

Domain Differences in Early Social Interactions

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Different social experiences help children develop distinctions between domains of norms. This study investigated whether mothers respond differently to moral, prudential, and pragmatic norms during the 2nd year, a period that precedes the time when children are able to make explicit distinctions between these norms. Sixty mothers of infants between 11 and 23 months were interviewed. Mothers' reports of their initial interventions, changes in intervention following noncompliance, and emotional reactions depended on normative domain. Initial interventions were less differentiated by domain for mothers of older than for mothers of younger children. These findings suggest that children have social experiences in the 2nd year that are associated with distinctions among normative domains.

Parents frequently convey to children that there are norms for how to behave. However, children also come to understand that there are qualitative differences between these norms. *Moral* norms concern the welfare and rights of others, whereas *prudential* norms concern the welfare of the agent (Smetana, 2006; Turiel, 1983). A third domain of norms of particular importance in early childhood is that of *pragmatic* norms, which concern behavior with undesirable practical consequences for parents, for example, spilling or playing with a breakable object (Gralinski & Kopp, 1993; Smetana, Kochanska & Chuang, 2000). (In the present study, we chose not to deal with the *personal* domain, that is, issues where the individual is considered as having the right to choose between alternative courses of action [e.g., Nucci & Weber, 1995]. We also decided to focus on pragmatic norms rather than *conventional* norms, which deal the coordination of social activity and have no direct consequences [e.g., wearing school uniform; Turiel, 1983], because maternal endorsement of pragmatic norms is more prevalent throughout the 2nd year [Smetana et al., 2000]. We thank the editor and an anonymous reviewer for prompting us to make these clarifications.) Understanding the differences between moral and other

domains of norms is essential in navigating through complex situations involving conflicts between norms (Smetana, 2006; e.g., Smetana, Killen & Turiel, 1991).

Children are hypothesized to construct distinctions between domains of norms through qualitatively different social interactions (Smetana, 2006; Turiel, 1983). The ability to draw such distinctions appears to emerge some time before the third birthday: Three-year-olds consider violations of moral norms as worse than violations of prudential norms (Tisak, 1993) and are also more likely to think that moral rules, unlike social conventions, are generalizable to new contexts (e.g., a different school; Smetana & Braeges, 1990; Smetana et al., 2012). Yet, most work on domain differences in social interactions has focused on the time *after* the third birthday and into school age (Killen & Smetana, 1999; Nucci & Turiel, 1978; Nucci & Weber, 1995; Tisak, Nucci & Jankowski, 1996; Turiel, 2008; for a review, see Smetana, 2006).

A key question is whether domain differences in social interactions precede the age when children can draw conceptual distinctions between domains of norms. If there are early domain differences in social interactions, the corresponding experiences may contribute to the emergence of domain distinctions in the 3rd year. Early interactions with caregivers may be particularly impactful in this respect, given the extensive time children spent with caregivers contact during infancy and early toddlerhood. The present study investigated domain differences in maternal responding to child transgressions in the 2nd year of life.

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Domain differences in early social interactions may be unique compared to domain differences in later social interactions. First, a number of new norms become relevant to the mother-child dyad over the course of the 2nd year. After the onset of walking around the first birthday, young children gradually gain access to a wealth of new prohibitable activities (Biringen, Emde, Campos & Appelbaum, 1995). Aggression against others emerges around the first birthday and increases during the 2nd year (Dunn & Munn, 1985; Hay, 2005). These changes in the child's behavior co-occur with an increase in the number of prudential, moral, and pragmatic norms endorsed by the mother (Gralinski & Kopp, 1993; Smetana et al., 2000).

At the same time, mother-child communication is under severe constraints in the 2nd year. Children have limited linguistic abilities during this period, and the majority do not produce full sentences until around the second birthday (Fenson et al., 1994). Correspondingly, mothers generally use less verbal reasoning in response to child transgression in the 2nd than in the 3rd year (Kuczynski, Kochanska, Radke-Yarrow, & Ginius-Brown, 1987; LeCuyer-Maus & Houck, 2002). Thus, whereas research with older children has focused on how *verbal* responses to transgressions differ by domain (see Smetana, 2006), these verbal differences in maternal responding may need to be supplemented by nonverbal differences if they are to facilitate young children's grasp of domain distinctions.

