Social-Emotional Responding: A Perspective from Developmental Psychology

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Abstract

Social-emotional responding (*SER*) refers to (i) an individual's awareness and understanding of emotional experiences in the self and others, (ii) expression of emotions, and (iii) emotion regulation capacities. The normative development of these responses is considered a central component of human development. This is because SER underlies our capacities to express other-oriented behaviors and cope with challenges of everyday life in adaptive and socially responsible ways. The goal of this essay is to identify emerging trends in this area of developmental research. We first discuss central conceptual issues in social-emotional development and present a conceptual framework from developmental psychology to study SER. Next, we identify current shortcomings in research on SER. We focus on three central components of SER: self-conscious emotions, other-oriented emotions, and emotion regulation. On the basis of our analyses of the current gaps, we highlight three promising attempts to solve some of the current shortcomings in this literature: attempts to understand developmental relations among self-conscious emotions, other-oriented emotions, and emotion regulation capacities; attempts to identify psychological, neural, and behavioral mechanisms underlying social-emotional responding, and; the application of this knowledge to interventions that concern children and families.

Social-emotional responding (SER) is a core dimension of human development. It entails our emotional experiences and reactions that are continuously triggered by interactions between our neurobiological and behavioral systems with social experiences in everyday life. These responses are embedded in a lifelong process of growth, maturation, and change and shape our well-being, the quality of our communication and social relationships, and our productivity. The goal of the current essay is to discuss emerging trends in social-emotional development, with an emphasis

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on the period from early childhood to late adolescence, as this time encompasses key normative developmental transitions in SER. We first discuss conceptual issues in social-emotional development and identify three core areas in SER: the development of self-conscious emotions, the development of other-oriented emotional responses, and emotion regulation. We then introduce a developmental framework to study these dimensions of SER. Next, we discuss selected findings from the recent literature, with a focus on children's development of self-conscious and other-oriented emotions and regulatory capacities in the context of social and moral conflict in everyday life. On the basis of this review, we highlight emerging trends in this literature and identify promising venues for application of social-emotional development research to public policy concerns.

SOCIAL-EMOTIONAL DEVELOPMENT: CONCEPTUAL ISSUES

Social-emotional development is a term used in developmental psychology to describe various processes in the emotional and social domain of human development. Most prominently, it pertains to processes of change and maturation in experience, expression, and regulation of emotions in ways that are appropriate for an individual's age and development, across the lifespan (Saarni, 1999). It is considered central to balancing self-oriented needs and desires with other-oriented responsibilities because it involves understanding of one's own internal affective states, understanding and appreciating the emotional experiences of others, and coordinating and integrating one's own and others' perspectives. Because of this continuous interaction between the self and the social world, there is wide agreement that social-emotional capacities are integral to navigating the conflicts of everyday social and moral life, such as peer exclusion and inclusion, and meaningful contributions to civic society.

On an intrapersonal dimension, social-emotional development also relies on cognitive development, which promotes gathering knowledge about others and the world. As children develop cognitive skills, such as an understanding of others' mental states, they can update the ways in which they process and evaluate social conflicts (Killen, Mulvey, Richardson, Jampol, & Woodward, 2011). These evaluations then color children's social-emotional responses to these situations—a notion reflected in increasing coactivation between brain areas responsible for cognitive and affective processing. Here, we focus on three elements of social-emotional development that have been identified as essential components of emotional responding, that is, self-conscious emotions, other-oriented emotions, and emotion regulation, and their development from early childhood to late adolescence (Eisenberg, 2000; Malti & Ongley, 2014).

