

*Aware and Tuned to Care:*Children with Better Distress Recognition and Higher Sympathy Anticipate More Guilt After
Harming Others

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Abstract

Helping children recognize the distress of their victims and feel sympathy may facilitate the optimal socialization of ethical guilt. With a sample of 150 eight-year-olds, we tested the main and interactive relations of distress recognition and sympathy to ethical guilt after hypothetically stealing and pushing. Better fear recognition and higher sympathy were uniquely associated with higher ethical guilt. The link between fear recognition and ethical guilt was stronger in children with higher sympathy. Beyond their unique contributions, distress recognition and sympathy may work in concert to facilitate ethical guilt after harming others.

Keywords: guilt, emotion recognition, sympathy, childhood

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Guilt is a self-conscious, negative feeling over wrongdoing (Malti, 2016). A healthy dose of guilt after deliberately harming others is considered an adaptive social response—especially if it is wrapped up in *ethical* concerns of fairness, justice, harm, or the victim’s welfare (Malti, Dys, Colasante, & Peplak, 2018). Ethical guilt helps children monitor their social behavior and make adjustments to improve how they treat others (Malti, Gummerum, Keller, & Buchmann, 2009). Children are thought to express more ethical guilt if they recognize their victims’ distress and feel sympathy (Hoffman, 2000). However, there is little evidence for the direct roles of distress recognition and sympathy in children’s ethical guilt, and none for their joint contribution.

Facial expressions of sadness, fear, and anger are among the most prominent social cues of distress (Fridlund, 1994). If children fail to recognize these cues before or after harming others, they may not ponder the negative implications of their actions and feel ethical guilt. Guilt-prone adults tend to have better facial emotion recognition regardless of type and intensity of emotion (Treeby, Prado, Rice, & Crowe; 2016). Most developmental studies concerning facial expression recognition and guilt consider relatively global callous-unemotional (CU) traits. For example, children with higher CU traits took longer than controls to recognize increasingly sad facial expressions, were more likely to mistake fearful expressions for others (Blair, Colledge, Murray, & Mitchell, 2001), and showed blunted neural responses to fearful faces (Hoyniak et al., 2019). However, the extent to which distress recognition factors into children’s guilt per se

remains unclear because CU traits include social-emotional deficits beyond low guilt (e.g., low sympathy and low general affect; Frick, 2012).

Sympathy is a feeling of concern for others in need after recognizing their emotional distress. Unlike the similar construct of empathy, it does not always involve sharing the other's emotional state (Eisenberg, 2000). We focus on sympathy in the present study because it necessitates *other-oriented concern*, and concern for the victims of one's transgressions likely feeds into the self-conscious elements of responsibility and regret that comprise ethical guilt (Hoffman, 2000). Children with greater sympathetic tendencies at 6 and 9 years showed greater increases in guilt-related feelings after stealing/not sharing from 6–9 and 9–12 years, respectively (Daniel, Dys, Buchmann, & Malti, 2014). Furthermore, children's dispositional sympathy was more positively linked to their guilt-related feelings after excluding an economically disadvantaged child than after excluding a child who was merely from a different school (citation withheld for peer review). Thus, sympathy may facilitate ethical guilt after violating others' welfare, especially when it is calibrated to the relative needs of others.

Though vital alone, the awareness afforded by distress recognition and the other-oriented characteristics of sympathy may also work in concert to facilitate ethical guilt. Sympathy may be critical for linking distress recognition to ethical guilt. Similarly, distress recognition presupposes sympathy (i.e., one must recognize that another is distressed in order to feel sympathy for them; Eisenberg, 2000), and may be critical for knowing exactly when and how much to sympathize. Thus, children higher in distress recognition *and* sympathy may be particularly sensitive to their victims' distress and thus more likely to feel guilty after harming others.

Children accept responsibility for their transgressions and show basic signs of remorse by the second year of life. Guilt stemming from ethical principles and the plight of victims emerges around 3 or 4 years of age alongside theory of mind, but only becomes a relatively common response in middle childhood when children prioritize others' perspectives over their own (Malti, 2016). We thus focus on middle childhood in the present study to adequately assess individual differences in ethical guilt.

The Present Study

We investigated the (1) main and (2) interactive relations of distress recognition and sympathy to children's anticipation of ethical guilt after harming others. For aim 1, we expected higher distress recognition and sympathy, respectively, to be associated with higher ethical guilt (see Blair et al., 2001; Daniel et al., 2014). For aim 2, we expected an additive effect in line with our own and previous theorizing (e.g., Eisenberg, 2000; Hoffman, 2000), such that higher distress recognition would be increasingly linked to higher ethical guilt with higher sympathy.

