

RUNNING HEAD: Moral Emotion Attribution and Response Format

Children's Moral Emotion Attribution in the Happy Victimizer Task: The Role of Response Format

Michaela Gummerum^a, Belén López-Pérez^a, Tamara Ambrona^b, Sonia Rodríguez^b, Giulia Dellaria^a, Gary Smith^a, and Ellie Wilson^a

^a School of Psychology, Plymouth University, UK

^b Universidad de Burgos, Spain

“This is the peer reviewed version of the following article: (Gummerum, M., Lopez-Perez, B., Amrbona, T., Rodriguez, S., Dellaria, G., Smith, G., & Wilson, E. Children's Moral Emotion Attribution in the Happy Victimizer Task: The Role of Response Format. *Journal of Genetic Psychology: Research and Theory on Human Development*, 177, 1-16. Doi: 10.1080/00221325.2015.1103694. This article may be used for non-commercial purposes in accordance with the Wiley Terms and Conditions for Self-Archiving.”

Abstract

Previous research in the happy victimizer tradition indicated that preschool and early elementary-school children attribute positive emotions to the violator of a moral norm, whereas older children attribute negative moral emotions. Cognitive and motivational processes have been suggested as underlying this developmental shift. The current research investigated whether making the happy victimizer task less cognitively demanding, by providing children with alternative response formats, would increase children's attribution of moral emotions and moral motivation. In Study 1, 93 4- to 7-year-old British children responded to the happy victimizer questions either in a normal condition (where they spontaneously pointed with a finger), a wait condition (where they had to wait before giving their answers), or an arrow condition (where they had to point with a paper arrow). In Study 2, 40 Spanish 4-year-old children responded in the happy victimizer task either in a normal or a wait condition. In both studies, participants' attribution of moral emotions and moral motivation was significantly higher in the conditions with alternative response formats (wait, arrow) than in the normal condition. The role of cognitive abilities for emotion attribution in the happy victimizer task is discussed.

Keywords: moral emotions; happy victimizer task; response format; cognitive development

The question whether cognition or emotions underlie human moral functioning has been debated for centuries in moral philosophy (Hume, 1751/1957; Kant, 1781/1965), and more recently, in moral psychology (e.g., Haidt, 2001; Huebner, Dwyer & Hauser, 2008). Most contemporary psychological theories of morality acknowledge that emotions play an important role in moral decision-making and behaviour (e.g., Cushman, 2013; Eisenberg, 2000; Greene, Sommerville, Nystrom, Darley, & Cohen, 2001). For example, anticipating the negative feelings accompanying a norm violation (e.g., guilt, regret, sadness on the part of the violator; sadness and anger on the part of the victim) or the positive feelings resulting from moral acts (e.g., pride on the part of the agent, happiness on the part of the recipient) can serve as motivation to act in accordance with moral norms (Hoffman, 2000; Krettenauer, Jia, & Mosleh, 2011; Nichols, 2002). The experience and anticipation of such moral emotions have been regarded as indicators of the internalization of, commitment to, and compliance to moral norms, even in situations in which a moral action contradicts selfish desires or in which a norm violation would not involve external sanctions (Gintis, 2000; Keller, 2004).

A host of studies have investigated the development of moral emotions and their relationship to (im-)moral behaviors and judgments across childhood and adolescence (see Arsenio, 2014; Malti & Ongley, 2014 for recent overviews). One interesting paradigm used in the literature is the happy victimizer task, which investigates children's attribution of (moral) emotions to violators of moral norms. Such moral emotion attributions have been regarded as an important indicator of children's moral motivation (Nunner-Winkler, 2007). Indeed, previous research has emphasized the importance of understanding (moral) emotions for children's moral behavior (e.g., Arsenio & Lover, 1995; Gummerum, Hanoch, Keller, Parsons, & Hummel, 2010; Malti & Krettenauer, 2013). The current research focused on cognitive factors that might help explain when and why children attribute negative emotions

to moral norm violators. Specifically, we assessed whether changing the way participants responded in the happy victimizer task affected the attribution of appropriate moral emotions to victimizers and children's moral motivation. Previous research on preschool children's cognitive development has indicated that asking them to wait before giving an answer or to respond to a task in a non-standard way (e.g. pointing with an arrow instead of one's finger) helps children overcome some of the cognitive demands of deception, executive-function, or counterfactual-reasoning tasks and leads to more correct responses (Beck, Carroll, Brunson, & Gryg, 2011; Carlson, Moses, & Hix, 1998; Diamond, Kirkham, & Amso, 2002; Hala & Russell, 2001). Such alternative response formats might assist children with not following a dominant, but incorrect, response and help them to work out the correct answer. In two studies, we investigated whether children who responded with a delay or who used alternative response formats would show higher moral emotion attribution and moral motivation in the happy victimizer task compared to children who used the standard response format employed in previous happy victimizer research.