Self-conscious emotions have been described as emotional responses to social or moral conflict situations. They have been labeled "self-conscious" because they are evoked by the individual's understanding and evaluation of the self in relation to violating a norm, such as behaving unfairly (Malti, 2016). In psychology, self-conscious emotions (e.g., guilt) have been distinguished from other-oriented emotions (e.g., righteous anger) in that the former reflect an evaluation of one's own deeds while the latter involve a focus on other individuals. The most widely investigated other-oriented emotional responses are empathy and sympathy (Eisenberg, 2000). Empathy has been defined as an affective and cognitive response that stems from the comprehension of another's emotional state, where the affective response resembles the other person's feelings. The cognitive component involves identifying with another person's emotional experience (Eisenberg, Spinrad, & Morris, 2014). Sympathy entails feelings of concern for another that stem from the apprehension of the other's emotional state. Unlike empathy, however, sympathy does not necessarily involve feeling the same emotion that the other person is experiencing. As the minimum prerequisites for empathy involve only emotional contagion and the ability to differentiate between one's self and other, empathy is sometimes considered "value-neutral," and not directly linked to moral conduct (Eisenberg *et al*., 2014). Feelings of empathy and sympathy also depend on the evaluations of the context surrounding the distress of an other. If one evaluates an other's emotional distress to be unreasonable given the type (e.g., morally vs issues of personal preference) and severity of the transgression, one is less likely to experience feelings of empathy or sympathy. Emotion regulation has been conceptualized as the "[p]rocesses used to manage and change if, when, and how (e.g., how intensely) one experiences emotions and emotion-related motivational and physiological states, as well as how emotions are expressed behaviorally" (Eisenberg, Hofer, & Vaughan, 2007, p. 288). It is considered essential for healthy development and behavioral adaptation.

We focus on SER in the context of social and moral conflict.

These contexts are typically multifaceted and occur at an intersection among moral, social–conventional, and personal spheres. As such, these situations help us understand how children negotiate and integrate considerations such as fairness, peer norms, and personal desires. Understanding children's responding to these situations is important as they are often their most common and personally binding conflict experiences. As such, they are central to for studying the development of children's SER.

The development of self-conscious and other-oriented emotional responses and emotion regulation capacities has been shown to promote prosocial, other-oriented behavior, and impede antisocial, selfishly motivated behavior (Arsenio, 2014; Malti & Krettenauer, 2013). Furthermore, expressions of these

emotions, by way of their communicative properties (e.g., facial expressions, bodily postures, or vocalizations) can themselves serve as prosocial acts by providing support and comfort to others.

SOCIAL-EMOTIONAL RESPONDING: A CONCEPTUAL FRAMEWORK FROM DEVELOPMENTAL PSYCHOLOGY

We have recently described a conceptual framework from developmental psychology to understand the development of the three components of SER (Malti, 2016). The framework describes the dimensions of SER and their development. We also present a taxonomy of SER, in which the structure and function of SER is described along two core organizational principles: First, the principle of self- and other-orientation. This is an organizational principle to understand whether the component of emotional responding is (more) focused on the self (e.g., self-conscious emotions), an other (e.g., other-oriented emotions such as sympathy or prosocial behavioral tendencies), or both (social understanding requires an understanding of one's own and others' perspective) in a way that is adequate for their age and development (Malti, 2016). Second, the principle of over- and underregulation. This organizational principle that helps identify the extent to which the individual is able to regulate and balance his/her own and others' needs in a manner that is adequate for their age and development (Eisenberg, 2000). Central to this SER framework and taxonomy is first, the integration of others' and self-perspectives that transcend one's own standpoint and may ultimately lead to other-oriented sympathy (Malti, 2016; Malti & Ongley, 2014). Second, the taxonomy indicates that there is a basic human need to demonstrate emotional control and flexibility by regulating one's own needs, which leads to optimal balance and resilience. In addition, there is both intraindividual and interindividual variation in these two components of SER reflecting developmental processes of growth, decline, and transformation. Research has been conducted to understand the emergence and development of SER. In the following, we critically discuss this literature selectively, with a focus on identifying shortcomings and providing suggestions for emerging trends and future directions in research.