In short, mothers try to convey an increasing number of norms to 1-year-olds, but cannot rely exclusively on verbal means of communicating those norms. The present study investigated whether mothers, in dealing with this challenge, convey differences between moral, prudential, and pragmatic norms through alternative, nonverbal means. To address this question, we conducted structured interviews with mothers of children between 11 and 23 months of age. The validity of maternal report has been shown in numerous studies on early mother-child conflict (e.g., Goodenough, 1931; Smetana et al., 2000; Zahn-Waxler & Chapman, 1982). When mothers are asked to describe specific interactions, their reports are comparable to descriptions by nonparental observers (Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992). In the present study, mothers were asked to give detailed descriptions of recent instances where their child engaged in a prudential, moral, and pragmatic transgression. Mothers were subsequently asked to compare their emotional responses in these three situations.

First, we hypothesized that mothers would report different interventions for violations of moral, prudential, and pragmatic norms in the following two ways:

1. Mothers can use a variety of intervention types when a young child *initially* transgresses. They may try to distract the child, physically restrain the child, remove the prohibited object, or utter a verbal prohibition or explanation. Importantly, even though 1-year-olds will not fully understand all verbal explanations for why an act is wrong, they may still notice that the mother uses verbal explanations more often in some situations than in others. The current study investigated whether mothers use different *initial* interventions for moral, prudential, and pragmatic norms in the 2nd year of life.
2. Mothers of young children often face noncompliance with their interventions (Kuczynski et al., 1987). The way they respond to noncompliance may depend on the domain of the transgression. For instance, in prudential contexts, but not pragmatic contexts, noncompliance usually means that the child is at heightened risk for injury, thus requiring a physical intervention. This way, changes in intervention following noncompliance can also inform children about domain differences.

Second, we predicted that mothers, in comparing their emotional responses in the three situations, would report one situation as being a stronger elicitor of certain emotions than the two others. Emotional communication may be an essential way by which mothers communicate norms to children in the 2nd year, given the limited verbal abilities at this age (Dahl, Campos, & Witherington, 2011; Kochanska, 1994). Our question was whether the specific emotion elicited by a transgression depended on domain. We expected that prudential transgression would elicit the most fear in mothers, whereas moral transgressions would elicit the most anger (e.g., Hoffman, 2000). In contrast, we expected pragmatic transgressions to resemble *conventional* transgressions (see as described previously) in being affectively neutral (Arsenio & Ford, 1985), given that both forms of transgressions usually involve less serious risks than do prudential and moral transgressions.

Domain differences in maternal responses are not necessarily constant across the 2nd year. Previous work has tended to focus on the effects of *either* normative domain or age of the child, rather than

the interplay between them (Kuczynski et al., 1987; LeCuyer-Maus & Houck, 2002; Smetana, 1989; Zahn-Waxler & Chapman, 1982). In contrast, a third purpose of the present study was to investigate whether domain differentiation in maternal reports of intervention (through type of initial intervention, change in intervention type following noncompliance, or emotional reaction) would increase or decrease during the 2nd year of life. As mothers make more use of verbal interventions on child transgressions, one possibility is that they shift from nonverbal to verbal means of conveying differences between domains of norms. If so, mothers would show *less* of some forms of domain differentiation toward the end of the 2nd year than at the beginning.

Method

Participants

Sixty-one mothers living in the San Francisco Bay Area ($M_{\text{age}} = 35.6$ years, largely upper middle class, 74% Caucasian, 12% Asian American, 7% Hispanic, and 7% Other) participated in a phone interview. One participant was excluded because she was unable to answer some of the questions. The remaining 60 participants had children (32 female, 28 male) between 11 and 13 months ($n = 19$, all crawling, $M_{\text{age}} = 11.8$, $SD_{\text{age}} = 0.71$), 15 and 17 months ($n = 21$, all walking, $M_{\text{age}} = 16.1$, $SD_{\text{age}} = 0.77$), and 21 and 23 months ($n = 20$, all walking, $M_{\text{age}} = 22.2$, $SD_{\text{age}} = 0.83$). These age ranges were chosen so as to capture transitions in the period ranging from right before children typically start walking until right before they typically say their first sentences.