The Happy Victimizer phenomenon

Imagine the following scenario (e.g., Nunner-Winkler & Sodian, 1988): A group of children are playing in the playground. One child is on the swing, and her classmate also wants to use the swing. The classmate pushes the child off the swing, and the child falls to the ground. Is it right what the classmate did? And how does the classmate feel? Such scenarios and questions are commonly used in the happy victimizer paradigm. Empirical research in this paradigm has found that from the late elementary-school years onwards the majority of older children, adolescents, and adults regard actions, such as pushing another person off the swing, as morally wrong and attribute negative emotions to the victim of the violation (see Arsenio, 2014; Krettenauer, Malti, & Sokol, 2008, for reviews). Yet, while most adults believe that the victimizer (i.e., the classmate) feels bad, guilty, or ashamed about his or her

moral violation, preschool and early elementary-school children attribute positive emotions to the victimizer, especially when the victimizer benefits from the transgression (e.g., by using the swing him-/herself; Arsenio, 2014; Krettenauer et al., 2008). Furthermore, neither the severity of the transgression's consequences for the victim, the tangibility of the profit gained, nor the kind of relationship between violator and victim affected young children's attribution of positive emotions to the victimizer (Arsenio & Kramer, 1992; Nunner-Winkler & Sodian, 1988). Thus, the happy victimizer phenomenon appears to be rather robust in young children and points to a gap in their moral cognitions and moral emotion attribution. Whereas young children comprehend that certain actions are morally wrong because they have negative effects on others' welfare and rights (Turiel, 1983), this knowledge is not translated into their attribution of emotions to the victimizer.

Research has shown a marked decrease in the attribution of positive emotions to the victimizer over the course of middle childhood (Arsenio, 2014). From around the age of 7, the majority of children attribute mixed or negative feelings to the victimizer (Keller, Lourenço, Malti, & Saalbach, 2003; Krettenauer & Eichler, 2006; Nunner-Winkler & Sodian, 1988). A number of accounts have emerged with the aim to explain these age differences in emotion attributions to the violator. Nunner-Winkler and Sodian (1988; Nunner-Winkler, 2007) focused on the role of moral motivation in moral emotion attribution: Young children focus in their emotion attribution on the match between a victimizer's desires and the outcome of the action. Accordingly, young children believe that victimizers will feel happy, if they get what they want. Conversely, older children display a moral orientation; their emotion attributions to the victimizer are influenced by moral standards and the victim's pain. Arsenio and colleagues (Arsenio & Kramer, 1992; Arsenio & Lover, 1995) proposed that children's increasing ability to coordinate emotions underlies the shift from positive to negative emotion attribution to victimizers. Young children regard the emotions of victims

and victimizers as two independent affective reactions to the same event, whereas older children comprehend the victimizer's emotional conflict (i.e., happiness over satisfied desires versus sadness over the victim's situation) and attribute mixed or negative emotions. Sokol and colleagues (Krettenauer et al., 2008; Sokol, 2004; Sokol, Chandler, & Jones, 2004) suggested that children's emotion attribution in the happy victimizer task is affected by their changing views of human agency. According to this view, young children subscribe to a mechanical or "copy-theory" of human agency, in which human action is largely seen as a result of passively reacting to the demands of the external environment. While young children would acknowledge that a violator's transgression is motivated by his/her selfish desires, they do not appreciate that the violator has a choice to act on that desire or not. Older children, however, develop an interpretive theory of human agency, according to which humans are active and autonomous agents whose actions are based on a deliberate choice. Therefore, older children comprehend that a violator chose to engage in a transgression and is therefore morally responsible for it.

Only a few studies have assessed whether and how cognitive abilities may affect children's emotion attributions in the happy victimizer task. This is surprising, because attributing (moral) emotions in the happy victimizer task has a strong cognitive component: participants need to have a basic understanding of the conflict represented in the task (i.e., the conflict between fulfilling selfish desires vs. upholding a moral norm), the action choices available to the victimizer, as well as the consequences of these actions (Malti & Ongley, 2014). So far, two types of cognitive abilities have been related to emotion attribution in the happy victimizer task: inhibitory control and counterfactual reasoning ability.

Inhibitory control has been conceptualized as the conscious regulation or inhibition of a pleasurable and dominant but maladaptive response (Kochanska, Murray, & Coy, 1997; Rothbart, 1989), an ability that develops over the course of childhood and early adolescence.

As pointed out by Gummerum et al. (2010), the happy victimizer situation constitutes a prosocial moral dilemma (Eisenberg, 1986), in which a person's (selfish) desires conflict with prosocial moral norms. Attributing morally appropriate (negative) emotions to the violator requires participants to give priority to moral norms over the violator's personal desires. According to Yuill, Perner, Pearson, Peerbhoy, & van den Ende (1996), by 5 years of age children take a subjective view of desire fulfillment, that is, children understand that a person will be pleased if s/he gets what s/he wants. Consequently, children adopting a subjective orientation towards desire would attribute positive emotions to a happy victimizer, if the transgression fulfills the victimizer's personal desires. Based on this research, the attribution of positive emotions to a victimizer who fulfilled his/her personal desires would be the dominant but (morally) maladaptive response. Inhibitory control abilities might help children to overcome this dominant response and attribute negative emotions to the victimizer. Colasante, Zuffiano, Bae, and Malti (2014) measured 4- and 8-year-old children's tendency to show inhibitory control abilities via caregiver-report and found that inhibitory control was significantly positively related to the attribution of negative emotion attributions in happy victimizer tasks.