THE DEVELOPMENT OF SELF-CONSCIOUS EMOTIONS

One of the most prototypical self-conscious emotions is guilt (Malti, 2016). Guilt in the moral domain has been conceptualized as a feeling of regret over wrongdoing (Malti, Gummerum, Keller, & Buchmann, 2009). It reflects a violation of one's personal moral code (Malti, 2016). In contrast, neurotic guilt, which arises in response to events beyond our control, is neither the

result of real damage nor real wrongdoing and, as such, is an irrational emotional overreaction. The emergence and development of guilt has been studied in developmental psychology. One main purpose of this line of work has been to understand when guilt evolves, how it changes across childhood and adolescence, and what are its implications for adaptive and maladaptive social behavior. In short, research indicates that children show precursors of guilt, such as an averted gaze, bodily tension, and emotional distress, around 4 years of age (Kochanska, Gross, Lin, & Nichols, 2002). A more full-fledged form of guilt (such as self-reports of guilt, followed by reasons pertaining to fairness, justice, or care) appears at 6 years of age (Malti, 2016), which coincides with children's understanding that one may feel multiple, mixed emotions simultaneously. Once children reach 7–8 years of age, they also tend to shift toward attributing negative (i.e., guilty) emotions to themselves as transgressors (for a review, see Arsenio, 2014). Nevertheless, interindividual differences in the anticipation of guilt remain well into adolescence and beyond. One reason for this may be that differences in guilt in early childhood may, in part, be due to early cognitive constraints, while in late childhood and beyond they may increasingly reflect interindividual differences in motivations, desires, and beliefs. Future work that investigates this current gap in the literature may clarify why some children report guilt, while others do not. In addition, it also remains to be seen how guilt relates to other types of emotional responses in the context of social and moral conflict, such as sympathy or moral anger. While previous work has proposed the development of guilt to be strongly motivated by sympathy (Hoffman, 2000), emerging research has questioned this notion (Malti & Ongley, 2014). For instance, some research has suggested that different types of emotions can compensate each other in responding adequately to such conflicts (Ongley & Malti, 2014). This may reflect more differentiated antecedents for self-centered and other-oriented emotions—an idea that is worth pursuing in future work given the various implications for how children are likely to solve such conflicts.

THE DEVELOPMENT OF OTHER-ORIENTED EMOTIONS

Again, a bulk of this literature has examined empathy and sympathy, and has focused on identifying developmental trajectories, and, more recently, its emergence. Empathy is believed to emerge in the first year of life, as early as 8 months of age (Davidov, Zahn-Waxler, Roth-Hanania, & Knafo, 2013). Sympathy, which involves feelings of concern for the welfare of others, appears to evolve in the second year of life and is seen as a product between empathic capacities and advancements in cognitive abilities, such as perspective taking (Eisenberg *et al*., 2014). To at least some degree, infants as young

as 8 months seem to react to the distress of others with resonant negative affect, which may be considered a precursor to empathy. Nevertheless, the debate on the emergence of empathy and sympathy is far from resolved. For instance, the notion that affective empathy increases with development has been criticized based on recent longitudinal evidence indicating little to no increase in feelings of empathic concern across early childhood (Vaish, Carpenter, & Tomasello, 2009). However, other longitudinal and cross-sectional findings suggest that children increasingly anticipate feelings of concern for others from mid-childhood to early adolescence (Malti, Eisenberg, Kim, & Buchmann, 2013).

Noteworthy, previous researchers found differential developmental trajectories of sympathy across childhood. For example, Kienbaum (2014) found mean level stability of observed sympathy from teachers' reports and increase of sympathy for self- and parent-reports in a sample of children aged 5–7 years. These discrepancies in findings likely reflect the unique perspective and context of observation that each informant shares with the child. As a whole, however, these inconsistencies make it somewhat more difficult to discern normative patterns of sympathetic responding, how they change with age, and how they relate to other components of SER.