Procedures

All interviews but one were conducted over the phone. Past research has shown phone interviewing to be an effective method for data collection, yielding highly similar results to those collected by face-to-face interviews (Carr & Worth, 2001). Interviews were recorded for coding purposes. The interviewer began by asking the mothers to describe one situation for each of the three domains of interest, using the following wording:

Can you walk me through, in as much detail as possible, a recent instance where you tried to keep [child's name] from doing something because ...

A) ... it was dangerous to him/her? (*Prudential event*)

B) ... it was harmful to you or someone else? (*Moral event*)

C) ... it would make a mess or damage something? (*Pragmatic event*)

Mothers were subsequently asked to compare their emotional reactions with the three events *pairwise*, that is, prudential versus moral, moral versus pragmatic, and pragmatic versus prudential, using the following wording: "How did the way you felt and behaved in [Event 1] compare to how you felt and behaved in [Event 2]." The prompts for comparisons did not mention any specific emotional aspects, so as to avoid cueing the mothers about the study hypotheses. We chose to assess emotional reactions comparatively because mothers in pilot interviews rarely described their emotional reactions in their initial narratives of each event. Pairwise comparisons of emotional responses were not obtained for three participants.

Coding

The audio recordings of the interviews were coded by two coders blind to the study hypotheses. The coding schemes described next were developed from pilot interviews with 15 mothers. Twenty-five percent of the data were double-coded to assess interrater agreement.

Maternal interventions. Five types of maternal intervention were coded: physical restraint, distraction, removal of prohibited object, commands, and reasoning (see Table 1 for definitions). For each of these interventions, coders determined whether that intervention was present or absent in the situation, both *initially* and *noninitially*. Initial maternal interventions were those described as happening after the child's transgression but *before* any child response to the intervention(s) (e.g., "I told him 'no' and grabbed his arm, and but he kept hitting"; mean agreement: $\kappa_{\text{Cohen}} = .87$), whereas noninitial interventions were those described as happening *after* the first mentioned child response ($\kappa_{\text{Cohen}} = .83$). This procedure gave a total of 10 data points (5 [interventions] \times 2 [initial/noninitial]) per situation for each mother. If a mother reported use of reasoning, the coder also noted whether the reasoning included a reference to child well-being, other well-being, disorder, or property.

Table 1
Coded Categories of Maternal Interventions

Intervention	% initial/ noninitial	Definition	Example
Reasoning	23/10		
Child well-being	6/6	Provided reasons for why the behavior was wrong.	"You'll fall and hurt yourself."
Other well-being	11/4		"That hurts mommy!"
Disorder	4/0		"Look at this mess!"
Property	2/0		"That's Johnny's cup!"
Other	1/1		"That's a stove!"
Command	78/24	Explicitly told the child what to do.	"Stay away from the stove."
Distraction	14/20	Tried to distract the child from continuing the misbehavior by offering a different activity.	Mother showed child an exciting toy to keep the child from playing with computer.
Physical restraint	41/24	Kept the child from misbehaving by force.	Mother grabbed child's arms when child was hitting another child.
Removal of prohibited object	20/9	Removed object that was necessary for continuing the misbehavior.	Taking food away from a child who is spilling.

Note. Numbers refer to the percentage of events in which each intervention was reported as occurring initially/noninitially.

Child compliance. Coders also assessed whether children were reported to comply with the mothers' initial intervention ($\kappa_{\text{Cohen}} = .79$), to allow for testing of whether mothers' intervention changed when the child failed to comply.

Emotion differentiation. Mothers' comparisons of their reactions to the events were coded for the following emotional aspects: *fear*, *anger*, *disgust*, *positive emotion*, *immediacy of reaction* (responding more quickly in one situation than in another), and *sternness of reaction* (being more emphatic or serious in one situation than in another). The two latter, while rarely considered distinct emotions, are emotional features that in pilot interviews emerged as common ways by which mothers differentiated between situations. For each aspect and for each comparison, coders assessed whether the mother indicated that one event was a stronger elicitor than the comparison event of that particular aspect, or whether the two events did not differ. Interrater agreement was high ($\kappa_{\text{Cohen}} = .88$). We subsequently determined whether a mother had consistently indicated that one event was the strongest elicitor of a particular aspect, that is, that one event was indicated as stronger than the two other events. Thus, for each of the six emotional aspects, mothers received a final score of either *prudential event strongest*, *moral event strongest*, *pragmatic event strongest*, or *tied*.