Counterfactual thinking has been defined as the capacity to compare reality to an imagined alternative (Roese, 1997), or the ability to "hold in mind two possibilities" (Beck, Robinson, Carroll, & Apperly, 2006, p. 414). Research has shown that only at around 7 years of age can children understand that a factual and a counterfactual event are two possibilities that could both have realistically occurred in the past (Beck et al., 2006). Based on studies with adults and children (e.g., Mandel & Dhimi, 2005; Meehan & Byrne, 2005; Niedenthal, Tangney, & Gavanski, 1994), Gummerum, Cribbett, Nogueira Nicolau, and Uren (2013) argued that the attribution of negative emotions to the victimizer is related to the ability to spontaneously undo a negative factual situation (e.g., the classmate pushing the child off the

swing) and to imagine alternative counterfactual scenarios that might have led to a better outcome (e.g., the classmate asking the child to take turns on the swing). The authors showed that 8-year-old children had higher counterfactual reasoning abilities than 4-year-olds, and that counterfactual reasoning positively predicted negative emotion attributions. Furthermore, giving children a counterfactual prompt that reminded them to think of alternatives to reality (the norm violation) increased negative emotion attribution in both age groups.

The role of response format

The research reviewed above indicates that young children's difficulty with attributing moral (negative) emotions in the happy victimizer task might be partly due to their limited cognitive abilities, such as inhibitory control or counterfactual reasoning. If this is the case, then making the happy victimizer task less cognitively demanding might increase the attribution of negative emotions to a victimizer even in young children. Previous research has shown that changing the way children respond to a task helps them in overcoming (some of) its cognitive demands. This is particularly true for tasks that required children to inhibit an incorrect but salient or dominant response to arrive at a correct solution. For example, Carlson et al. (1998) presented 3-year-old children with a deception task. Correct responses in this task required participants to inhibit a salient and dominant response. In a standard condition, participants had to indicate their choices by pointing with their finger to a location. In an arrow condition, children pointed with a rotating arrow, a novel non-standard response mode. Compared to the standard condition, children in the arrow condition were significantly more likely to use deception and correctly attributed a false belief to their opponent in the deception task. Similarly, Hala and Russell (2001) found that 3-year-olds' correct deceptive choices in the Windows Task were significantly higher when children responded with a novel pointing device or indicated their choices with a marker (a non-standard response) than when they pointed with their finger (a standard response). Hala and Russell (2001) suggested that

non-standard response modes reduce the inhibitory demands of the deception tasks. Standard responses, such as pointing with a finger, are well-practiced and common in children and invite unreflective behaviour that is influenced by salience. Non-standard responses, on the other hand, are less likely to be practiced and spontaneous and are therefore more likely to lead to reflective and correct choices.

Children's inhibition of a prepotent or dominant response can also be improved by introducing a delay before a response. Diamond et al. (2002) tested 4-year-old children on the day-night task, in which participants have to keep two rules in mind and in which they have to inhibit the most salient dominant response. Introducing a ditty (i.e., the experimenter singing "Think about the answer. Don't tell me.") between the presentation of a stimulus and children's responses significantly improved participants' performance on the task compared to a standard condition. Thus, having to wait might allow children to overcome the dominant but incorrect response and compute the correct answer. Similarly, Beck et al. (2011) showed that both pointing with an arrow (a non-standard response) and asking children to wait before they made their choices, improved 3- to 5-year-olds' performance on counterfactual reasoning tasks compared to a standard finger-pointing condition. Successful completion of counterfactual tasks required children to ignore their knowledge about the factual world.

Carroll and colleagues (Carroll, FitzGibbon & Critchley, 2014; Carroll, Riggs, Apperly, Graham, & Geoghegan, 2012) investigated the response-mode effect for a number of executive function and theory of mind tasks to gauge the cognitive processes underlying preschool children's improved performance with non-standard response modes. They found that alternative response modes (e.g., pointing with an arrow) led to more correct responses only on the Windows Task, a measure of executive function, but not on false belief or inhibitory control tasks (Carroll et al., 2012). Thus, the response-mode effect is task-specific, and different types of alternative responses might help performance in different types of

tasks. Whereas inhibitory control and counterfactual reasoning may be boosted by introducing a delay (Beck et al., 2011; Diamond et al., 2002), strategic reasoning in children might be enhanced by using non-standard response formats. Success on strategic reasoning tasks (e.g., the Windows Task and other deception tasks) typically requires children to devise and act on an appropriate strategy that runs counter to an incorrect but salient response. Carroll et al. (2014) suggested that non-standard response formats gives children the time to cognitively distance themselves from the task, inhibit the dominant but incorrect response, and arrive at a reflective, reasoned, and correct answer.