THE DEVELOPMENT OF EMOTION REGULATION

The ability to regulate emotions has been shown to increase from infancy to adolescence. Specifically, infants progress rapidly from external (e.g., parental care) to internal (e.g., self-soothing) sources of regulation to distress in the first year of life, and these abilities increase considerably in the first few years of life (Eisenberg, Spinrad, & Eggum, 2010). Substantial developments continue in early- to middle-childhood. For example, children's ability to inhibit or control their motor behavior improves from 3 to 6 years, especially when children spend most of their time in the preschool/kindergarten context, in which specific behavioral regulations are requested. Moreover, older children are more able to adopt cognitive strategies to control their emotions. For example, the ability to direct attention away from an attractive toy may help children in regulating their own emotions when a peer is playing with the same attractive toy. Such cognitive strategies may help him or her to not respond with socially inappropriate behaviors (e.g., pushing the peer to get the attractive toy) but rather use more constructive strategies to handle the social situation, such as playing with another toy.

Other regulatory capacities, such as effortful control, delay of gratification, and attentional control have also been intensely studied in the developmental literature. It has been shown that these capacities increase from early childhood to adolescence as well (Eisenberg *et al.*, 2010). Nevertheless, there

is also evidence for stability of effortful control from early childhood to adolescence, which has been interpreted as an indicator that effortful control is a trait-like characteristic (Rothbart & Bates, 2006). What is less understood is if and how the various regulatory capacities underlie children's self-conscious and other-oriented responses to social and moral conflict. For instance, it remains unclear which components of effortful control are most necessary to promote the emergence of self-conscious and other-oriented emotions and whether certain components are more important for either type of emotion.

EMERGING TRENDS

Developmental Relations between Components of Social-Emotional Responding

Because of an increasing interest in deriving overt indices of social-emotional functioning, one emerging trend in the literature is to explore developmental relations between central components of SER. While links between regulation and sympathy have been studied (Taylor, Eisenberg, & Spinrad, 2015), little research has explored cross-sectional relations among self-conscious emotions, other-oriented emotions, and emotion regulation, and even less is known about dynamic relations between these components of SER over time. However, it is likely that they do not develop independently, and that the way they influence each other over time predicts adjustment and behavioral outcomes. For instance, across development, increases in regulation may promote sympathy, as well-regulated children are less likely to experience self-focused overarousal and more likely to feel concern for others after apprehending their emotional state (Eisenberg & Eggum, 2009). This, in turn, may help them to anticipate guilt feelings over own wrongdoing. Vice versa, in conjunction with children's advancing cognitive skills, feelings of sympathy can increasingly exert their force by promoting other components of morality in childhood and adolescence, for instance, by promoting feelings of guilt (Daniel, Dys, Buchmann, & Malti, 2014).

There is also some emerging evidence that high levels of self-conscious emotions, such as guilt, can compensate for, in part, the absence of other-oriented emotional responses, such as sympathy, in predicting prosocial, other-oriented behaviors (Ongley & Malti, 2014). Interestingly, there is also some first evidence that the well-known link between anger and aggression in childhood and adolescence can be mitigated if high levels of self-conscious or other-oriented emotions exist (Colasante, Zuffianò, & Malti, 2015). Future research is warranted to more fully understand how one distinct emotion can buffer the absence of another, both cross-sectionally

and across development, and how this is related to children's and adolescents' capacities to regulate emotions. This may not only advance our knowledge of similarities and differential developmental pathways in SER, but eventually bear important implications for intervention practices that aim at promoting prosocial behaviors in children and adolescents.

Developmental Mechanisms Underlying Social-Emotional Responding

While components of SER and their normative development have been studied, much less is known about the developmental mechanisms that underlie SER. Recent work in developmental science has shed some light on potential biological and psychological mechanisms underlying the formation of empathy and sympathy. In terms of eliciting other-oriented emotions, behavioral synchrony, the temporal coordination of biological events or social behavior, has been identified as a key mechanism. Synchrony between mothers and their infants, as well as infants and others, has been linked to children's empathy (Feldman, 2007) and prosociality (Cirelli, Einarson, & Trainor, 2014).