Results

Domain Dependence of Maternal Responses

Initial maternal interventions. Our first question was whether reported initial maternal interventions depended on the domain of transgression. We tested this question by comparing the fit of hierarchical logistic regression models predicting whether a particular intervention was coded as present (= 1) or not present (= 0). The fixed effects were intervention, age group, domain, and two-way interactions between these. Individual mothers' propensity to report using a particular intervention technique was included as a random effect. Domain dependence of intervention type was tested by removing the Intervention \times Domain term and comparing the increase in model deviance to a chi-square distribution with degrees of freedom equal to the number of removed parameters. Preliminary analyses revealed no effects of child gender.

Mothers' reported initial use of interventions depended significantly on domain, $\chi^2(8) = 41.43$, $p < .001$ (Figure 1). To test the domain dependence of each intervention type separately, we proceeded to fit logistic regression models for each intervention.

Both physical restraint and reasoning were reported to be more common in the moral event than in the two other events—physical restraint: $\chi^2(2) = 6.91$, $p = .031$; reasoning: $\chi^2(2) = 7.52$, $p = .023$. Domain effects were also evident in the

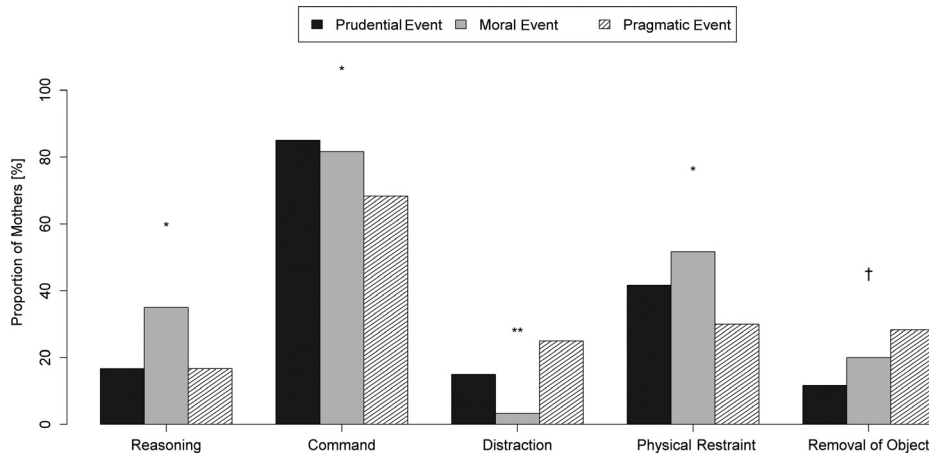


Figure 1. Initial use of intervention in each event.

Note. Percentage of mothers reporting *initial* use of a particular intervention in the three events.

† $p < .10$. * $p < .05$. ** $p < .01$.

kinds of reasons provided by mothers. Not surprisingly, most reasons given by the mother to the child in the prudential event referred to child well-being, Pearson chi-square test: $\chi^2(4) = 23.00$, $p < .001$. In the moral event, the most common type of reason referred to harm to others, Pearson $\chi^2(4) = 65.43$, $p < .001$, whereas reference to disorder or object damage was most common in pragmatic situations, Pearson $\chi^2(4) = 16.00$, $p = .003$.

In contrast, the reported use of command was most common in the prudential event, $\chi^2(2) = 6.94$, $p = .031$. Finally, the reported use of distraction and removal of object was most common in the pragmatic event, although the trend was nonsignificant for the removal of object—distraction: $\chi^2(2) = 11.41$, $p = .003$; removal of object: $\chi^2(2) = 5.53$, $p = .063$.