The present research

Given this research, we investigated whether different types of response formats would also affect children's emotion attribution to a victimizer. As discussed above, there is correlational and experimental evidence that cognitive abilities, such as inhibitory control and counterfactual reasoning, play a role for children's moral emotion attribution in the happy victimizer task (Colasante et al., 2014; Gummerum et al., 2013). Since children showed improved performance in inhibitory control and counterfactual reasoning tasks with alternative response formats, we expected that such alternative response formats would also increase the attribution of negative emotions to the victimizer.

We studied the role of response format for both emotion attribution and moral motivation with respect to the victimizer and when children were asked to imagine themselves in the role of the victimizer (i.e., how would children feel if they were the victimizer). Previous research has shown that (young) children are more likely to attribute negative moral emotions and show higher moral motivation if they are asked to imagine themselves in the role of the victimizer (Keller et al., 2003; Malti & Keller, 2010). We investigated whether alternative response formats are particularly beneficial for emotion

attribution to the victimizer (instead of self-as victimizer), because ascribing appropriate moral emotions to the victimizer seems to be a more difficult task for younger children.

Study 1

Study 1 tested the response format effect for moral emotion attribution and moral motivation in a sample of 4- to 6-year-old British children. A majority of studies using alternative response formats investigated this effect in 3- to 5-year-old children, and we were interested whether changes in response format affected the moral emotion attribution and moral motivation of younger and older children to a similar degree. Gummerum et al. (2013) showed that both 4- and 8-year old children's moral emotion attribution benefitted from a counterfactual prompt that reminded participants of potential alternative actions to the factual reality. Given these findings, we expected no age differences in the response format effect.

Study 1 asked participants to respond to the happy victimizer questions in one of three ways, in a normal condition, an arrow condition, and a wait condition. In the normal condition, which corresponds to methods used in previous happy victimizer research, participants had to answer by pointing with their finger. Waiting before giving an answer has been shown to improve children's responses in both inhibitory-control tasks and counterfactual reasoning tasks (Beck et al., 2011; Diamond et al., 2002). In both types of tasks, as in the happy victimizer task, children have to devise a correct response (e.g., the victimizer violated a moral norm, therefore should feel bad) while being faced with a dominant but incorrect response option (e.g., the victimizer got what s/he wanted and therefore feels good). Thus, children need to inhibit a dominant, but incorrect response to arrive at the correct solution, and having to wait might help with this process.

In the arrow condition, participants had to point with an arrow instead of their finger. Carroll et al. (2012) found that pointing with an arrow did not lead to more correct responses in an inhibitory control tasks, whereas Beck et al. (2011) showed that children's responses to

a counterfactual reasoning task improved both in an arrow-pointing and wait condition compared to a normal, finger-pointing condition. Beck et al. (2011) argued that pointing with a finger is a well-practised response that is very hard for young children to refrain from. Because it is such an automatic way of responding for young children, it leads to quick and unreflective answers. Instead, pointing with an arrow is an unusual and new way of responding for children that does not allow for a quick response.

Carroll et al. (2014) investigated the cognitive basis of alternative responses, such as pointing with an arrow, testing three different accounts. According to the delay account, alternative response-modes slow down children's responses thus helping them to overcome the dominant, incorrect response. According to the attentional support account, pointing with an arrow offers children an alternative focal point to fix their attention on, instead of focusing on the attentionally salient dominant response. Thus, an alternative way of responding helps children to refocus their attention away from the dominant response option. According to the cognitive distancing account, pointing with a finger is a natural, practised response for children, which leads to unreflective behaviour driven by salience. In contrast, pointing with an arrow is an unnatural (i.e., unpractised) response for children, is less likely to be associated with unreflective and more likely to lead to reflective responses. Based on their findings, Carroll et al. (2014) concluded that the response-mode effect likely arises from cognitive distancing – pointing with an arrow discourages spontaneous unreflective answers and encourages children to reflect on their responses. Note that his interpretation is in line with Beck et al.'s (2011) interpretation of response-mode effects in counterfactual reasoning tasks.

Following this line of argument, comparing children's moral emotion attribution in a wait and an arrow-pointing condition might allow identifying the cognitive basis of children's moral emotion attribution in more detail. If children's difficulty with attributing moral

emotions is due to impulsive, unreflective responding, then both waiting and pointing with an arrow should improve moral emotion attribution and moral motivation compared to a normal condition. If children's difficulty with attributing moral emotions is a consequence of responding too quickly, then we would expect an increase of moral emotion attribution and moral motivation only in the wait, but not the arrow pointing and normal conditions.

Method

Participants

Ninety-three 4- to 7-year-old children participated ($M_{Age} = 67.38$ months, $SD = 10.23$ months; range = 48 to 88 months; 42 girls). Children were recruited either from a participant register at the author's institution or from primary schools in southern England. Ninety-eight percent of the sample was White-British, with the remaining participants either having an Eastern European or South Asian background. Most participants came from lower-middle to middle-class families.

