Extending Social Domain Theory with a Process-Based Account of Moral Judgments

Cameron B. Richardsona  Kelly Lynn Mulveyb  Melanie Killenb

a Pennsylvania State University, University Park, Pa., and b University of Maryland, College Park, Md., USA

Key Words
Exclusion • Executive functioning • Hierarchical competing systems model • Inference • Moral development • Moral judgment • Reasoning • Social cognition

Abstract
Social domain theory (SDT) provides a model for how individuals identify, evaluate, and coordinate domains of social knowledge when judging socially relevant actions. To date, little research has focused on the cognitive processes that underlie these capacities. Utilizing principles from the literature on SDT and the hierarchical competing systems model, we examine the extant research with a new focus on the process by which domain coordination takes place. We argue for an integrated approach to social cognition that recognizes the cognitive processes involved in domain coordination.

How do we come to a conclusion about the acceptability of an act? Research from social domain theory (SDT) [Killen, 2007; Nucci, 2001; Smetana, 2006; Turiel, 2002] has demonstrated that individuals coordinate domains of social knowledge when making social decisions. Specifically, when making social judgments, individuals take three domains into consideration: the moral domain, which involves issues of fairness, justice, rights and welfare; the societal domain, which is concerned with conventions, customs and traditions; and the psychological domain, which includes issues of personal choice, and individual discretion. While extensive research indicates that children as young as 3 years of age are able to coordinate and weigh these domains differently when making judgments, little is known about the process by which domain identification and coordination take place.

We propose that theories and methods used in studying executive functioning can provide a model for considering SDT from a process-based approach. A robust area of research on executive functioning has revealed the steps that children take when making cognitive judgments [Marcovitch & Zelazo, 2009; Zelazo & Frye, 1998]. The hierarchical competing systems model (HCSM) outlined by Markovitch...
and Zelazo [2009] suggests that two competing systems are at work when making decisions: the habit system, which relies upon previous experience, and the representational system, which is influenced by conscious reflection on behaviors, actions, and events. Moreover, the HCSM model indicates that the habit system can be over-ridden by the representational system, revealing the importance of reflection in social judgments and decision-making.

We propose that the HCSM, and, in particular, the representational system, can and should be applied to social cognitive judgments and decision-making in order to unravel the process of domain coordination. We argue that a theoretically well-specified process account of social cognition will further the SDT’s explanatory power. Indeed, very recent research on the neurophysiological correlates of social cognition reveals processing distinctions between judgments about moral and conventional violations [Lahat, Helwig, & Zelazo, 2010]. In order to make our conceptual argument, we will review both SDT and HCSM. Then, these two perspectives will be used to reframe findings regarding moral judgment and social exclusion in the extant literature. Finally, future directions informed by this integrated account will be proposed.

**Social Domain Theory**

SDT is, at its broadest level, a conceptual framework for investigating how individuals reflect on, evaluate, construe, categorize, and understand the social world [Turiel, 1983]. SDT poses a 3-domain conception of the organization of social knowledge. Specifically, over 30 years’ worth of evidence [Nucci, 1981; Smetana, 2006; Turiel, 1983, 2006] indicates that individuals (children, adolescents, and adults) reason about social events and interactions from three qualitatively distinct domains: the moral (e.g., harm, fairness, rights), societal (e.g., group functioning, traditions, customs), and the psychological (e.g., personal choice and individual prerogatives).

SDT arose from a Piagetian constructivist perspective [Turiel, 1983], which, in its most basic form, proposes that individuals construct knowledge from experience. Kohlberg [1963] argued for a stage theory of moral development, with very young children focused on the self (psychological or personal knowledge), older children and many adults focused on societal expectations and conventions (societal), and few adults ultimately focused on universal ethical principles (moral). Drawing upon empirical findings in childhood, Turiel [1983], in contrast, argued that moral and societal concepts undergo parallel development from the start. Nucci [1981] introduced the psychological domain, identifying areas of personal choice. One outcome of SDT was that the empirical validation of the model also demonstrated that even very young children are capable of making moral judgments.

Empirical research based on judgments and observations of social interactions, comprising over 120 research studies, has shown that individuals coordinate domains of knowledge when evaluating social situations [for reviews, see Killen & Rutland, 2011; Nucci, 2001; Smetana, 2011; Turiel, 2002]. To test the validity of the theoretical propositions, the early research program focused on determining whether individuals drew on these three conceptual categories when evaluating acts that were deemed ‘prototypic’ (i.e., actions that clearly fit within a single domain). For example, do children distinguish between the act of hitting someone on the head for no
The findings indicated that children, adolescents, and adults used a different set of criteria to evaluate the transgressions causing harm (e.g., moral) from transgressions creating disorder (e.g., societal). Further, Nucci [1981] provided evidence that individuals view moral and conventional acts differently than personal acts, which should not be regulated or governed by rules. More recently, research has extended the societal domain to include concerns relevant to group functioning and group identity, which are new areas of the societal domain not previously studied in the initial research program [see Killen & Rutland, 2011]. A key issue, however, is that while research has established that individuals coordinate domains, and then weigh various domain-relevant issues when making social evaluations, very little is known about how this process occurs.

While this process is likely complicated in straightforward or prototypic scenarios, it may be even more complex in multifaceted scenarios, which involve issues that fall within more than one domain [Smetana, 2006]. In the past two decades, researchers have begun to examine such multifaceted scenarios. One such line of research focuses on social exclusion, defined as an instance in which one individual is prevented from taking part in a group or activity [Killen & Rutland, 2011]. The moral, societal, and psychological domains influence how individuals evaluate who to include or exclude in group activities and to judge when exclusion in a social context is legitimate and illegitimate [Killen, 2007; Killen, Richardson, & Kelly, 2010; Killen & Rutland, 2011; Møller & Tenenbaum, 2011; Verkuyten & Slooter, 2008]. One difference between prototypic and multifaceted scenarios is the number of domains one could consider during act evaluation (moral, societal, and psychological). SDT research has framed the cognitive complexity involved in evaluating multifaceted issues as ‘coordination of different considerations’, or ‘weighing of diverse components’ [see Turiel, Smetana, & Killen, 1989].

What is still unknown, however, is precisely how individuals weigh the different domains when evaluating such complex scenarios. Research that can quantify this cognitive process will advance SDT by providing greater insight into the precise ways in which individuals make social judgments. To this end, we will argue that HCSM [Marcovitch & Zelazo, 2009] can prove to be a useful means of analyzing the process underlying social evaluations and judgments.