Method

Participants

One hundred fifty 8-year-olds ($M_{\text{age}} = 8.53$, $SD = .29$, range = 8.01–9.78 [2 children older than 8.97]; 50% female) participated alongside their caregivers. They resided in a major Canadian city and were recruited from local community centers, events, and summer camps. The majority of caregivers (i.e., 70%) reported their highest level of education as bachelor's or higher. They reported their ethnicity as follows: 17% American, 17% multiethnic, 17% South/Southeast Asian, 12% Western European, 10% East Asian, 5% Central/South American, 4% African, 3% Eastern European, 2% West/Central Asian, and 1% Middle Eastern (12%

missing/chose not to report). Overall, these distributions were representative of the diverse region from which the sample was drawn (citation withheld for peer review).

Procedure

The authors' institution granted ethical approval. Families visited the lab for a 1-hr session. Oral assent and written informed consent were obtained from children and caregivers, respectively. Graduate students and undergraduate research assistants conducted the child assessments in a designated room while caregivers remained in a waiting area and completed a questionnaire. At study end, caregivers were debriefed and children received a book.

Measures

Guilt. Two stories depicting stealing and pushing, respectively, from the Social-Emotional Responding Task (Malti et al., 2009) were randomly presented to children. Pre-recorded audio clips and visuals directed them to imagine themselves engaging in each act (Figure 1). Three questions followed each story: Question 1 asked, "How would you feel if you did this?" Question 2 asked, "Why would you feel [anticipated emotion from question 1]?" Each of these questions was open ended and children responded verbally. Question 3 asked, "How strongly would you feel [anticipated emotion from question 1]?" Children responded to this by pointing to a 3-point scale depicting squares of increasing size.

Coding ethical guilt. Two raters coded emotions following question 1 as 1 (*guilt related*) or 0 (*not guilt related*). Specifically, *bad*, *sad*, *sorry*, and *guilty* emotions were coded 1, whereas *neutral*, *happy*, *proud*, *angry*, *scared*, and other or unrelated negative emotions were coded 0. Reasons following question 2 were coded 1 (*ethical*; i.e., principles of fairness, justice, and/or harm, or references to the welfare of others), 2 (*sanction oriented/conventional*; i.e., punishment/rules from authority figures or peers), 3 (*hedonistic/justifying*; i.e., self-centered

benefits/excuses for why it was acceptable to transgress), or 4 (*unelaborated/other*; Malti et al., 2009). Responses coded 1 (*guilt related*) for question 1 and 1 (*ethical*) for question 2 were deemed indicative of ethical guilt and assigned their corresponding intensity for further gradation (1 = *not strong ethical guilt* to 3 = *very strong ethical guilt*). All other response combinations were coded 0 (i.e., *no ethical guilt*), although responses with *unelaborated/other* reasoning were coded as missing because it was impossible to determine the presence/absence of ethical guilt from them. This resulted in a continuous score from 0 = *no ethical guilt* to 3 = *very strong ethical guilt* that we averaged across stories ($r = .36, p < .001$; 84% reported ethical guilt in at least one of the two stories).

Distress recognition. Photographs of a female model posing happy, sad, fearful, and angry facial expressions in 10% increments from 10–100% intensity (top of Figure 2) were shuffled and presented to children, who placed them into boxes labeled with corresponding emoticons (bottom of Figure 2). As in previous studies (e.g., Gao & Maurer, 2009), we estimated children’s threshold to recognize each emotion—defined as the intensity level at which they achieved 50% accuracy—by fitting a cumulative Gaussian function. A lower score represented *better* recognition as the child required less facial emotional intensity to recognize the target emotion above chance level (e.g., they could reliably detect the emotion at 10% intensity rather than having to wait until it was more evident at 50–70% intensity). We assessed happiness recognition to ensure that our findings were specific to the recognition of distress and not the recognition of emotions in general.

Child-reported sympathy. Children reported whether five items adapted from a dispositional sympathy scale were like them or not (Eisenberg et al., 1996; e.g., “When I see another child who is hurt or upset, I feel sorry for them”). Items not like them were scored 0.

They further reported if items like them were sort of or really like them (scored 1 and 2, respectively; $\alpha = .77$).