Because emotional experiences are dynamic processes, an emerging body of research has also explored the dynamic nature of children's emotional responding to social conflict situations, and the potential physiological and attentional mechanisms that may contribute to interindividual and intraindividual differences in SER. For example, in a study examining children's heart rate variability before and during the presentation of moral transgressions, we found that children who showed more heart rate deceleration, which has been linked to outward, sustained attention, reported stronger feelings of guilt (Malti, Colasante, Zuffianò, & de Bruine, 2016). Thus, differences in physiological responding contribute to interindividual variability in the expression of the self-conscious emotion of guilt and related negatively valenced emotional responses (such as sadness) following one's own wrongdoing (Figure 1). What still needs to be investigated is if and how emotion regulation skills affect links between physiological arousal and self-reported feelings of guilt or sympathy, respectively. It is likely that emotion regulation affects the ways children respond to moral transgressions over time, for instance, by helping them channel their arousal into constructive emotional responses. Vice versa, dysfunctional emotion regulation may contribute to lowering links between arousal and the experience of self-conscious emotions, for instance, by diverting the child's focus toward the negative consequences of a transgression for another rather than the short-term benefits of violating a norm.

Similarly, children's spontaneous emotional expressions may reveal the underlying spontaneous reactions that are associated with the anticipation of self-conscious and other-oriented emotional responses. We have recently

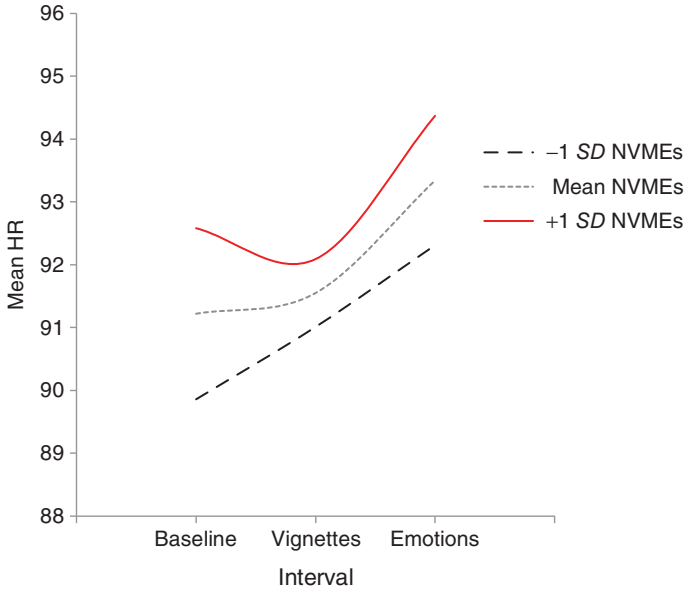

Figure 1 HR reactivity at low (–1 *SD*), medium, and high (+1 *SD*) levels of NVMEs. (*Note*: HR, heart rate; NVMEs, negatively valenced moral emotions.) *Source*: Taken from Malti *et al*. (2016), *Journal of Experimental Child Psychology*.

conducted a series of studies in which we observed their brief facial reactions to moral transgression stories. We found that spontaneous reactions of fear, perhaps in response to social sanctions (e.g., fear of consequences from peers or authority figures) were related to children's self-reported guilt (Dys & Malti, in press). Despite much emphasis on guilt rooted in other-oriented concern (Hoffman, 2000; Malti *et al*., 2009), these findings suggest that there may be another qualitatively different form of guilt, rooted in concern over social sanctions related to one's transgression (Malti, 2016).

Lastly, another promising potential mechanism underlying the formation of self-reported emotions of guilt is attention allocation during moral transgression stories. It may be the case, for instance, that children who do not experience moral emotions fail to sufficiently visually process the emotional state of the victim, impeding an affective moral response. Future research is warranted to explore the links between attention allocation and the anticipation of self-conscious and other-oriented emotional responses, respectively.