**The Hierarchical Competing Systems Model**

Marcovitch and Zelazo’s [2009] model, the HCSM, has been applied to executive functioning, the cognitive processes involved in problem solving or acting in a goal-directed manner. The HCSM is founded upon the interplay between two systems: the habit and the representational systems. In short, a stimulus is perceived and acted upon by a habit system (nonreflective) and a representational system (reflective) to different degrees to produce a behavior. The habit system depends upon previous experience, while the representational system takes a critical stance toward past experience through reflection on the current problem.
This model has been used to describe performance on the A-not-B search task. In the task, an infant participates in a number of delayed search trials, where an object is conspicuously hidden behind an occluder (A) over multiple rounds, and is then hidden behind another occluder (B). The task assesses the infant’s ability to represent the new situation (the move to location B). If, in the last trial where the object is hidden in location B, the infants search behind A (an incorrect search response), then they either have not properly represented the new situation, or do not have the capacity to withhold their previously learned response (search behind A). If, on the other hand, they search behind B (a correct search response), then they have represented the new situation properly, and have the capacity to withhold their previously learned response (search behind A).

In this context, the HCSM proposes that the habit system (nonreflective) builds up experience in searching behind A over multiple trials, leading to a greater response tendency to continue searching at A [Markovitch & Zelazo, 2009]. The representational system, in contrast, allows an individual to adapt to changing circumstances, enabling the individual to reflect on and monitor the problem itself, as well as the individual’s actions. Thus far, the HCSM has been applied exclusively to executive functioning tasks, such as the A-not-B task. We propose, however, that similar systems of processing may lie behind social decision-making, and, in particular, domain identification and coordination.

**A Process Account of Social Cognition: Integrating HCSM and SDT**

While social domain theorists have focused on empirically verifying theoretical claims about the existence of domains of social cognition, including how it is that we coordinate domain considerations, cognitive psychologists have focused on the processes behind judgment. Integrating SDT and the HCSM will provide a means of assessing social cognition that draws upon the strengths of each of these approaches. Research from a neuroscientific perspective also suggests the importance of identifying a process-based account of social cognition. Specifically, Lahat et al. [2010] examined participants’ cortical electrical activity during judgments about moral and conventional transgressions. They found greater N2 amplitude (an indicator of conflict processing) in response to descriptions of conventional than moral transgressions, suggesting that domain coordination and identification can be assessed at the neural level.

While the HCSM has, thus far, been solely applied to behavioral search tasks, we argue that it can apply to a broader range of psychological processes, including the coordination of domain considerations (moral, societal, and psychological) within multifaceted scenarios. When thinking about act evaluation, for example, both the habit and representational systems (framed in the HCSM as nonreflective and reflective, respectively) are active, depending on the nature of the event.

We propose, however, a modification to the terminology of the HCSM for application to SDT. Specifically, we frame the habit system as focused on experience. That is, the experience-based aspect of the habit system can help distinguish between situations that align with prior experience (e.g., experience indicates consistently that hitting hurts [Damon, 1977; Turiel, 1983]) and those which do not (e.g., in some contexts, hitting may cause pleasure [Zelazo, Helwig, & Lau, 1996]). Thus, we pro-
pose a new, closer examination of the experience components of the habit system. In line with our revised version of the HCSM, we will refer to the habit system as the ‘experience system’, keeping the terminology of the representational system intact. In doing so, we are not proposing that experience exists without reflection, as all cognitive interpretations of experience include a reflective component. Rather, we identify the experiential nature of the habit system as key for many social judgments.

For prototypic scenarios, we argue that the experience system will be active, given that experience suggests a predictable relationship between actions and outcomes (for instance, returning to the hitting example, if you hit someone, they will feel pain) [Damon, 1977; Turiel, 1983]. What happens, however, in multifaceted scenarios or those that are, in some way, nonprototypic? We propose that the representational system will override the experience system when the scenario in question does not fit with past experiences (e.g., hitting causes pleasure) [Zelazo, Helwig, & Lau, 1996], thereby requiring an individual to make novel and spontaneous judgments (fig. 1). We also argue that the representational system will be active when very familiar considerations (i.e., prototypic scenarios), such as harm, are situated in the context of a multifaceted event (for instance, in an intergroup context). The ability of the representational system to take into account more and more complexity is determined by the attentional resources from which an individual can draw [for neurological correlates of attentional control, see Silton et al., 2010]. Linking the representational system to executive/attentional resources allows for the prediction of developmental change in reasoning. Executive functioning is known to develop throughout adolescence [Gogtay et al., 2004]. Because we argue that the representational system is dependent upon one’s executive functioning abilities, particularly the ability to monitor conflict between competing considerations, we expect developmental patterns to emerge in the recruitment of the representational system when responding to multifaceted scenarios. In other words, with age, we expect that chil-

---

**Fig. 1.** A process-based account of domain coordination. This graphic illustrates the processing of most events; however, some prototypic events may also be processed by the representational system. Additionally, we argue that effective and consistent activation of the representational system will develop with age.
Children will more effectively draw upon the representational system and, thus, may more easily coordinate domain considerations.

We propose, then, a new process-based method for understanding domain identification and coordination in making moral judgments. We suggest that, in most prototypic scenarios, individuals will recruit the experience system in determining which domain to use when making a judgment or evaluation. On the other hand, in most multifaceted and noncanonical scenarios, we expect that individuals will recruit the representational system (and with age, will employ the representational system with increasing skill), which will override the experience system and allow for domain coordination.

**A Case Study: Integrating HCSM and SDT**

The study of Zelazo et al. [1996] on children and adolescents' judgments of harm in canonical and noncanonical scenarios exemplifies our argument for the integration of HCSM and SDT. In this study, according to our analysis, children as young as 3 years override the experience system in the face of nonprototypic or noncanonical situations involving pleasure and pain. Specifically, participants were told about creatures with unexpected reactions to traditional behaviors (noncanonical condition): they feel pain when they are petted and feel pleasure when they are hit. Results indicated that even 3-year-olds were able to predict that someone will be happy when they are hit if they like to be hit. Thus, in this context, participants interpret the act of hitting, which would normally be considered morally unacceptable, as morally permissible, and a matter of personal choice.

We argue that, in making this determination, even very young children are overriding the experience system (which would indicate that hitting is wrong), and instead accessing the representational system. They reflect on the information they have been given and conclude that, in this context, hitting is appropriate. Thinking back to errors in the A-not-B search task, an analogy can be drawn: in order to fully represent the new situation (e.g., hitting causes pleasure; block is behind B), the participant must repress the experience system in favor of the representational system. Framing this in terms of a logic statement (e.g., if-then, therefore), the experience system statement might look something like the following: 'Hitting causes harm, and one should not inflict harm upon others. Therefore, hitting is unacceptable.' In nonprototypic scenarios, a new if-then statement may override the experience system statement. For instance, the following representational system statement may be activated: 'Hitting causes harm, but not for this person. If someone likes being hit, then hitting is acceptable.'