Change in intervention type following noncompliance. Our next question was whether mothers responded differently to noncompliance in the three domains. Initial noncompliance was described in 39% of events and did not depend significantly on the domain of the transgression, $\chi^2(2) = 3.67$, $p = .159$. Following similar procedures as described earlier, we fitted mixed logistic regression models predicting the presence or absence of a particular intervention in those events where children were described as noncompliant. The fixed effects were intervention, age group, domain, and timing of the intervention (“initial” or “noninitial”), as well as two- and three-way interactions among these predictors.

There was a significant Timing \times Domain interaction, $\chi^2(8) = 17.76$, $p = .023$. As seen in Figure 2, the change in reported use of reasoning following noncompliance depended significantly on the

domain of the transgression, $\chi^2(2) = 7.69$, $p = .021$. Mothers were equally likely to report using reasoning before and after initial noncompliance in moral events, whereas the reported use of reasoning went *down* in the pragmatic event and *up* in the prudential event.

The change in reported use of physical restraint after noncompliance also depended significantly on the domain of the transgression, $\chi^2(2) = 9.28$, $p = .010$. The use of physical restraint went down in the moral event and up in the pragmatic and prudential events if the child did not comply with the mother’s initial intervention. In contrast, the change in the use of command, distraction, and removal of object did *not* depend on the domain, $ps > .35$.

Emotional differentiation. The third possible way by which mothers could show domain differentiation was through their emotional reactions. We restricted these analyses to instances where a mother had indicated that one emotional aspect had been stronger in one situation than in the two others (excluding all “tied” responses). Ninety percent of mothers indicated differentiation in one or more emotional aspects. The overall Emotion \times Event interaction was analyzed by fitting logistic regression models with random intercept for subjects to a set of nested dichotomies (Fox, 2008).

There was a significant relation between the domain of the child transgression and the kind of emotional response indicated by mothers to have been strongest, $\chi^2(9) = 84.20$, $p < .001$. Data for each aspect were analyzed separately using Pearson χ^2 tests. Table 2 shows, for each emotional aspect, the number of mothers who indicated that one event

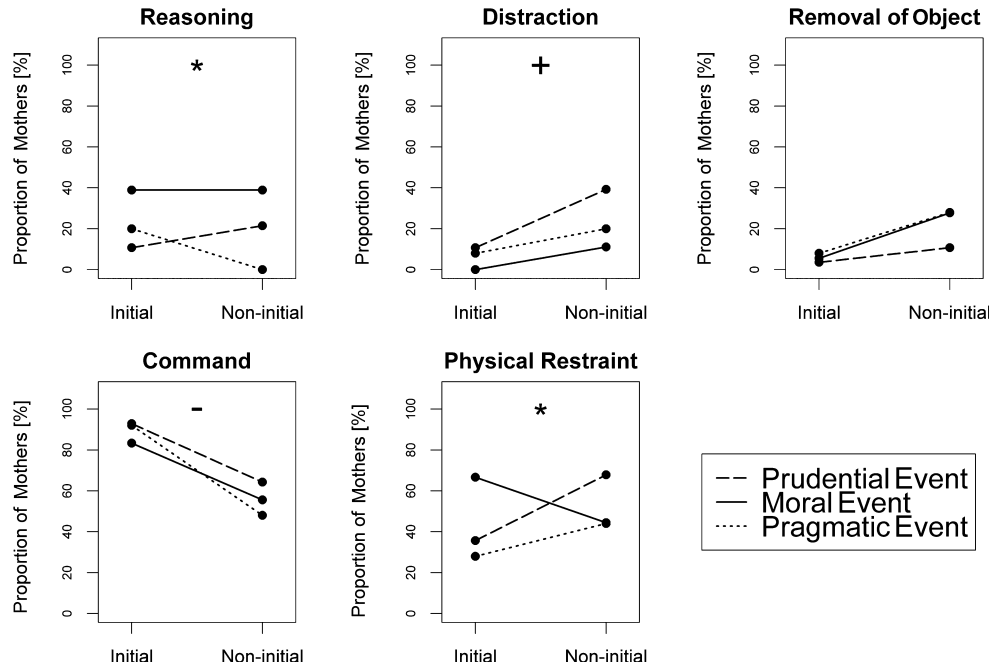


Figure 2. Change in intervention following noncompliance.

