

Flexible Concern: The Development of Multidetermined and Context-Dependent Empathic Responding

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ABSTRACT—*Research on empathic development, though extensive, has largely overlooked two vital facets of flexible empathic responding—multideterminism (which is elicited in response to various cues) and context dependence (i.e., empathic responding that can be regulated depending on contextual factors). Within a dual-process account of empathic responding (in which both bottom-up and top-down processes contribute), such flexible empathic responding relies heavily on top-down processes. Yet most developmental research has not systematically considered the role of top-down processes in bringing about multidetermined and context-dependent empathic responding; as such, it provides a narrow view of early empathic responding. Recent research has begun to fill these gaps and suggests that top-down processes are involved even in early flexible empathic responding. But much more work is needed, particularly on developmental mechanisms and the development of top-down processes, to understand fully the origins of flexible concern.*

KEYWORDS—*empathy; sympathy; flexible concern; dual process; prosocial behavior*

Responding empathically to and caring about others is a fundamental human capacity. Empathic responding includes both empathy, the affective response that stems from comprehend-

ing another's emotional state and is similar to what the other is feeling, and sympathy, the feeling of concern for a person in need (1, 2). Empathy and especially sympathy lead to prosocial behaviors and away from antisocial behaviors (3). Thus, we must understand the development of empathic responding.

Decades of research suggest that even young children show concern for those in distress, such as someone who bumps her knee and shows pain (4). However, this work has largely overlooked two vital features of mature empathic concern: multideterminism and context dependence. These features lead to flexible concern (i.e., concern that can be elicited across situations but can also be modified to suit different circumstances), making concern a powerful social motivator. Yet little research has charted the ontogeny of these features, resulting in a limited picture of early empathic responding. More generally, taking a developmental perspective helps us understand the components that make up a mature system, and how those components emerge and interact in ways that may not be possible when the components are mature (5).

Previous studies have considered the emotional, social, and cognitive factors that likely feed into flexible early concern, demonstrating that emotional knowledge, social understanding, and perspective-taking skills all relate positively with children's empathic capacities (6, 7). However, nearly all this work has been correlational, making it difficult to draw causal or mechanistic conclusions. Moreover, although recent reviews mention the importance of flexible empathic responding (8), they nonetheless have focused on the classical elements of early empathy: affective resonance, differentiation between self and others, and context-neutral regulation of emotions (described later). In this article, I expand the framework of early concern and posit that empathic concern may be both determined by multiple factors and depend on context, even in early childhood (with a focus on the first 3 years).

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I first describe multidetermined and context-dependent empathic responding, drawing on developmental theories that touch on these themes. I propose that within a dual-process account (wherein both bottom-up and top-down processes are involved in bringing about empathic responding), multidetermined and context-dependent empathic responding is generated primarily by top-down processes. I then review recent empirical work that speaks to these two features of flexible concern in early development, with the goals of situating this work into a larger theoretical framework, highlighting the implications of the work, and spurring theoretically informed research. I end with a discussion of developmental mechanisms.

MULTIDETERMINED EMPATHIC CONCERN

In Hoffman's influential theory of empathy development (see 2, for a detailed account), he proposes that infants are born with the capacity to experience empathic distress automatically. True empathic concern emerges around the end of the 2nd year, when children differentiate themselves from others, recognize their affective response as stemming from the other, and show increasingly other-directed concern and prosocial responses. These ideas are well supported. Newborns "catch" the distress of other infants (9), and children show concern and prosocial behavior toward individuals who are overtly distressed (10). Furthermore, the emergence of a conceptual self-awareness late in the 2nd year coincides with the emergence of concern (11), though an implicit self-awareness may be present and induce concern even in the 1st year (12). Thus, early empathic concern may well be driven by affective resonance with overt distress.

Other aspects of Hoffman's theory have received less attention. Specifically, he argues that to be reliable social motivators, empathy-related responses need to be multidetermined, that is, elicited in response to whatever cues are available, even in the absence of perceptible distress. This may happen via simpler processes such as social scripts (e.g., when we infer that someone who is bleeding is injured, which stimulates retrieval of stored information about how injured people feel, which elicits concern; see 1). Alternatively, it may happen via more cognitively involved processes such as verbal mediation (when the victim's distress or situation is communicated through language that the observer must decode) or affective perspective taking (when we imagine how the other feels). The speed, accuracy, and flexibility of these mechanisms vary, with simpler mechanisms less cognitively demanding and thus faster, but in unfamiliar situations, perhaps less accurate and flexible. Nonetheless, all these mechanisms allow us to feel concern toward victims in diverse situations, which greatly expands the scope of our empathic capacity (2). Yet we know little about early multidetermined concern.