In the experience system, individuals may give weight to a 'should' statement (i.e., 'One should not inflict harm upon others'). Such should statements hinge upon the ability to identify negative intrinsic consequences of actions [Nucci & Turiel, 1978]. Identifying negative intrinsic consequences involves active interpretation of socialization messages [Dunn, 2006; Grusec, 2006], attempts to understand how others are similar to the self [Meltzoff, 2005, 2007] and recognition of the impact of an action on the recipient [Nucci & Turiel, 1978]. It is true, as well, that the consistency of act-outcome relations, particularly in the physical domain, strongly lead to the conclusion that hitting causes harm [Helwig, Hildebrandt, & Turiel, 1995]. In a noncanonical or non-
prototypic scenario, however, additional information indicates that this expected act-outcome relation will not hold. In such cases (for instance, when one learns that hitting, in this context, causes pleasure), the experience system statements, which indicate that one should not hit, no longer possess any logical force because the supportive assumption has been nullified. This leads to the activation of the representational system, and, ultimately, the conclusion that the action (hitting, in this case) is acceptable.

Activation of the representational system, we argue, may often occur when an individual perceives another’s mental state as incongruous with ‘typical’ mental states. Thus, when applying the HCSM to social-cognitive tasks, such as judging the acceptability of actions, we must give consideration to perspective taking, and, in particular, one’s theory of mind. Theory of mind research focuses on origins and development of one’s conceptions of the mental lives of oneself and others, including understanding of others’ intentions, beliefs, and desires [Wellman & Liu, 2004].

It is not the case, however, that the representational system will always be needed. The experience system serves as a powerful and efficient mechanism for social judgment, particularly in prototypic, everyday scenarios. In these cases, one need not activate the representational system or necessarily even think about others’ mental states. It is often the case that hitting causes harm, and as a result, the representational system is not often needed to produce a judgment. In those cases, however, when the context is unexpected or complex, the representational system provides a means for reinterpreting information, enabling one to coordinate domains in a flexible and adaptive manner, instead of relying rigidly on past experience.

Zelazo et al. [1996] also assessed punishment acceptability. Further, they varied the transgressor’s intention (positive or negative), the nature of the outcome (positive or negative), and the causal relations between actions and outcomes (hitting causes pain or hitting causes pleasure). Results demonstrated an emerging ability of individuals to take into account these three pieces of information when deciding whether or not to punish the transgressor. Using conditional reasoning as a model for participant judgments, the authors categorized participants by the nature of their judgments. They found that young adults, as compared to 3- to 5-year-olds, consistently used the conditional statement: ‘If outcome is negative and intention is negative, then assign punishment’ [p. 2487]. In contrast, children more often utilized a simple outcome or intention rule.

In terms of the HCSM, the ‘simplicity’ of children’s reasoning may result from a lack of activity in the representational system. That is, young children may not always activate the representational system, or may employ the representational system to assess only information about intention or outcome, without recognizing the possibility of integrating information about both intention and outcome. An alternative explanation is that the simplicity of children’s reasoning results from capacity limitations in the representational system. That is, while the individual is aware of the need to utilize the representational system, she may not be able to deal with two variables simultaneously (intent and outcome). As mentioned above, it is important to remember that executive functioning abilities continue to develop throughout adolescence; thus, one’s ability to rely upon the representational system may also continue to improve with age. It is possible that the use of both intent and outcome information to judge actions will covary with working memory capacity (e.g., the counting recall task [St Clair-Thompson, 2011]). One prediction from a neuroscience perspective, for example, is that activation in the anterior cingulate cortex, a region
associated with conflict monitoring [Botvinick, Braver, Barch, Carter, & Cohen, 2001], will be associated with both the use of more complex decision rules (e.g., ‘If outcome is negative and intention is negative, then assign punishment’) and the extent to which noncanonical relations are processed as such (e.g., ‘That is odd that it likes to be hit’).

Thus, as exemplified using the study of Zelazo et al. [1996], application of the HCSM to analyses of moral decision-making and domain coordination can provide further insight into the processes and mechanisms behind judgments, reasoning and evaluation. SDT has focused largely on verifying the existence of domains of social reasoning as well as documenting how individuals coordinate domain considerations. There has been less attention given to the cognitive and neural architecture that supports these capacities for distinguishing domains [but see social cognitive neuroscience for an exception, Blair, 2007]. An increased attention to the underlying processes that support the ability to coordinate domains serves to enhance the power of SDT’s account of developmental social cognition.

We move, now, to a reframing of key developmental findings from an SDT perspective, with a focus on the processes by which development proceeds from a reliance on simple ‘if-then’ logic to a more flexible ability to shift between simple and more complex ‘if-then’ logic statements. We separate the literature into a few broad categories in making the case for integrating SDT and HCSM as a way to better understand the processes underlying social cognition, and moral judgments in particular. We will examine studies that look at how participants respond to information from the social environment when evaluating scenarios. For instance, we will look at studies focused on authority dictates, signs of behavioral distress, and peer interactions. We will then examine studies that require individuals to consider knowledge access, both about others’ intentions, as well as the personality characteristics of targets involved in the scenarios. Finally, we will examine a particularly complex form of multifaceted scenarios, social exclusion. Social exclusion involves intergroup components, or situations that require participants to make moral judgments when there are distinct ingroups and outgroups involved, invoking concepts about group identity [Killen & Rutland, 2011]. Examining these three types of scenarios will provide a lens through which to see how a process-based approach to thinking about domain coordination can extend our understanding of social cognition.

**Authority Sanctioning and Prohibition**

Early research by Piaget [1932] indicated that young children often focus on authority mandates when making moral judgments. Research by Nucci [1981] probed children’s reasoning about prototypic events by asking them if an action would be okay if an authority figure condoned it [see also Laupa, 1991]. This research revealed that children made a distinction between moral, personal (psychological domain), and conventional (societal domain) acts regarding authority jurisdiction. The findings indicated that moral acts would not be okay, even if an authority figure condoned the act. In contrast, conventional acts would be evaluated negatively only in the presence of authority prohibition. Further, personal acts were viewed as those acts that should not be regulated by authority figures (due to individual discretion and personal choice). This suggests that one way of more precisely understanding the
process behind domain coordination is to examine how children respond to author-
ity sanctioning and prohibition of actions.