Note. Figures show the proportion of mothers who reported initial and noninitial use of an intervention type *only* for situations where the child was reported not to comply (proportions for initial use may therefore differ from those reported in Figure 1). An asterisk (*) indicates a significant Domain \times Timing interaction, a plus sign (+) indicates a significant increase from initial to noninitial, and a minus sign (-) indicates a significant decrease from initial to noninitial (all p s < .05).

Table 2
Emotional Differentiation Among Events

Emotional aspect	Transgressive event			$\chi^2(2)$
	Prudential	Moral	Pragmatic	
Fear	30	1	2	49.27***
Anger	3	18	0	26.57***
Disgust	0	0	2	4
Positive emotion	2	3	4	0.68
Immediacy	16	11	1	12.5**
Sternness	12	16	5	5.64 [†]

Note. Numbers represent how many mothers indicated that one event had been a stronger elicitor of a particular emotional aspect than the other two situations. Instances where a mother did not indicate that one event had been a stronger elicitor than the two other events were not included in the analyses.

[†] $p < .10$. ** $p < .01$. *** $p < .001$.

had been a stronger elicitor of that aspect than the two other events.

Mothers were most likely to indicate having been most afraid in the prudential event, $\chi^2(2) = 49.27$, $p < .001$. In contrast, they were most likely to say that they had been more angry in the moral event than in the two other events, Pearson $\chi^2(2) = 26.57$, $p < .001$. Immediacy and sternness were more likely to be

greatest in either the prudential or moral situations, although the trend for sternness was only near significant—immediacy: $\chi^2(2) = 12.5$, $p = .002$; sternness: $\chi^2(2) = 5.64$, $p = .060$. Disgust and positive emotion were unrelated to domain—disgust: $\chi^2(2) = 4.00$, $p = .135$; positive emotion: $\chi^2(2) = 0.667$, $p = .717$.

Age Effect on Domain Differentiation

Initial intervention type. Did mothers of older children show less domain differentiation in their reported initial interventions than mothers of younger children? For each intervention, a differentiation score was created by noting whether a technique was present in all or no situations (= 0, no differentiation), or whether it was present in some, but not all, of the three situations (= 1, differentiation). We then tested the ordinal relation between the differentiation score of each participant and the age group of the child, using Kendall's τ for ordinal association.

Mothers' reported initial use of interventions was overall significantly less differentiated by domain for older children than for younger children, Kendall's $\tau = -.220$, $p = .047$. Mothers of the children in the oldest age group differentiated less than mothers of infants

in the youngest age group, Wilcoxon test: $W = 117.5$, $p = .036$, whereas the mothers in the middle age group did not differ significantly from the two other groups (middle vs. younger: $W = 136$, $p = .079$; middle vs. older: $W = 204$, $p = .88$).

We proceeded to compare mothers in the oldest and the youngest group for differentiated use of each intervention. There was a significant decrease in differentiated initial use of commands, $W = 108$, $p = .007$. In the oldest age group, the majority of mothers reported commands in all three events (prudential: 100.0%, moral: 90.0%, pragmatic: 85.0%), whereas this was only the case for the prudential and moral events in the younger age group (prudential: 73.7%, moral: 73.7%, pragmatic: 47.4%). Distraction also showed a decrease in differentiation, $W = 79$, $p < .001$. Distraction was common in the pragmatic and prudential situations in the youngest age group (prudential: 36.8%, moral: 0.0%, pragmatic: 52.6%), but almost absent from all situations in the oldest age group (prudential: 5.0%, moral: 0.0%, pragmatic: 10.0%).

The relation between child age and differentiated use of reasoning was more complex. Mothers reported use of reasoning was more differentiated in the oldest than in the youngest group, $W = 262$, $p = .017$, and there was an overall increase in the use of reasoning (youngest group—prudential: 10.5%, moral: 36.8%, pragmatic: 5.3%; oldest group—prudential: 25.0%, moral: 45.0%, pragmatic: 25.0%). Yet, as implied by these percentages, the increase in differentiated use of reasoning was not exclusively due to an increased preference for reasoning in the moral event among mothers in the older age group; whereas 30% of these mothers used reasoning *only* in the moral event, 20% used it only in the prudential event and 15% of them used it only in the pragmatic event. Finally, there were no differences between the youngest and the oldest age groups in reported differential use of removal of object, $W = 165$, $p = .44$, or physical restraint, $W = 184.5$, $p = .87$.