CONTEXT-DEPENDENT EMPATHIC CONCERN

Despite its importance, empathic responding needs to be regulated. The inability to regulate one's arousal is one cause of personal distress—an aversive affective reaction that results in a focus on oneself rather than on others (4). Most developmental research on this topic has looked at individual differences in regulating emotions, showing that well-regulated individuals are more likely to experience sympathy and less well-regulated individuals are more likely to experience personal distress (13). This work has expanded our understanding of empathic responding as a process and an individual difference.

An implicit assumption in this research seems to be that an optimal level of regulation results in an appropriate level of empathic concern *regardless of context*. What is often overlooked is that even *within* an individual, the optimal level of concern depends on context; context is critical to determining how much concern (thus regulation) is needed. After all, empathic responding and the prosocial behavior it motivates can be costly cognitively, emotionally, and materially (14). Pathological empathy can even put individuals at risk for depression (15). Moreover, in competitive situations, it may be advantageous to empathize with members of the in-group more than those of the out-group. Thus, empathic regulation that depends on context is invaluable. Yet we know little about its early development.

Social neuroscientists have studied these facets in adults, specifically within a dual-process framework (for reviews, see 16, 17). Because this framework is useful for advancing developmental theory on early empathy, I turn now to that work.

DUAL-PROCESS ACCOUNTS OF EMPATHIC RESPONDING

Dual-process models propose that many aspects of our psychology and behaviors involve and integrate both bottom-up (rapid, automatic, and reflexive) and top-down (slower, effortful, and reflective) processes (18). These models have been proposed in numerous domains of psychology, including social, cognitive, and personality. A dual-process model of empathic responding has also emerged within social neuroscience. Under this model (which shares many features with Hoffman's model), affective resonance with others' emotions occurs through perception-driven, bottom-up processes (e.g., mimicry), and true empathy also involves some top-down processes, most prominently differentiation between oneself and others, and emotion regulation. Together, these processes generate empathic concern, eliciting forceful and immediate responses to others' suffering. Yet such concern, though arguably the most common kind, is not very flexible in terms of the kinds of cues that can elicit it and its dependence on context.

The dual-process model further proposes that empathic responding is made far more powerful by additional top-down processes that, though not indispensable, can contribute

flexibility to empathic responding. Such processes can contribute in two ways: First, they can *generate empathic responding*. For instance, in the absence of overt distress, adults may rely on affective perspective taking, verbal mediation, or social scripts to grasp the other's state and empathize (19). Imagining how an individual feels also activates brain areas implicated in processing the relevant emotions for oneself, indicating that perspective taking elicits empathic responding (20). This is the multidetermination that Hoffman describes.

Second, top-down processes *modulate empathic responding*. One such process is contextual appraisal. For instance, adults' empathic responses decline if they believe that a hand injected with a needle has been anesthetized (21). The perspective one adopts also affects empathy: Adults who imagine themselves in a patient's place show less concern and more personal distress than adults who imagine the patient's feelings (21). Moreover, relationships and evaluations modulate concern: Adults show more concern for members of in-groups than for members of out-groups, and less concern for unfair individuals (22). Thus, many top-down processes allow for empathic modulation that depends on context, allowing us to direct our energies more effectively.

As I discuss next, this dual-process model, and especially the focus on the role of top-down processes in generating and modulating empathic responses, provides a useful framework for integrating and conceptualizing what we know (and do not know) about early empathy.

FLEXIBLE CONCERN IN EARLY DEVELOPMENT

Dual-process models have recently garnered support in developmental work, most prominently in theories of executive function and emotion regulation (23, 24). Recent accounts of moral and prosocial development have also emphasized cognitive processes and context (see 25, 26).