Focusing on authority prohibition as a means of evaluating actions, Smetana
[1985] interviewed children ranging in age from 38 to 76 months about unspecified
actions (i.e., actions identified by nonsense words). Results revealed that when ac-
tions were not consistently prohibited (i.e., they were prohibited by one, but not an-
other authority figure) they were evaluated as more permissible and less serious than
the actions that were consistently prohibited (i.e., those prohibited by more than one
authority figure). Information about the consistency of the prohibition, then, is used
to judge the acceptability of an action.

Why might consistency of prohibition result in different evaluations of an un-
specified action? One possibility is that the results hinge on the participants’ percep-
tion of the authority figures. With no information about either the authority figures
or the nature of the action, a participant may fall back on the experience system,
which for many children might result in a belief in the legitimacy of the prohibition
when there is convergence across multiple authority figures (e.g., if multiple author-
ity figures prohibit an action, it is wrong). Research by Laupa [1991] supported this
interpretation given that children who were probed about different levels of author-
ity figures (peers and adults) made these distinctions with age.

With disagreement between authority figures, though, the representational sys-
tem may have become activated. In these contexts, a new conditional statement may
be used: if some authority figures condone and some prohibit an action, the act may
be permissible. In terms of the HCSM, novel hypotheses are identified for future study.
One hypothesis, hinging upon the function of the canonical nature of past regulation,
is that a child’s past experiences with authority figures will influence the perception
of the legitimacy of the current prohibition [for evidence of a link between attachment
style and a child’s internal working model of social interaction, see Johnson et al.,
2010]. If for instance, one authority figure that is known for idiosyncratic regulation
of actions prohibits a novel action while another, less idiosyncratic, authority figure
does not prohibit the same action, the child may look to the less idiosyncratic author-
ity figure for guidance. There is evidence in the literature on word learning and trust
that children are actively engaged in identifying reliable sources of information [Jas-
wal & Neely, 2006]. Whether Smetana’s [1985] findings would shift when children re-
ceive past information about idiosyncratic prohibitions remains to be seen.

Some research on authority figures indicates that, even in prototypic scenarios,
the representational system may be activated [Killen, Breton, Ferguson, & Handler,
1994; Nucci, 1984]. Killen et al. [1994] asked preschoolers to evaluate teacher re-
sponses to prototypic social-conventional or moral classroom transgressions, find-
ing that children expected domain-consistent responses from authority figures. Spe-
cifically, if a social-conventional transgression occurs, such as standing rather than
sitting at juice-time, children prefer to hear a social-conventional explanation, for
instance ‘you shouldn’t stand because it makes a mess’ as opposed to a moral expla-
nation such as ‘it’s not fair to the other children who are sitting’ [Killen et al., 1994].
Children prefer the social-conventional explanation because it is consistent with the
nature of the transgression. Additionally, if a moral transgression occurs, such as
hitting another child, children prefer to hear moral messages in response, such as
‘you shouldn’t hit because the other child will get hurt’ over social conventional re-
sponses, such as ‘you shouldn’t hit because it will make a loud noise’.
It is likely, then, that children turn first to the experience system when evaluating transgressions (as in ‘Hitting causes harm, therefore, it should be prohibited because it is physically harmful’). When children receive messages from authority figures that challenge these conditional statements this creates some level of cognitive dissonance, activating the representational system. The representational system then allows children to recognize that, even though an authority figure is suggesting a domain-inconsistent response, the experience-based conditional statement (i.e., hitting causes harm) stands up to the inconsistent message. Thus, at times, in prototypic scenarios, children activate the representational system, and use this system to override inconsistent authority messages, based on reflection on the context.

**Behavioral Distress**

In many situations, individuals can expect that if someone is crying then they have been harmed. The experience system can rely on this simple conditional statement when an individual evaluates the acceptability of many actions in prototypic (single domain) contexts. Research suggests that, reflecting this supposition, children often do rely upon external signs of behavioral distress in judging situations when other information is not available.

Returning to Smetana’s [1985] study, we can see evidence consistent with the notion that children use the experience system when evaluating uncertain behaviors. In addition to assessing authority prohibitions, Smetana [1985] also examined behavioral distress. When actions were described as resulting in another’s distress (i.e., crying), they were evaluated as less permissible and more serious than when actions did not result in another’s distress. Similar to the consistency of prohibition conditions, one might expect that this result is an artifact of the lack of information about the ‘victim’. One testable implication is that participants may rate the novel action as more permissible than reported in this study when they know that the ‘victim’ cries in response to almost any act directed at her (e.g., ‘Sally cried after Patricia said hello to her’). Taking a term from Zelazo et al. [1996], knowledge of this ‘noncanonical’ crying response may alter the extent to which the participant views the ‘victim’’s cries as being caused by harm as opposed to some idiosyncratic, non-harm-based cause. From an HCSM perspective, this lack of information about the action and the actors involved may activate the representational system, given that atypical reactions cannot be identified without context. Without information upon which to make a judgment, we propose that the representational system will allow the experience system to fill in gaps in the story in order to make a judgment.

Supporting this idea that the representational system will aid individuals in justifying their judgment, only when victim distress was present were participants able to justify their negative act evaluations in the consistent prohibition condition. Specifically, concerns about the victim’s welfare were mentioned by more than half of the participants when the child victim showed distress. In contrast, when no victim distress was mentioned, more than two-thirds of participants could not justify why they rated the act negatively. One explanation for this finding is that while consistency in prohibition is used to evaluate actions, it is the presence of behavioral distress, and the inference that this distress is legitimate, that allows for the justification of the evaluation. This may suggest, then, that behavioral distress activates the rep-
resentational system as a means of enabling individuals to reason about this issue as a moral issue. When authority prohibition alone is present, the experience system may indicate that there is not enough information to distinguish if the action is moral or societal, because, for instance, experience suggests that teachers often prohibit both moral (no pushing) and conventional (no gum chewing) behaviors. This is consistent with the theoretical account of the distinction between the societal and moral domains. Specifically, behavioral distress serves as an indicator of the negative intrinsic consequences that result from an action, a hallmark of the moral domain [Nucci & Turiel, 1978; Turiel, 2006].