Caregiver-reported sympathy. Caregivers also rated five items adapted from Eisenberg and colleagues (1996; e.g., “My child feels sympathy for other children who are upset or sad”) on a 7-point scale from 0 (*never*) to 6 (*always*; $\alpha = .90$).

Results

At the zero-order level (Table 1), children who better recognized fear, as well as those who reported higher sympathy, reported higher ethical guilt. Children who reported higher sympathy were also rated higher in sympathy by their caregivers. All variables had less than 1% missing data with the exception of ethical guilt (3.4%). We conducted separate regression models in *Mplus 8* for child- and caregiver-reported sympathy (Models 1 and 2, respectively, in Table 2) using maximum-likelihood parameter estimation with standard errors robust to non-normality (Muthén & Muthén, 1998–2017). In partial support of our hypotheses, we found a significant main effect of fear—but not anger and sadness—recognition on ethical guilt while controlling for all predictors. There was also a significant main effect of child-reported sympathy. There was no significant main effect of caregiver-reported sympathy, but it did significantly interact with fear recognition. The interaction of fear recognition and child-reported sympathy was in the same direction, but not significant. To further test the robustness of this interactive finding, we created a composite score of child- and caregiver-reported sympathy and largely replicated the significant parent-reported interaction while controlling for the same predictors ($\beta = -.19, p = .059, 95\% \text{ CI } [-.38, .007]$). As expected, the link between fear recognition and ethical guilt was significant at higher (+1 *SD*), $\beta = -.36, p = .001, 95\% \text{ CI } [-.57, -.15]$, but not lower (–1 *SD*), $\beta = .02, p = .91, 95\% \text{ CI } [-.26, .30]$, levels of sympathy (Figure 3).

Discussion

Our findings provide partial (i.e., child- but not caregiver-reported) support for theoretical and empirical work implicating dispositional sympathy in guilt-related feelings (e.g., Daniel et al., 2014; Hoffman, 2000), and extend existing findings by suggesting that a sympathetic orientation is specifically important for ethical guilt over acts that harm. Similarly, we found partial support for literature linking distress recognition to CU traits in children (e.g., Blair et al., 2001) and guilt-proneness in adults (Treeby et al., 2016), as only fear recognition was linked to ethical guilt in the present study. A lack of guilt is one of various CU traits (Frick, 2012). Distress recognition as a whole may play a more pronounced role in other CU traits or a CU composite. Alternatively, recognizing fear may be critical for guilt in middle childhood, whereas recognizing a broader array of distress-related emotions may be critical for continued guilt proneness into adolescence and adulthood (see Treeby et al., 2016).

Our results also suggest a more nuanced scenario in which distress recognition interacts with sympathy to create (sub)optimal conditions for ethical guilt. Children who lacked sympathy reported lower levels of ethical guilt regardless of how well they recognized fear. This aligns with findings suggesting that those who lack sympathy for their victims are less likely to feel bad after violating others and may actually feel joy upon recognizing distress in them (Schindler, Körner, Bauer, Hadji, & Rudolph, 2015). In contrast, better fear recognition was more likely to be associated with heightened ethical guilt in children with higher sympathy. Sympathy may help children harness and translate the awareness afforded by distress recognition into feelings of accountability and regret (Hoffman, 2000). Distress recognition is also regarded as a precondition for sympathy (Eisenberg, 2000). If children fail to recognize distress in their victims, their other-oriented tendencies may not come into play at critical junctures for

experiencing ethical guilt. Children who are attuned to others' distress may better understand when and to which degree their actions violate others' welfare, and they might use this information to calibrate their sympathy accordingly. Thus, the combination of heightened distress recognition *and* a caring disposition may be more conducive to ethical guilt than either characteristic alone.

It should also be noted that fear—but not happiness, sadness, and anger—recognition showed significant main and interactive relations to ethical guilt. This aligns with studies documenting *fear-specific* processing deficits in children who have difficulties feeling guilt (e.g., Hoyniak et al., 2019). Guilt often revolves around actions that intend harm. Intention to harm reliably elicits fear and anger, but not sadness (Javela, Mercadillo, & Ramírez, 2008). Even relative to anger, fear is a more common response to imminent threat and shows strong phylogenetic continuity in that humans and nonhumans respond similarly to fearful stimuli (Adolphs, 2013). Fear's clear connection to threat may explain why it was particularly important for ethical guilt responses in the present study—if children recognize fear in their victim, they may be more likely to acknowledge themselves as the threatening source of fear en route to feeling ethical guilt. Fear recognition peaks by middle childhood, whereas the recognition of other distress-related emotions like anger and sadness develops more gradually into adolescence (Gross & Ballif, 1991; Rodger, Vizioli, Ouyang, & Caldara, 2015). This may also explain why we found associations between ethical guilt and fear recognition (but not anger and sadness recognition) in our sample of 8-year-olds. Indeed, guilt-prone adults are better at recognizing a range of negative emotions (i.e., fear, anger, sadness, disgust, and shame; Treeby et al., 2016).