Procedure

The study was approved by the university's behavioural ethics committee, and all parents/guardians gave informed consent. Participants were tested individually, either in a separate room in their primary school or at the premises of the university's BabyLab. All children were briefed about the study, and their right to withdraw and confidentiality was explained in age-appropriate language.

Three happy victimizer tasks were presented to participants in counterbalanced order. Participants were tested in one of three conditions: (1) in the normal condition, participants were asked to use their finger to point to one face on an emotion scale; (2) in the arrow condition, participants were asked to use a paper arrow cut-out to point to an emotion face; (3) in the wait condition, participants were asked to throw a balloon into the air and wait for it

to touch the ground before using their finger to point to an emotion face. Once all tasks were completed, participants were debriefed.

Materials

Happy Victimizer task. Children were presented with three short stories (taken from Keller et al., 2003), each with cartoon illustrations to assist the child. In the stealing story, the victimizer took another child's chocolate while the other child was looking away; in the pushing story, the victimizer pushed another child off a swing; in the not-sharing story, the victimizer did not share colour pencils with another child. The gender of the story protagonists was matched to the gender of the participant. After each story children were asked a series of questions:

1. Moral judgment: Was it right what (the victimizer) did? Why?
2. Emotion attribution victimizer: How does (the victimizer) feel? Why?
3. Emotion attribution self as victimizer: How would you feel, if you were (the victimizer)? Why?

For the emotion attribution questions, participants were asked to pick one of 5 feeling faces ranging from very sad/bad (deep frown), sad/bad (frown), so-so (neutral face), happy/good (smile), to very happy/good (wide smile). Participants' answers concerning the moral judgments questions as well as the reasons for their emotion attributions were noted verbatim by the experimenter.

Coding

Participants responses to the moral judgment questions ('Is it right what the (victimizer) did?') were coded numerically as either (1) for 'yes' it is right, (2) for 'no' it is not right or (3) for uncodable as the participant either did not know the answer or did not respond at all. Participants' responses with regard to the emotion attribution questions were coded as (-2) very sad/bad, (-1) bad/sad, (0) so-so, (1) happy/good, and (2) very happy/good.

Responses to the open-ended justification questions (Why is it right/not right? Why does the victimizer feel like this? Why do you feel like this?) were coded according to four mutually exclusive categories:

1. *Outcome-oriented* reasons when the victimizers' actions or emotions were justified by referring to a desired outcome (e.g., "he wanted the chocolate").
2. *External-sanctioned-oriented* reasons involved possible disapproval or punishment by the victim or an authority (e.g., "he will be told off by his mum").
3. *Morally oriented* reasons referred to moral norms such as "It is not right to steal", or negative (emotional) consequences for the victim (e.g., "the other would be sad").
4. *Uncodable* responses were uninterpretable with regards to the story (e.g., "it is sunny today and that is why") or any "I don't know" responses.

Eighteen percent of the open-ended questions were coded by two independent raters. Inter-rater reliability was excellent with $\kappa = .93$.

In line with previous research (e.g., Malti, Gummerum, Keller & Buchmann, 2009), we coded moral motivation scores which combined participants' emotion attributions and justifications for emotion attributions to victimizers and self as victimizer in the three stories. A score of 0 indicates attribution of positive emotion to the victimizer or self as victimizer that is justified by outcome-oriented reasons or uncodable reasons. A score of 1 indicates the attribution of a neutral or negative emotion justified by external-sanction-oriented or uncodable reason. A score of 2 indicates the attribution of a neutral or negative emotion justified by a morally oriented reason.

Results

Preliminary analyses indicated that age did not differ by condition, $F(2, 62) = .04, p = .96$. Concerning moral judgment, 5 (8%) participants in the pushing story, 6 (10%) participants in the stealing story, and 7 (12%) of participants in the not sharing story judged the violators' actions as "right". Moral judgment in the three stories did not correlate with age.¹

Emotion attribution to the victimizer significantly correlated across stories (stealing-helping, $r(92) = .39, p < .001$; stealing – pushing, $r(92) = .32, p = .002$; helping-pushing, $r(92) = .31, p = .003$), as was emotion attribution to the self as victimizer (stealing - helping, $r(92) = .47, p < .001$; stealing – pushing, $r(92) = .46, p < .001$; helping - pushing, $r(92) = .61, p < .001$). We therefore created two new variables, Emotion Attribution to the Victimizer and Emotion Attribution to the Self as Victimizer, consisting of the mean emotion attribution to the victimizer or self as victimizer attributions across the three stories.