Returning to an integration of HCSM and SDT, reasoning or justifying one’s judgment very likely activates the representational system more heavily than if participants were only asked to judge the acceptability of an action without justification. From this perspective, simply asking for justifications for judgments may serve as an intervention that serves to boost reflection during judgment. For example, imagine an individual who relies heavily on her experience system. If she is encouraged to reason about or justify her thinking then this will likely activate the representational system and allow for more nuanced judgments. To the extent that conscious reflection assists in social judgment given ambiguous information, asking for justifications for judgments might serve as one way to boost the propensity to reflect upon judgments. This could be particularly helpful, for instance, in combating reactions based on stereotypes. Turning to a stereotype in making a judgment may reflect a reliance upon the experience system to fill in where relevant information is lacking (as in, the girls I know are X, therefore this new girl I have encountered is likely also X). Reasoning about such a judgment may lead to activation of the representational system, which could lead to a shift away from a reliance on stereotypes (as in, while the girls I know are X, there is no evidence that in this context this new girl is X). We will return to this issue more explicitly when examining intergroup contexts and, in particular, the use of stereotypes in reasoning [Killen, Pisacane, Lee-Kim, & Ardila-Rey, 2001].

For the studies we have examined thus far, conditional statements can clearly help one in making a judgment. For instance, hitting is evaluated as a moral transgression, except in cases in which a target desires to be hit, indicating the following: ‘If outcome is negative and intention is negative, then assign punishment’ [Zelazo et al., 1996, p. 2487]. To this point, the studies reviewed indicate that both children and adults process actions that lead to another’s distress as being unacceptable. A conditional developed to model the above studies might look something like the following: ‘If someone is crying then they have been harmed.’ In fact, research suggests that it is not that simple: Some studies indicate that behavioral distress is neither a necessary nor sufficient condition for identifying a moral transgression [e.g., Leslie, Mallon, & DiCorcia, 2006; Shaw & Wainryb, 2006].

The ability to identify negative intrinsic consequences of actions is important when evaluating the moral relevance of actions. What has only recently been considered is the complexity of the task of identifying when distress implicates victimization, as individuals can show distress in many scenarios in which there is no legitimate harmful outcome. Leslie and colleagues [2006] compared judgments of 4- to 6-year-olds in a prototypical unprovoked hair-pulling scenario (a victim cries as a result of getting her hair pulled) with judgments in a scenario in which distress does not correspond to victimization (a ‘victim’ cries upon being thwarted in her attempt
to eat both her own and another child’s cookie). The harm without victimization condition was labeled the ‘cry baby’ condition [Leslie et al., 2006]. As expected, results revealed that children evaluated pulling hair as negative, which is consistent with the behavioral distress account developed above, and likely involves the activation of the experience system. More importantly, however, results reveal that children evaluate eating one’s own cookie as positive, even if eating the cookie makes someone cry. This finding is of theoretical interest, as it requires that participants make a decision about whether the act of eating one’s cookie is morally relevant given that eating one’s cookie caused the ‘victim’ distress. This study indicates that children seem to be able to flexibly employ an ‘If distress, then harm’ conditional, likely through activation of the representational system.

What is it that helps children flexibly apply knowledge of behavioral distress when trying to infer victimization? Children may view the act of eating one’s own cookie as a personal domain issue, and, therefore, may consider another’s distress in response to action in the personal domain to be illegitimate. From an alternate frame of reference, consider what it would mean for the cookie owner if the teacher required her to give her cookie to the ‘cry baby’. In this scenario, the cry baby would be appeased, but it is not difficult to see how this appeasement results in the legitimate victimization of the cookie owner; she did not get a cookie, while the cry baby got two cookies. It may be obvious, then, why property rights, and a qualified right to self-determination are so important in a functioning society – you have a right, when given a cookie, to eat that cookie despite protestation by others [see Kahn, 1992 for an exposition on obligatory and discretionary moral judgments].

From a conditional reasoning account, the following statement is consistent with the finding that children can subordinate distress cues in favor of property rights: ‘If an agent’s distress is caused by an inability to violate another’s property rights, then the agent’s distress is illegitimate. Therefore, any distress exhibited by the actor does not imply harm or injustice.’ This conditional is consistent with the varied responses to eating cookies and pulling hair: in the former, the ‘transgressor’ was within her rights to eat her own cookie; in the latter, the transgressor was not acting on her own personal property, but rather had acted on another’s hair. Note too that the power of the personal domain and the need for control over aspects of one’s life, including the importance of property rights, is a robust and culturally universal finding [Deci & Ryan, 2011; Helwig, 2006; Nucci, 2001].

Finally, while the importance of the personal domain cannot be understated, it is important to mention that these considerations do not address need-based considerations (i.e., a malnourished child cries when she cannot have more than her ‘fair share’ of cookies). Given scenarios in which the needs of individuals vary, evaluations of distress will likely vary in kind. Thus, the more complex the scenario (and the more considerations that are taken into account), then the more active the representational system becomes.

As written about elsewhere, the personal domain does not deal exclusively with issues of property rights [Nucci, 1981, 2001]. Instead, the personal domain deals with issues viewed as under the control of the individual. As mentioned above, self-determination is not boundless, but rather is restricted to contexts in which self-determination will not negatively infringe upon others. The implication here is that everyone has both a right to self-determination and to be free from harm caused by others’ actions.
Peer Reactions to Illegitimate Requests

Given the importance of self-determination, how do individuals process scenarios in which compliance is illegitimately requested? Is noncompliance always viewed as unacceptable, or does the individual take into account multiple competing considerations? Shaw and Wainryb [2006] studied children’s and adolescents’ reactions to compliance to unfair and demeaning requests (e.g., ‘Give me your seat in the lunchroom’). Interestingly, while even 3-year-olds judged the requests to be unacceptable, only at 6 years of age did participants begin to judge reactions to compliance in a manner similar to adolescents. The study design allowed participants to judge resistance, compliance, and subversion to these unfair requests. Results revealed that more than 80% of 5-year-olds attributed sadness to victims who resisted, compared to only 10% of 16-year-olds, who more often opted for accomplishment as the emotion that would be felt. In contrast, for victims who complied, 5-year-olds were equally likely to attribute sadness and prosocial emotions to the victim, whereas more than half of the 16-year-olds attributed fear to compliant victims.

Shaw and Wainryb [2006] proposed that evaluations of subversion, compliance, and resistance depend on the extent to which a participant can coordinate the nature of the request and the response to the request. Given this discrepancy in emotion attribution at the different ages, it may already be clear that, for the youngest age groups, victim status was perceived as freely chosen prosociality when the victim complied with the transgressor’s unfair demands. Indeed, 5-year-olds evaluated compliance as the most positive response to a transgressor’s unfair demands, whereas 16-year-olds evaluated resistance as the most positive response.