There was no evidence of an age effect on change in intervention following noncompliance or on emotional differentiation. The number of intervention types in which a mother showed domain-differentiated change following noncompliance was uncorrelated with age group, $\tau = -.033$, $p = .844$, as was the mean number of dimensions on which a mother indicated emotion differentiation, $\tau = .017$, $p = .88$.

Discussion

The mothers in our study reported differential responding to moral, prudential, and pragmatic trans-

gressions in the 2nd year. This finding is in line with past research involving children at various ages, which has demonstrated that violations of norms in different domains are associated with different social interactions (Killen & Smetana, 1999; Nucci & Weber, 1995; Smetana, 1989; Tisak et al., 1996). Specifically, like previous work, we found that moral transgressions, more than other transgressions, elicit verbal reactions focusing on consequences for the victim, whereas prudential transgressions are more likely to elicit verbal reactions focusing on consequences for the child.

The present study adds to previous work by providing evidence that early maternal reactions differ by domain on several additional dimensions, notably initial interventions, change in interventions following noncompliance, and emotional reactions. These additional sources of information about domain differences may be particularly informative in the 2nd year, due to limitations in children's linguistic abilities.

The present findings are consistent with the theory that systematic differences in early social experiences may allow children to develop distinctions between domains of norms (Smetana, 2006; Turiel, 1983). At least two possibilities exist for why there might be a lag between domain differences in social interactions in the 2nd year and children's ability to draw conceptual distinctions between domains of norms around the third birthday. On the one hand, the information children receive in these early interactions may allow children to notice that the domains *differ* but not *why they differ*. The latter is conveyed the most clearly in the verbal (as opposed to nonverbal) responses to transgression, which 1-year-olds are likely too young to pick up.

Alternatively, the domain differences in early interactions may be such that children need time to pick them up. Despite substantial domain differentiation, mothers' reactions to prudential, moral, and pragmatic transgressions did show some overlap. Clearly, some interventions are more informative than others in this regard. The initial use of reasoning implied a 51% chance of the situation being moral (disregarding for the moment any differences in the baseline frequency of these events). In contrast, the initial use of command implied a 36% chance of the transgression being prudential and a 29% chance of it being pragmatic, which is substantially less informative. One contributor to overlap in maternal differential responding is variation in norm-irrelevant concerns affecting parental interventions, for instance, the desire to reestablish harmony (Ross, 1996). A crucial topic of future research is the extent to which children make use of

the information present in these early, transgressive interactions.

Interestingly, domain differentiation through initial intervention type decreased over the 2nd year. The data support the interpretation that mothers begin to rely more heavily on verbal means of communicating norms toward the end of the 2nd year (see also LeCuyer-Maus & Houck, 2002), thereby letting the verbal content convey the differences between norms.

In contrast to initial interventions, the mothers' emotional reactions were stably differentiating throughout the 2nd year. Overall, our findings support previous claims that emotions may be especially important in conveying information about norms to very young children (Dahl, Campos, et al., 2011; Kochanska, 1994). The current study did not address *how* these emotional reactions were communicated. Given that mothers will often respond to transgressions at a distance, emotional aspects of the mothers' *vocalization* may be an especially important channel for emotional communication of norms (Dahl, Campos, et al., 2011; Dahl, Turiel, & Campos, 2011).

A limitation of the present study is the use of maternal report. As noted, previous research using maternal report gives good reason to think that mothers' reported reactions in the described events were highly similar to their actual reactions. Yet, it would be valuable to corroborate the present findings using observational methods. We are currently conducting a naturalistic home observation study to further investigate the characteristics of mothers' verbal and nonverbal communication of domain differences in the 2nd year, as well as children's responses to maternal interventions. Although several issues await further research, the present study provides the first evidence that 1-year-olds are exposed to information that can help them distinguish between three major domains of norms.

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