One limitation of the present study is that we assessed ethical guilt over imagined rather than actual harmful acts. Although children's feelings in response to hypothetical transgressions

have been repeatedly linked to their actual antisocial behavior (Malti & Krettenauer, 2013), their responses to real-life transgressions—when emotions may run higher and social desirability may be less of a concern—might be meaningfully different. Another limitation is that our methodology and coding system prevented us from creating mutually exclusive variables for separate types of guilt (e.g., ethical vs. sanction-oriented), and we were thus unable to determine if our results were exclusive to ethical guilt. Future studies should employ different methods to distinguish the relative effects for guilt subtypes (e.g., closed-ended assessments of prototypical responses to transgressions that align with each type of guilt). It would also be interesting to parse apart guilt over acts with different moral connotations (rather than aggregating across acts). With respect to distress recognition, facial expressions are typically perceived in context; the measure we used may not be ecologically valid. Our use of a single age group is also a limitation. We focused on middle childhood because it coincides with the reliable emergence of ethical guilt (Malti, 2016). It is thought that guilt in early childhood is primarily rooted in fear over sanctions. We would therefore expect less ethical guilt in early childhood. Furthermore, given that distress recognition and sympathy imply an ethical orientation, we would expect less robust associations between these factors and guilt in early childhood, and perhaps larger roles of temperamental fear and punishment/reward sensitivity (see Kochanska, Aksan, & Joy, 2007). Finally, because we used moderation analyses and point-in-time data, we could only speak to the general conditions under which ethical guilt is most likely (i.e., when children are skilled at detecting fear and sympathetic in general). We could not address temporal links of distress recognition, sympathy, and guilt. Future research in this area should employ mediation with short- and long-term longitudinal designs.

In line with Hoffman's (2000) initial theorizing, our findings suggest that recognizing social cues of distress and feeling sympathy for victims are important precursors to a healthy dose of guilt. Promoting these abilities may represent a powerful two-step approach to inducing ethical guilt in children after they violate others' welfare.

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Table 1

Zero-Order Correlations and Descriptive Statistics

Variable	1	2	3	4	5	6	7	8	<i>M (SD)</i>	Min–Max
1. Guilt	1								1.75 (1.12)	0–3
2. Happiness recognition	.02	1							36.31 (9.17)	15.79–57.89
3. Sadness recognition	–.15	.09	1						48.99 (19.06)	0–100
4. Fear recognition	–.23**	.08	.15	1					32.46 (15.33)	0–84.21
5. Anger recognition	–.12	.21*	.19*	.18*	1				31.54 (7.87)	15.79–73.68
6. Child-reported sympathy	.24**	.16	–.10	–.02	–.10	1			1.56 (.46)	0–2
7. Caregiver-reported sympathy	.06	.14	.01	.03	.04	.34***	1		4.81 (1.05)	1–6
8. Gender	–.09	–.08	–.06	–.03	–.04	.002	–.14	1	—	—

Note. Higher emotion recognition scores indicate higher thresholds to detect the target emotion and thus worse recognition. Gender (–.50 = female, .50 = male). Significant effects bolded. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2

Regressions Predicting Guilt

Variable	Model 1		Model 2	
	β	95% CI	β	95% CI
Happiness recognition	.02	-.12, .16	.03	-.11, .17
Sadness recognition	-.08	-.24, .07	-.12	-.27, .03
Fear recognition	-.20**	-.34, -.05	-.15*	-.30, -.01
Anger recognition	-.04	-.24, .16	-.15	-.34, .04
Child-reported sympathy	.24**	.09, .39	—	—
Caregiver-reported sympathy	—	—	.03	-.14, .19
Gender	-.10	-.25, .06	-.10	-.25, .06
Happiness Recognition x Child-Reported Sympathy	.09	-.04, .22	—	—
Sadness Recognition x Child-Reported Sympathy	.04	-.09, .18	—	—
Fear Recognition x Child-Reported Sympathy	-.13	-.30, .03	—	—
Anger Recognition x Child-Reported Sympathy	.00	-.21, .21	—	—
Happiness Recognition x Caregiver-Reported Sympathy	—	—	.14	-.01, .29
Sadness Recognition x Caregiver-Reported Sympathy	—	—	.06	-.08, .20
Fear Recognition x Caregiver-Reported Sympathy	—	—	-.20*	-.38, -.02
Anger Recognition x Caregiver-Reported Sympathy	—	—	-.17	-.39, .05
R^2	.16**		.15*	