This study and the study by Leslie et al. [2006] focused on responses to unfair requests (Give me your seat, Give me your cookie). Why, then, might there exist a 2-year difference in the age at which children begin to positively evaluate resistance (4 and 6 years of age, respectively)? We propose that the disparity may have resulted from the fact that Leslie et al. [2006] included an authority figure that condoned eating one’s own cookie, while Shaw and Wainryb [2006] did not include authority sanctioning for resistance to the requests.

Returning to our integrated process account, when an unjust demand is made that infringes upon another’s rights, for children aged 6 and above, the representational system is activated. Individuals perceive that compliance is unacceptable if an agent’s request will violate another’s property rights or autonomy. In contrast, for younger children, the experience system alone may be activated, indicating that one should comply with all requests, regardless of the implications for rights. Thus, the findings indicate a developmental change in the strength of activation of the representational system. That is, children older than 6 years, as well as adolescents, may have been able to reflect upon and override an experience-based ‘compliance is good’ assumption. Whether these developmental trends in what we argue is increased activation of the representational system emerge as a result of maturation or social experience remains to be seen.
Knowledge Access

Intentions

Despite the primacy of the claim to personal property rights in both the cookie-eating and chair-taking scenarios, there is an underlying assumption that in both cases the target has positive intentions. We argue that intentionality, however, can alter the activation of the representational system and shift the domain identification of an evaluation or judgment. For instance, if the cookie eater is portrayed as having negative intentions (e.g., I know that you ate your cookie and that you will be upset if I eat my cookie in front of you. I eat my cookie in front of you in order to cause psychological harm), the act of eating one’s cookie should be evaluated as unacceptable, because harm is intentionally caused.

Actor intentionality drives a large percent of the variance in moral judgments [Nobes, Panagiotaki, & Pawson, 2009]. Thus, even if a victim does not cry, the perception that an actor intended to bring about harm is often enough to judge the action as unacceptable. This ability to judge the psychological and often unobservable statements of mind, such as beliefs, intentions, and desires, emerges with age and experience [Wellman & Liu, 2004].

Research indicates, importantly, the role of intentionality in making moral judgments. For instance, Shiverick and Moore [2007] showed that children and adults can distinguish their own understanding of a character’s intentions and the understanding held by an adult (a teacher) with different access to information about what has happened, and can use this information to inform their moral judgments. Specifically, in this study, participants assessed scenarios in which they had access to information about an actor’s intention (positive or negative) and the outcome of an event (neutral or negative). Participants were asked to make their own moral judgments about the actor’s action. Additionally, they were told about an authority figure that either had access to information about the intention only, the outcome only, or both the intention and the outcome. Participants also assessed the authority figure’s moral judgment (i.e., How good or bad does the teacher think the actor is?). While younger children were more likely to attribute a belief about intentions that did not match the prior information given in the story, both children and adults were shown to use information about intentions in making moral evaluations. Thus, it seems that, at times, younger children may have been unable to override the experience system, which likely encouraged a focus on the outcome (If the outcome is bad, then the intentions and action are bad), while older children and adults were able to activate the representational system more consistently. They employed the representational system to consider the context, which resulted in coordinated moral judgments.

Recent research has also examined the role of intentions in making moral judgments about act acceptability and punishment acceptability, revealing the importance of social-cognitive skills (theory of mind) in judging intentions [Killen, Mulvey, Richardson, Jampol, & Woodward, 2011]. In this study, children were asked to judge a multifaceted scenario, where one child, in trying to help clean up the classroom, infringes upon another child’s property rights by throwing away a paper bag containing the victim’s cupcake. Results indicate that, with false belief competence, children were able to recognize the accidental nature of the transgression, and the positive intentions of the transgressor. Those participants with false belief theory of
mind advocated for less punishment for the transgressor than did participants without false belief theory of mind. Interestingly, however, even those participants with false belief competence evaluated the act itself negatively.

These findings are consistent with the notion that the experience system was activated in all children (e.g., it is wrong to damage someone else’s property), but that the representational system was only fully activated among those children with false belief competence and only when the children were prompted to consider punishment acceptability. Thus, the representational system allowed participants with false belief competence to override the conditional statement against damaging another’s property, by taking intentionality into account (e.g., even though the property was damaged, the intentions were positive, therefore the actor should not be punished). This suggests, then, that attempts to encourage children to consider intentionality and to weigh the specific context may aid in activating the representational system, and, consequently, lead to more reflective and nuanced moral judgments.

**Target Characteristics**

Access to information can take a variety of forms. While intentionality information is important in making moral judgments, it also requires complex social-cognitive skills to interpret. In the absence of information about actor intentionality, many participants will draw on other sources of information. For instance, a recent study by Park and Killen [2010] sought to compare the acceptability of social exclusion when the only information available to participants was the target’s personality (aggressive or shy). Results revealed that exclusion based on aggression was seen as more acceptable than exclusion based on shyness. In this case, when participants are only given information about the target’s characteristics, they likely rely primarily on the experience system. Based on experience that indicates that aggression is harmful, they may decide to exclude this individual.

While the above judgments revealed a difference in exclusion acceptability between aggressive and shy targets, some characteristics may require further information to allow a conclusion about whether exclusion is warranted. It is possible that without sufficient information, moral concerns for the target will remain the most pressing, resulting in negative judgments of exclusion. One piece of information we propose is important to the judgment of whether exclusion is warranted is the group’s goals through which an individual can judge whether a target will help or hinder the group’s functioning. As stated above, research by Killen and colleagues has extended the societal domain to include concerns about group goals and group functioning, as these considerations involve conventions, customs, and norms about how groups function [Rutland, Killen, & Abrams, 2010].

A recent study [Richardson & Killen, in preparation] sought to more thoroughly test this aspect of exclusion by examining group goals as a pivotal decision point for adolescents when making decisions about membership in group activities. Adolescents ranging in age from 12 to 18 years (n = 200) were asked to assess one of two exclusion scenarios that varied the competitive nature of a soccer club. All participants were asked to rate the acceptability of excluding 6 different targets that were described by different traits: gender, hair length, nationality, physical aggression, shyness, and soccer ability. If adolescents use target characteristics to infer whether
a group will likely function well with the respective targets, and, further, if adolescents are concerned about group functioning (as has been shown in previous research [Horn, 2003]), then certain expectations can be defined for acceptability judgments. As an example, it was expected that ability information would be weighed more heavily when evaluating a competitive compared to a noncompetitive group.

Findings indicated that group goals and target characteristics interacted to influence exclusion judgments. Specifically, it was found to be more acceptable to exclude a soccer player with low skills from a competitive than from a noncompetitive context. In contrast, it was expected that exclusion based on hair length would be seen as unacceptable no matter the group goal, given that there was no reason to believe that this characteristic would negatively impact either the competitive or non-competitive group’s goal. This expectation was confirmed.

