events was to attempt to 'remember' the expected norms and social expectations by applying self-admonitions, or thinking 'don't do it again.' Younger children were more likely to employ self-admonition as a strategy than older participants. This may be a function of the rulebased nature of the conventional transgressions, as many times younger children reported not knowing that there was a particular rule that they were transgressing. In essence, for younger children a primary strategy for preventing misbehavior was simply to learn and remember conventional rules. This finding is consistent with the reports of children's evaluations of teacher responses to conventional transgression in which younger children (below the age of 10) positively evaluated teacher statements of governing rules, while older children viewed these direct rule statements negatively and favored indirect reminders (Nucci, 1984).

Addressing perceived engagement in prudential domain actions, such as substance abuse, generally entailed taking preventative measures. In other words, participants believed it was best to avoid situations that put them in harm's way. However, findings for the prudential events need to be viewed with caution. Such events were reported much less frequently than issues within the other domains.

With respect to personal domain events, the focus was upon altering oneself and to improve performance in self-selected activities. The strategies adopted for personal domain shortcomings included such things as engaging in attitudinal changes, such as becoming more 'positive' and being 'nice.' With regard to improving performance of a particular personal behavior, the primary reported strategy was to take practical steps, including taking the advice of others into account and using the tools available in their environment (e.g., setting an alarm to remember to exercise).

Conclusion

In sum, the findings from this study indicate that children and adolescents are actively engaged in generating strategies to correct misbehavior and to modify their perceived personal shortcomings. The strategies that they adopt are consistent with the domain related characteristics of the issues they are attempting to address. Children's engagement in strategy development is consistent with assumptions of SEL programs, that children do want to become better and are capable of assessing their own behavior and deciding on a course of action through social problem solving and responsible decision-making (Greenberg, Kusche, & Riggs, 2004). These findings also argue against an over-reliance on behavioral approaches (Greenberg et al., 2003). An implication of the outcomes of this study is that SEL programs should place a greater emphasis in consulting with children to reflect on the strategies that they already have employed, mindful to the particular nature of the event, rather than proceeding as if children are without resources or ideas of their own to contribute. Instead, adults can act as children's collaborators in strategy-development.

While this study provided evidence that children and adolescents are involved in correcting their transgressions and personal shortcomings and undertake strategies to do so, it would be inaccurate to conclude that they are always involved in developing strategies for self-correction. In the current study children did not report attempting to implement strategies to alter their behavior in 17.5% of cases. Instead, in these instances they reported either simply not developing a strategy, or having found previous strategies to be ineffective, giving up. Future research should explore what children do once their strategies fail or are not effective.



Limitations

This was an initial foray into children's development of strategies for self-correction and has several limitations. The study relied on self-reports through interviews and therefore is subject to participants' memory. In addition, transgressions are a sensitive topic and therefore it is unlikely that participants shared all of the transgressions they remembered. It is possible that participants did not disclose transgressions that they thought were serious and were particularly ashamed of. Work by Smetana et al. (2009) has provided evidence that adolescents, for example, are likely to resist disclosure of behaviors that are prudential in nature, such as risky sexual conduct and substance use. Furthermore, this study could not ultimately account for the sources of these strategies. Instead, the focus was on the strategies that children reported thinking of or attempting to implement. While many of the strategies appeared to be self-generated, it is also true that some of the strategies may have come from exposure to SEL education as well as parental guidance and consultation. Future research should explore the processes by which children adopt externally provided strategies and the children's decision to employ them. In addition, this study did not explore how successful or effective these strategies may be once implemented nor whether some strategies are more effective than others. Future research should explore whether the effectiveness of these strategies varies, and if so, whether there are developmental differences in the effectiveness of their implementation. Finally, future research needs to go further into considering how self-corrective strategy development connects to children's understanding of themselves as moral agents and observe children's actual employment of and effectiveness of the strategies they develop.

Note

1. Please note that there has been a move towards using @ to represent both genders for Latino/

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Notes on contributor

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