Moreover, dual-process models, in one form or another, have also been prevalent in the literature on empathic development. Indeed, both Hoffman's and Eisenberg's theories highlight the interactions between affective and cognitive processes. Yet systematic investigations of flexible early concern—which examine experimentally the development of multidetermined and context-dependent empathic responding, and thus allow clearer causal conclusions about the role of top-down processes in flexible concern—have been rare. However, recent studies have begun to fill both these gaps and I turn now to this work.

Can Top-Down Processes Generate Empathic Responses in Young Children?

Some early experiments tackled this question using assessments of pictures and stories (27). Preschool-aged children heard about protagonists in situations that should elicit emotions, but were not given information about the protagonists' feelings. Because many of the children reported emotions that matched the protagon-

ists' presumed emotions, they were believed to have empathized by taking the protagonists' perspective. However, children participating in these tasks may instead provide what they believe are the correct responses, or responses they believe the experimenter wants to hear (4). Furthermore, because they require sophisticated cognitive and linguistic skills, they limit the ages that researchers can test.

More recent research addresses these problems. In one study that my colleagues and I conducted, 1½- and 2-year-olds saw one adult either harming another adult (e.g., tearing the other adult's picture) or behaving neutrally (e.g., tearing a blank paper). In both cases, the second adult observed the event neutrally, without displaying emotion. Nevertheless, children showed greater concern for the adult if her picture was torn (i.e., she was harmed), and subsequently behaved more prosocially toward her. Furthermore, individual children's concern correlated with their later prosocial behavior (28; procedure adapted from 29). Children's concern could not have been initiated by bottom-up processes such as affective resonance because the victim showed no overt distress. Rather, children must have relied on a top-down process such as affective perspective taking (or perhaps social scripts).

Extending this work, another study (30) examined 18-month-olds' responses to a victim displaying a neutral or sad expression. As in the work described earlier (28), babies in this study showed concern for the neutral victim; however, they showed more concern for the sad victim, suggesting that although situational cues alone can generate concern, overt cues of distress intensify that concern. Although this is likely true, the critical point for our purposes is that 1½-year-olds sympathized with a victim even in the absence of conspicuous distress.

Whether this is true at younger ages remains unanswered. My colleagues and I tested 14-month-olds using the procedure in the study mentioned earlier (28), but the younger infants did not fully grasp the situations presented. With simpler events, perhaps even younger infants could demonstrate multidetermined concern. However, current research suggests that this ability emerges around 18 months.

Can Top-Down Processes Modulate Empathic Responses in Young Children?

To answer this question, researchers have examined the role of contextual appraisal. In one study, 3-year-olds showed greater concern for an adult displaying justified distress (his hand was caught in a box) than unjustified distress (his sleeve was caught; 31). Children also helped the justifiably distressed adult more quickly, and the more concern children expressed, the more quickly they helped the adult. In more recent work, 18-month-olds also showed more concern for an adult who was justifiably distressed than for one who was unjustifiably distressed, whereas 15-month-olds did not react in this way (32). The 15-month-olds also did not look longer at the situations in which the adult displayed unjustified distress, suggesting that infants of this age do

not yet engage in contextual appraisal. Alternatively, they may not have enough experience with the kinds of situations used in the study to appraise them relative to the emotional response. As with multidetermined concern, context-dependent concern based on appraising context may also emerge around 18 months.

Another relevant line of work concerns empathic responding in intergroup contexts. For instance, 5- to 8-year-olds were more empathic to children of their gender than to children of the other gender (33). However, this may result from bottom-up processes such as greater similarity and familiarity with individuals of their own gender, and may not reflect more deliberate, top-down processes such as conceptually distinguishing in-group from out-group (34). Similar objections could be raised about findings that infants sometimes show greater concern and prosocial behavior toward their mothers than toward strangers (35). A more controlled method is the minimal groups paradigm, wherein participants are assigned to novel, “minimal” groups that they are not otherwise similar to or familiar with. In a study using this paradigm (by assigning children to an arbitrary red or blue team), 6- to 8-year-olds reported feeling greater concern for members of their in-group who had been socially rejected than for members of an out-group who had been rejected (36). This suggests that at least by middle childhood, some top-down construal of group membership modulates empathic responding. Comparable work with younger children remains to be done. Given that infants prefer in-group over out-group members (37), do these preferences modulate young children’s empathic responses?