Given that ethnic and gender stereotypes were expected to influence some participants, it was unclear how exclusion based on these characteristics would compare to exclusion based on ability or hair length. Results revealed that exclusion based on nationality was seen as equally unacceptable to exclusion based on hair length, suggesting that participants were not able to identify a way that one’s nationality could negatively influence either a competitive or noncompetitive group’s goal. In analyzing justifications for judgments regarding the acceptability of excluding someone based on nationality or the length of their hair, most participants cited harm to the target, or stated that the exclusion criterion was arbitrary, and therefore unacceptable. An example of a 7th grader’s moral justification that focused on the arbitrariness of excluding based on the length of someone’s hair follows: ‘That’s not fair. They can pull it up. Hair doesn’t matter in sports, having fun does.’ Finally, and consistent with expectations and prior research [Park & Killen, 2010], participants were most likely to accept exclusion of a physically aggressive target, overwhelmingly justifying their judgment by citing group functioning concerns. An example of a 7th grader’s group functioning justification follows: ‘Because [the group] might be disqualified if he/she gets into a fight.’

It appears, thus, that participants activated the representational system in evaluating these target and context scenarios, reflecting not only on the target characteristics, but also their fit within the given context. Thus, while an individual might rely upon a simple conditional statement in the absence of context (e.g., exclusion is hurtful, and is, therefore, not acceptable) when provided with context, they have the opportunity to evaluate multiple variables in their judgment, employing more complex conditional statements (e.g., exclusion is hurtful, but if the target harms group functioning, then groups have the right to exclude).

Whether these context-by-characteristic findings would hold with a younger sample remains a line of inquiry worth pursuing. Younger children have had fewer years to experience exclusion in a competitive context, develop opinions about the acceptability of certain types of exclusion, and figure out how to coordinate information [Shaw & Wainryb, 2006]. Further, we argue that activation of the representational system is related to executive functioning abilities, which are still developing in young children. Thus, children may only activate the experience system, and, accordingly, evaluate exclusion as unacceptable over a range of target characteristics and group goal conditions.

Much of the work on social exclusion from a social domain theoretical perspective has focused on the target’s characteristics as a means of assessing exclusion ac-
ceptability. The study of Shaw and Wainryb [2006] on resistance, compliance, and subversion and the literature on lying [Perkins & Turiel, 2007] provide a fruitful model for considering whether evaluations of the process of exclusion itself are important for decision-making. That is, do individuals think that subverting a target’s request for inclusion is acceptable, or do they believe that targets have a right to be overtly rejected from the group? What about compliance with a target’s request to join a group? These questions raise a new set of issues to weigh which include group identity and group dynamics [Rutland et al., 2010], a central aspect of intergroup decisions that also involve moral judgments.

**Intergroup Contexts**

While we have addressed the dependence of the ability to evaluate an action on the information to which individuals have access, we have only briefly touched on the group knowledge that individuals bring to an evaluation. Judgments and evaluations in intergroup contexts that involve morality include those in which a group holds a value that is in contrast to an individual belief about justice and fairness. We propose that within these contexts, the HCSM can help to elucidate judgments that are made.

The research reviewed above required the consideration of multiple variables. Multifaceted scenarios, including intergroup contexts, require the consideration of multiple domains (moral, societal, psychological) as well. In order to make a judgment about the acceptability of an act in multifaceted scenarios, one must coordinate and resolve multiple domain concerns (e.g., ‘do the moral concerns outweigh the concerns for group functioning/personal choice?’).

From the perspective of HCSM, evaluations of multifaceted scenarios, such as intergroup encounters, will pose greater challenges to children given the complexity of coordinating domain considerations and information [Theimer, Killen, & Stangor, 2001]. One of the first studies to look at social exclusion in intergroup contexts from a social domain theoretical perspective was conducted by Killen et al. [2001]. In this study, 4- and 5-year-olds judged the acceptability of exclusion based on gender. For example, they were told that:

A group of girls is playing with dolls. John comes over and asks if he can play. Two of the girls say that John cannot play because he is a boy. Is it all right or not all right for the girls to tell John that he cannot play? Why or why not? [p. 590]

Findings revealed that more than 80% of children judged exclusion to be wrong, with the most often cited justification being moral reasons. In this case, we argue that children relied upon the experience system and the simple conditional statement that ‘Exclusion is psychologically harmful, therefore one should not exclude’.

Many contexts do not involve the option to include everyone, however. Thus, the researchers also asked participants to choose to include one target and exclude another, when two individuals desired entry (‘A girl and a boy both want to play; who should the group choose?’). This reflects a more complex decision-making process, as children had to weigh information about group functioning and equity. In this case, children used conventional, moral, and psychological reasons to decide what to do. Some responses reflected a coordination of variables ['Pick the boy to give him a chance to play (moral) even though he might not know how to play with dolls (con-
ventional)’] and other responses relied on single-component perspectives ['Pick the girl because boys do not like dolls (conventional)].

These scenarios force individuals to consider concerns about group functioning, on the one hand, with concerns about psychological harm to the target and information about the salience of group identity (gender in this case), on the other hand. The question that arises is whether, and under what conditions, children accept gender identity as a relevant piece of information, or when gender stereotypic associations become sufficiently predictive of reductions in group functioning to justify exclusion. The forced choice (girl or boy) exclusion scenario revealed that about half of the sample chose the stereotypic child for the play activities. Not only did this result enable the researchers to begin to quantify a threshold by which either gender stereotypes or group identity concerns become more compelling than moral concerns to the target, but this split in responding enabled the researchers to test whether moral or conventional concerns were weighed more heavily by the children.

In the one-person target exclusion scenario, children overwhelmingly rejected exclusion because of moral concerns for the target, while in the forced choice exclusion case, they were split about whom to include, as moral concerns were prevalent no matter which target was chosen. Thus, in the forced choice scenario, as participants recognized that harm would result from either choice, group functioning and group identity concerns were weighed more heavily, as measured by the number of children choosing to include the ingroup member.

The researchers were also able to test how strongly the children held to their initial judgments when faced with either a moral or conventional counterprobe. For children who initially chose the stereotypical child to play, the interviewer asked participants to consider that someone might want to include the nonstereotypical child as that child does not often get an opportunity to play the activity (moral probe). Likewise, if the child initially chose the nonstereotypical child to play, the interviewer asked the participants to consider that someone might choose the stereotypical child as that child is the one who usually plays with the toy (conventional probe).