Note. Model 1 = child-reported sympathy. Model 2 = caregiver-reported sympathy. All variables standardized with the exception of gender (-.50 = female, .50 = male). Significant effects bolded. * $p < .05$. ** $p < .01$.



Figure 1. Visuals for stories depicting a) stealing and b) pushing.
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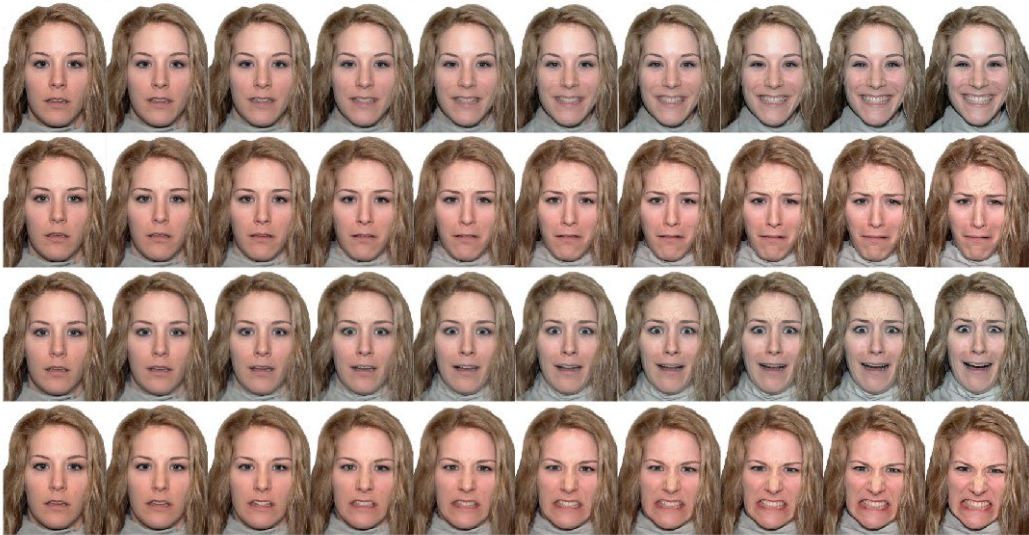


Figure 2. Visuals for emotion recognition task.
Note. Neutral photograph not depicted.

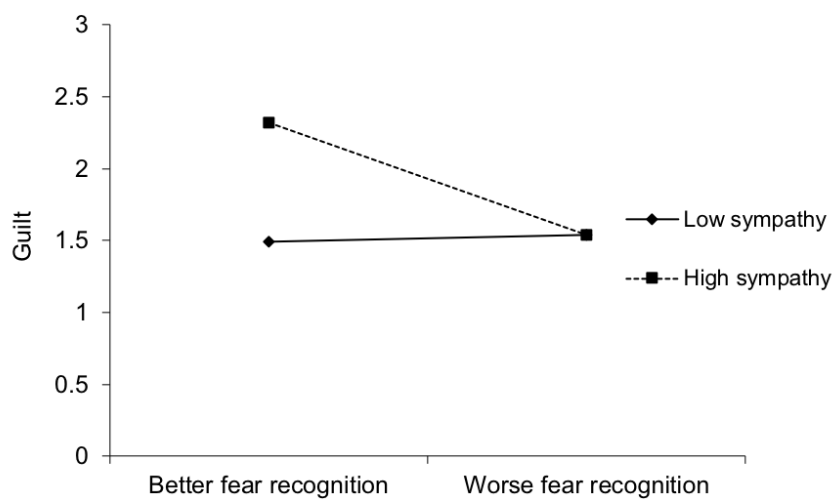


Figure 3. Fear recognition in relation to guilt for children with lower ($-1 SD$) vs. higher ($+1 SD$) sympathy.

Note. Sympathy = child- and caregiver-reported composite.