A repeated-measures ANCOVA with the within-subject variable victimizer (other as victimizer, self as victimizer), the between-subject variables condition (normal, wait, arrow), the covariate age (in months), and the dependent variable emotion attribution revealed the significant main effects of Condition, $F(2, 89) = 9.09, p < .001, \eta p^2 = .17$, and Age, $F(1, 89) = 6.82, p = .01, \eta p^2 = .07$ and the marginally significant effects of Victimizer, $F(1, 89) = 3.49, p = .07, \eta p^2 = .04$ and Victimizer x Age, $F(1, 89) = 3.39, p = .07, \eta p^2 = .04$. Post-hoc Bonferroni tests indicated that participants attributed significantly more negative emotions in the wait and arrow conditions than in the normal condition (all $ps < .01$). As shown in Figure 1a, mean emotion attribution scores to victimizer or self were slightly positive (indicating that participants attributed so-so/happy/good emotions) in the normal condition, but they were negative in the wait and arrow conditions (indicating that participants attributed bad/sad emotions). With increasing age, participants attributed more negative emotions to self as victimizer, $r(92) = -.26, p = .01$, but not to the victimizer, $r(92) = -.04, p = .74$. Across ages

and conditions, participants tended to attribute slightly more negative emotions to other than to self as victimizer (Other as Victimizer: $M = -.41$, $SD = .94$; Self as victimizer: $M = -.36$, $SD = 1.19$).

Participants' moral motivation scores significantly correlated across the three stories for victimizer (stealing – helping, $\rho(33) = .42$, $p = .01$; stealing – pushing, $\rho(39) = .62$, $p < .001$; helping – pushing, $\rho(31) = .62$, $p < .001$) and self as victimizer (stealing – helping, $\rho(31) = .53$, $p = .002$; stealing – pushing, $\rho(44) = .46$, $p = .002$; helping – pushing, $\rho(34) = .65$, $p < .001$). We created two new variables, Moral Motivation for Victimizer and Moral Motivation for Self as Victimizer, consisting of the respective mean moral motivation scores across the three stories. A repeated-measures ANCOVA with the within-subject variable victimizer (other as victimizer, self as victimizer), the between-subject variables condition (normal, wait, arrow), the covariate age (in months) and the dependent variable moral motivation revealed significant main effects of Condition, $F(2, 67) = 3.94$, $p = .02$, $\eta p^2 = .10$, and Age, $F(1, 67) = 9.45$, $p = .002$, $\eta p^2 = .12$. Post-hoc Bonferroni tests indicated that participants showed significantly higher levels of moral motivation in the wait compared to the normal condition ($p = .03$) and marginally significantly higher levels of moral motivation in the arrow compared to the normal condition ($p = .08$). There was no significant difference in moral motivation between the wait and arrow condition (Figure 1b). Both Moral Motivation for Victimizer ($r(79) = .28$, $p = .01$) and Moral Motivation for Self as Victimizer ($r(78) = .36$, $p = .001$) increased with increasing age.

Discussion

Overall, these results indicate that alternative response formats, such as having to wait before making an answer or pointing with an arrow instead of one's finger, improved 4- to 6-year-old children's emotion attribution in the happy victimizer task. This points to the role of

cognitive abilities for children's moral emotion attribution (see Colasante et al., 2014; Gummerum et al., 2013).

As suggested by Diamond et al. (2002; Beck et al., 2011), having to wait before giving an answer might help children with overcoming the dominant response of attributing positive emotions to the victimizer (because s/he gets what s/he wanted), compute potential counterfactual alternatives to factual situation, and therefore attribute negative emotions to the violator. Similarly, whereas pointing with one's finger is a well-practised, automatic response that is very hard for young children to refrain from and that leads to quick and unreflective answers, pointing with an arrow is an unusual way of responding that requires children to pause and gives them the opportunity to reflect about their answers (Beck et al., 2011). Given that both waiting and pointing with an arrow lead to an increase in moral emotion attribution and, albeit marginally, moral motivation compared to the normal finger-pointing condition, we suggest that both types of alternative response formats help children with overcoming impulsive, unreflective responses and lead to more reflective and correct answers (Carroll et al., 2012, 2014; Hala & Russell, 2001).

Study 1 additionally revealed age effects known from previous research on the happy victimizer task (see Arsenio, 2014; Keller et al., 2003; Malti et al., 2009): Older children were more likely than younger ones to attribute moral emotions, particularly when attributing emotions to self-as-victimizer.

Study 2

The aim of Study 2 was to replicate the response format effect in a different cultural context, namely in Spain. Most of the research on the happy victimizer task was conducted in North-American and Western-European countries. Only a handful of studies have investigated cross-cultural effects in moral emotion attribution (e.g., Keller et al., 2003; Krettenauer & Jia, 2013; Malti & Keller, 2010). Most pertinent to the current study,

Chaparro, Kim, Fernandez, and Malti (2013) compared moral emotion attribution in 6- and 9-year-old children from Chile and Switzerland and found that 6-year-old Chilean children (like Spanish children defined as belonging to a collectivistic culture; see López-Pérez, Gummerum, Keller, Filippova, & Gordillo, 2015) attributed more (but not significantly so) moral emotion in the happy victimizer task than Swiss 6-year-olds. However, in both cultures, younger children tended to attribute positive emotions to the violator, whereas older children mostly attributed negative, moral emotions. Given these findings we were interested in (a) whether young Spanish children would show the happy victimizer effect in their emotion attributions to the violator; and (b) if yes, whether alternative response formats could ameliorate this effect, as we have found for British children in Study 1. In Study 2, we decided to compare the emotion attribution to the victimizer and moral motivation in a normal (finger-pointing) condition with a wait condition, because Study 1 found consistent response format effects for moral emotion attribution and moral motivation for the wait condition.