In summary, several top-down processes enable flexible empathic responding by 18 months (if not earlier). Of course, these act in concert with top-down processes that are always required for empathic responding. For instance, as perspective taking helps observers feel some of what the other is feeling, processes such as differentiation between oneself and others, and emotion regulation are still needed. Appraising an individual’s distress as unjustified likely increases the use of emotion regulation to inhibit the affect aroused by the overt distress, and judging an individual as a member of one’s in-group may increase concern by inhibiting differentiation between oneself and others. Thus, certain top-down processes are always involved in empathic responding; what varies is whether and to what degree other top-down mechanisms exert influence on those processes to foster flexible concern.

My focus in this article on the two ways in which top-down processes contribute to flexible concern raises questions about developmental mechanisms, which I consider in the final section.

DEVELOPMENTAL MECHANISMS UNDERLYING FLEXIBLE CONCERN

When and how do top-down processes begin playing a role in flexible empathic responding? In particular, why might we begin

to see the influence of such processes during the 2nd year (keeping in mind that research might still reveal an influence at earlier ages)? One answer comes from developmental neuroscience. The prefrontal cortex (PFC), which is involved in higher order cognitive processes, is thought to be immature during infancy and become active in the 2nd year (8). Thus, many top-down processes needed for flexible concern may be unavailable until the 2nd year. Alternatively, the PFC may be active in infancy but not functionally integrated with other regions of the brain until after the 1st year (38). Thus, some higher order processes may be available early but may not feed back onto empathic responding until the 2nd year. According to both of these accounts, structural and functional changes in the developing brain may partly explain the emergence of flexible concern in the 2nd year.

Related to these changes are advances in children’s emotional and cognitive capacities (39). Increases in children’s emotional repertoires enhance their ability to understand others’ emotions. The development in the 2nd year of children’s imagination (e.g., as seen in the blossoming of pretense), understanding of desire, and language fosters children’s ability to understand others’ experiences and caregivers’ explanations of others’ experiences (i.e., inductive parenting; 2). Together, these advances may contribute to the emergence of flexible concern during the 2nd year.¹

However, the involvement of top-down processes is not a single developmental milestone but a long-term process stretching into adulthood. For example, in one study (42), 7- to 40-year-olds viewed pictures of people in painful situations. With age, the neural response shifted from greater involvement of brain areas implicated in visceral reactions (e.g., the amygdala) to those implicated in more evaluative functions (e.g., the ventromedial PFC). The functional connectivity between these areas also increases from childhood to adulthood (43). Thus, top-down involvement in empathic responding increases throughout development.

At the same time, top-down processes themselves advance with development. First, they become increasingly complex and multifaceted. For instance, although reflexive self-awareness exists and enables empathic concern even in early infancy (12), a more reflective, conceptual sense of self emerges around 18 months (44). Does this advance add flexibility to concern, perhaps by giving children some control over how closely linked they feel to the victim and thus over the degree of their concern? Furthermore, although perspective taking can generate concern by 18 months (and possibly earlier), the ability to control whether one imagines the *other’s* perspective or imagines *oneself* in the other’s situation (which elicits greater concern

¹Of course, many other factors also play a role. For example, children’s temperament influences the effectiveness of parenting strategies (40), and cultural context affects children’s development (e.g., via its impact on parents’ socialization goals; 41). Thus, we should keep in mind that empathic responding is a complex and dynamic system.

and personal distress, respectively; 21) likely emerges later. The capacity to coordinate many social domains and contextual factors also increases over development. For example, although children judge straightforward acts of exclusion based on gender or race as morally wrong, in ambiguous situations, they often also invoke conventional or psychological reasons to justify exclusion, and do so increasingly with age (45). These advances likely affect the complexity of children's contextual appraisals, and thus also affect the ensuing empathic responses.

Second, cognitive processes generally become less effortful and faster over development (46). Thus, we may predict that top-down processes—especially more effortful ones—are slower to generate or modulate empathic responding in children than in adults, and that under time pressure, young children may not be as flexible in their concern as adults. These are tentative proposals; we know little about how advances in top-down processes affect empathic responding. This is a pressing question for research.

In summary, to fully comprehend early empathic responding, we must understand early flexible empathic responding. Toward this end, a dual-process account provides a way forward: It specifies the mechanisms underlying early empathic concern—especially by highlighting the importance of the top-down processes that enable multidetermined and context-dependent concern—and underscores the continuous and changing nature of empathic responding throughout life.

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