Results revealed that children were more likely to switch their choice of whom to include from stereotype to nonstereotype than from nonstereotype to stereotype. More than half (61%) of children chose the nonstereotypical child after probe. In this case, it seems that the counterprobe indicating that the nonstereotypic child rarely gets the opportunity for participation was a more salient equity-based consideration that, when activated, influenced judgments more than stereotypic considerations. Thus, the counterprobe may have activated the representational system, encouraging children to move from an experience-based response that prioritized the child who fit the stereotype about the activity to a reflection-based response, which took into account equity issues surrounding play activities.

From an HCSM perspective, we argue that evaluations of the acceptability of social exclusion require a new level of consideration of both the excluding party (group functioning, personal choice) and the target of exclusion (moral). In the above study, in the one-person target exclusion scenario, no information was presented beyond the target’s desire to play with dolls. Without more information, the judgment activated may be something like the following: ‘If no group functioning concerns are present, then exclusion is unacceptable.’ Twenty percent of children, however, accepted exclusion in this case, indicating that they were working with a different set of assumptions that identified a group functioning concern. They may have been
working with a stereotypic conception of groups: ‘Boys do not know how to play with dolls. People who are not good at activities will make the group less fun. Because he is a boy, it is okay to exclude him from a doll playing group.’ In the forced choice scenario, group identity is heightened (choose between a girl or boy), thus stereotypic conceptions of groups became more active, leading to increased concerns about group functioning.

The relation between stereotypic conceptions and group functioning deserves further elaboration [Killen et al., 2010]. Many researchers have shown that children have stereotypes about individuals based on group membership [Bigler & Liben, 1993, 2006; Greenwald, McGhee, & Schwartz, 1998]. Stereotypic conceptions of groups likely derive their strength from the extent to which the stereotype is in some way linked to reductions in the group’s functioning (e.g., boys are rowdy, and they would make it hard to discuss books during book club).

In another recent study [Killen, Rutland, Abrams, Mulvey, & Hitti, submitted], children and adolescents were asked to evaluate intra- as well as intergroup exclusion. Participants assessed whether it was all right for a group to exclude an ingroup member who violated the group norm, and whether it would be permissible to include an outgroup member who was supportive of the ingroup norms. Two types of norms were examined: moral (allocation of resources) and conventional (traditions about dress codes). The findings indicated that participants approved of choosing an outgroup member who supported the ingroup norms in cases in which the norm was to distribute resources equally (and the deviant ingroup member did not want to distribute it equally); in contrast, participants were more willing to choose an ingroup deviant who violated an ingroup dress code norm. With age, children used multiple forms of reasoning to evaluate exclusion across a range of contexts in which groups had group goals that varied by the domain. These findings point to the necessity to more closely examine the role of group goals when evaluating exclusion.

Moreover, the research evidence is consistent with the development of children’s and adolescent’s flexible representational system, which is most active when evaluating complex scenarios such as these. Instead of rigidly maintaining a preference for the ingroup or a reliance upon stereotypes about the outgroup, participants took context into consideration, reflecting upon the potential impacts of their choice on the group dynamics and the moral or societal implications of their decision. Thus, while intergroup contexts are clearly more complex than prototypic scenarios, and involve the weighing of different domains and different claims, analyses of these contexts can also be viewed through an integrated lens, incorporating both SDT and HCSM in moving towards a process-based account of moral judgments.

**Conclusions and Future Directions**

We propose a process account of social judgment, particularly in situations that are multifaceted, such as intergroup contexts, or nonprototypic, such as when behavioral distress does not align with the context. We argue for an integration of SDT and HCSM with a greater focus on the process that supports social judgments. Recent findings from Lahat et al. [2010] confirm the significant relationship between these models for explaining different processes in interpreting moral and conventional violations. Results from the extant social judgment research reveal that individuals
make use of certain pieces of information in a highly consistent manner, which depends on the ability to coordinate concerns about harm to others resulting from actions, the need for smooth social functioning, and the desire for individual autonomy. We argue that social judgments and domain coordination can be modeled through the lens of the HCSM. Processing social situations involves at least the consideration of the three domains: moral (harm, unfairness), societal (conventions, group functioning, customs) and psychological (personal choice). We propose that the psychological domain can include mental states (e.g., beliefs, desires, intentions) for some contexts as well, although this requires further empirical justification.

While the considerations of harm to others, actor intent, and actor’s knowledge access assist an individual in judging whether an action should be considered morally relevant, many moral judgments also require considerations of group-functioning, group identity, and societal expectations. In these cases, then, a balancing of harm considerations with group functioning and group identity considerations is necessary. We argue, then, for an increased focus on the underlying process by which information presented to participants is utilized in the formation of a judgment. This focus has revealed that, while used in a largely consistent manner across individuals, information is, nonetheless, interpreted from different frames of reference, leading to different judgments. The evidence presented on judgments of exclusion supports this contention. Thus, our integrated process-based account serves as a means of discerning how individuals are weighing these different concerns when making social and moral judgments. Beyond the utility of HCSM to model social judgments, we believe that this integration of SDT and HCSM is consistent with theorizing from social-cognitive neuroscience [Lahat et al., 2010]. The representational and experience systems are theoretical constructs that will only serve the field well if they provide guidance to empirical inquiry. Social-cognitive neuroscience may be in a unique position to capitalize on the measurement of these theoretical constructs given its focus on identifying unique neural correlates of behavioral, cognitive, and emotional experience. For instance, given that the anterior cingulate cortex has shown activation during conflict monitoring tasks [Botvinick, Braver, Barch, Carter, & Cohen, 2001], it may serve as a measure of representational system activity. Thus, while we provide a framework for a process-based account of moral judgments, more research will be needed to unravel with greater precision how, exactly, to know which system is engaged at any particular moment.

Further, our process-based account indicates the importance of the development of cognitive abilities and skills for accurate identification and coordination of the domains, particularly in complex or multifaceted scenarios. While we draw upon the HCSM, which has been employed previously to examine development of executive functioning abilities [Marcovitch & Zelazo, 2009], it is likely that improvements across many cognitive abilities will add in more accurate and effective activation of the representational system. Thus, future research should examine how age-related growth in cognitive abilities, such as executive functioning, and working memory, as well as social cognitive abilities such as theory of mind, are related to individuals’ abilities to make complex social judgments and to engage in contextualized moral reasoning.

Our aim has been to provide new insights into the nature of the social cognitive underpinnings that support the ability to make domain distinctions, and social and moral judgments more generally. We hope that this new proposal for an integrated approach to social decision-making will provide a starting point for a number of fruitful new collaborations between cognitive science, SDT, and social cognitive development.
References