Method

Participants

Forty children aged 4 years-old ($M= 57$ months; $SD= 3.46$ months; 20 females) were recruited from a school in a medium-sized city in Spain. Testing was done individually. A range of ethnic and socio-economic backgrounds were represented in the sample, but participants were predominantly white (95%) and from middle-class families.

Procedure

Parents' informed consent was obtained prior to the administration of any task to the children. Participants were tested individually in quiet spaces within the school buildings. All children were briefed about the study and their right to withdraw and confidentiality was explained in age-appropriate language.

Three happy victimizer tasks were presented to participants in counterbalanced order. Participants were tested in one of two conditions: (1) in the normal condition, participants were asked to use their finger to point to one face on the emotion scale; (2) in the wait condition, participants were asked to throw a balloon into the air and wait for it to touch the ground before using their finger to point to an emotion face. Once all tasks were completed, participants were debriefed.

Materials

Study 2 employed the same three happy victimizer stories and questions as Study 1.

Coding

The coding of participants' responses to the moral judgment questions ('Is it right what the (victimiser) did?'), emotion attribution questions ('How does the victimizer feel?'; 'How would you feel if you were the victimizer?'), and their responses to the open-ended questions (Why is it right/not right? Why does the victimizer/why do you feel like this?) were equivalent to the codings used in Study 1. Concerning the open-ended questions, the interviews of nine randomly selected participants were coded by two independent raters. Inter-rater reliability was very good with $\kappa = .97$. Moral motivation scores were calculated in the same manner as in Study 1.

Results

Independent sample t-tests indicated that participants in the normal and wait conditions did not differ with regards to age, $t(38) = .45, p = .65$. Concerning moral judgment, no participant in the pushing story, 5 (12%) of participants in the stealing story, and 3 (8%) participants in the not sharing story judged that it was right what the violator did. Moral judgment in the three stories did not correlate significantly with age.¹

A repeated-measures Analysis of Variance (ANOVA) with the within-subject variables victimizer (other as victimizer, self as victimizer) and story (pushing, stealing, not

sharing) and the between-subject variables condition (normal, wait) and the dependent variable emotion attribution revealed a significant main effect of condition, $F(1, 38) = 17.85$, $p < .001$, $\eta p^2 = .32$ and a significant interaction effect of Story x Condition, $F(2, 38) = 3.16$, $p = .05$, $\eta p^2 = .08$. As shown in Table 1, whereas in both conditions the mean emotion attribution score was negative, participants in the wait condition attributed significantly more negative emotions than participants in the normal condition ($dfs = 38$, all $ps < .001$). In the wait condition, participants attributed significantly more negative emotions in the Pushing and Stealing stories than the Not-sharing story (Table 1). There was no significant difference in the attribution of moral emotions across stories in the normal condition.

Concerning participants' moral motivation, a repeated-measures ANOVA with the within-subject variables victimizer (other as victimizer, self as victimizer) and story (pushing, stealing, not sharing) and the between-subject variables condition (normal, wait) revealed a marginally significant main effect of condition, $F(1, 33) = 4.08$, $p = .07$, $\eta p^2 = .25$. Across stories and types of victimizers, participants in the wait condition displayed marginally higher levels of moral motivation compared to participants in the normal condition (see Table 2).

Discussion

Study 2 replicated and reinforced (some of) the findings of Study 1 in participants from a different culture. Having to wait before giving an answer increased the negative emotion attributed to victimizers and self-as-victimizers compared to a normal condition where children could respond immediately by pointing with a finger. Asking children to wait before responding particularly benefitted their moral emotion attributions to the violator in the Pushing and Stealing stories. Pushing (i.e., physically harming) and stealing constitute negative moral duties. Previous research indicated that children regard violations of negative moral duties as more severe than not following positive moral duties, such as not sharing (e.g. Malti, Gasser, & Buchmann, 2009). Thus, having to wait with one's response might have

helped children to think about the victimizer's transgression in more detail and attribute negative emotions according to the perceived severity of the violation.

It is worth mentioning that while children showed higher moral motivation in the wait compared to the normal condition, this response-format effect was only marginally significant. We believe that this can be best explained with a lack of power due to a relatively small sample size in Study 2. Importantly, many children (5 - 15%, depending on story, type of victimizer, and condition) did not give a reason when attributing a negative or neutral emotion to the victimizer, which, according to our coding system, would assign them a moral motivation score of 1. It is not uncommon that young children have difficulties with formulating a reason for their emotion attributions (see Krettenauer et al., 2008). We do believe that children's emotion attribution to the victimizer represent a valid insight into their understanding of the validity of moral rules, even when they were unable to produce a reason for their emotion attribution. As pointed out by Haidt (2001; see also Hume, 1751/1957), people's emotional reactions or "gut feelings" reflect their moral intuitions as to what they regard as morally right or wrong.