Application of Knowledge on Normative Social-Emotional Responding to Practice

Over the past decade, researchers have increasingly acknowledged that it is time to apply the extensive knowledge on children's and adolescents' normative social-emotional development to refine the existing practices, as well as generate new developmentally tailored educational strategies

aimed at promoting the healthy development of children and adolescents. For example, a practitioner's understanding of normative development of sympathy can help determine if, and by how much, a child (or a classroom) is developmentally normative, delayed, or advanced in sympathy (Malti, Chaparro, Zuffianò, & Colasante, 2016). Interestingly, many existing evidence-based programs that aim to promote social-emotional development in school settings include some degree of between-grade differentiation in their curricula (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). However, the degree to which age-graded tailoring is needed remains to be determined given mixed findings regarding their effectiveness (Malti *et al*., 2016). Importantly, most programs do not adjust their curricula for possible developmental differences in SER *within* grades. This is surprising because there is much variability between children of the same chronological age. Therefore, future interventions should explain how normative social-emotional development is translated into specific intervention strategies within each developmental level.

Other, related open questions concern the issue of how many (and which) dimensions of SER should be targeted, as well as when, and how. In a recent review, we found that evidence-based programs targeting higher numbers of social-emotional development constructs were more effective in mitigating conduct problems and promoting academic functioning. This finding suggests that it may be beneficial to target various components of SER as they may work in concert to improve children's and adolescents' positive outcomes. Similarly, intervention timing and duration need to be explored further. For instance, there is some evidence to suggest that social-emotional interventions that commence earlier in development (e.g., during preschool and kindergarten) were more effective in promoting social-emotional development (Malti *et al*., 2016). What remains to be seen is if and how developmentally tailored interventions in other critical periods of social-emotional development (e.g., puberty) compare to early childhood interventions in terms of effectiveness. In sum, future work is needed to promote the translation of social-emotional development research into practice, enhance practitioners' understanding of normative development, integrate social-emotional knowledge and assessment into the eventual selection and use of intervention strategies both between and within age groups.

CONCLUSION

In this essay, we have identified current shortcomings in social-emotional development research with a focus on three core components of SER: self-conscious emotional responses, other-oriented emotional responses, and emotion regulation capacities in the context of everyday moral conflict

and social exclusion. On the basis of this analysis, we have identified promising trends and central areas for future work. We have shown that research has been devoted to our understanding of the emergence and development of distinct self- and other-oriented emotions (most prominently empathy/sympathy and guilt). Yet, much less is known about their conjoint and differential developmental trajectories, and if and how the development of one type of emotion affects the development of other emotions and related behavioral outcomes. Moreover, we have underscored the importance of examining specific mechanisms underlying the formation of self- and other-oriented emotions. For instance, further research unraveling the roles of cognitive and affective mechanisms such as attention and synchrony can provide further direction for intervention programs aimed at optimizing children's and adolescents' social-emotional responding.

Emerging evidence suggests that we humans are equipped with cognitive and behavioral mechanisms that support the development of social-emotional responsiveness. Translational research is needed to implement knowledge on normative social-emotional development into practice, including the use of screening and assessment tools to understand child and adolescent social-emotional development, the refinement of existing educational practices, and the development of new developmentally tailored practices to promote social-emotional growth. In addition, we have argued for the need to generate more differentiated intervention programs that account for children's developmental stage, in lieu of a blanket approach to treating all children of the same age. Still, research that can inform this differentiated approach is nascent and constitutes an emerging trend in developmental science.

Going forward, it will be important to understand how an increasingly complex, changing, globalized world with economic challenges, and exposure to increasingly diverse communities and societal change at large affect child and adolescent social-emotional development and its biological, psychological, and behavioral underpinnings. Given the importance of good SER for raising healthy, productive, and responsible future generations, understanding and promoting these developmental processes in the best ways possible will be one of the most important endeavors for the behavioral, neural, and social sciences in the next decade.

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