Although Study 2 revealed a similar response-format effect as Study 1 (at least for moral emotion attributions), even in the normal condition children attributed, on average, negative emotions. This is surprising, as the majority of empirical research in North-American and Western European countries found that 4-year-old children attribute positive emotions to the victimizer (e.g., Nunner-Winkler & Sodian, 1988). Thus, Spanish children, on average, do not show the happy victimizer effect in their emotion attributions. This suggests potential cross-cultural differences in children's moral emotion attributions, which should be explored in further studies.

General Discussion

Previous research indicated young children's difficulty with attributing negative emotions to the violator of a moral norm in the happy victimizer task might at least be partly due to their limited cognitive abilities (e.g., Colasante et al., 2014; Gummerum et al., 2013; Krettenauer et al., 2008). While previous research has shown a positive correlation between 4- and 8-year-old children's negative emotion attribution in the happy victimizer task and caregiver-rated inhibitory control (Colasante et al., 2014), such correlational studies can only be suggestive of underlying causal relationships. Thus, we believe that the experimental approach with the direct manipulation of cognitive demands, as adopted in the current study, can add a more detailed understanding of how specific cognitive abilities affect moral emotion attribution. In the current studies, participants were invited to respond to the happy victimizer task in a standard format and in non-standard ways (by having to wait or pointing with an arrow). We found that these non-standard response formats increased the moral emotion attribution and moral motivation of both younger and older children from two different cultures.

The effect of different response formats has traditionally been investigated with tasks measuring children's cognitive abilities, such as deception (Carlson et al., 1998; Hala & Russel, 2001), executive functions and inhibition (Carroll et al., 2012, 2014; Diamond et al., 2002), and counterfactual reasoning (Beck et al., 2011). While all of these studies report positive effects of different non-standard response formats for different types of tasks, Carroll et al. (2012, 2014; see also Beck et al., 2011) pointed out that non-standard response modes (such as pointing with an arrow) might encourage children to cognitively distance themselves from following a prepotent or dominant response impulsively and might give them the time to formulate reasoned responses. Thus, according to that perspective, asking children to wait (Studies 1, 2) or point with an arrow (Study 1) rather than a finger helped participants to overcome their dominant response of attributing positive emotions to the victimizer, gave

them room and time to draw on their reasoning abilities, and reflect on their responses before stating them. It could be argued that Gummerum et al.'s (2013) counterfactual prompt (i.e., presenting children alternative scenarios to factual reality) has a similar function of inviting more reasoned responses.

This interpretation of the response format effect, namely that non-standard response formats allow children time to formulate more reasoned responses, could also help with integrating motivational and cognitive accounts of the happy victimizer phenomenon discussed above. Specifically, according to the motivational account (Nunner-Winler, 2007; Nunner-Winkler & Sodian, 1988), young children's dominant response would be to attribute positive emotions to the victimizer, because s/he managed to fulfil his/her (selfish) desires through the violation. Non-standard response formats could give children the time to devise a reasoned response that draws on their established understanding of moral norms and moral violations (see Turiel, 1983).

If positive, immoral emotion attributions in the happy victimizer task are indeed at least partly due to people following their dominant or preponent response and not having time to formulate a reasoned, correct answer, then this hypothesis could be investigated in further experimental studies. Dual process theories of reasoning (see Evans, 2008, for a review) assume that people's information processing can be grouped into two systems. System 1 reasoning is usually characterized by heuristic, intuitive, and automatic responses, whereas System 2 reasoning is associated with deliberate, analytical responses that rely on the ability to think hypothetically and draw on higher-order cognitive capacities. Appropriately attributing negative moral emotions to a violator in the happy victimizer task might rely, at least in part, on System 2 reasoning abilities. Previous research with adults has shown that people's recruitment of System 2 reasoning abilities can be experimentally manipulated. For example, metacognitive experiences of difficulty or disfluency (e.g., presenting information

in a difficult-to-read font) increased adults' reliance on System 2 processing styles (Alter, Oppenheimer, Epley, & Eyre, 2007). On the other hand, asking people to respond under cognitive load, depressed adults' performance and response times in Theory of Mind and executive function tasks (Apperly, Warren, Andrews, Grant & Todd, 2011; Bull, Phillips & Conway, 2008). The effect of such manipulations of System 1/System 2 processing on moral emotion attribution and moral motivation might be tested in future studies.

Previous research has mainly investigated the response format effect in children aged 3 to 5 years old. Study 1 included a wider age range of 4- to 7-year-old children, mainly because the happy victimizer effect tends to decrease in these ages (Arsenio, 2014). Like numerous other studies, Study 1 showed the attributions of negative emotions to the victimizer and moral motivation increased with age. Similar to Gummerum et al. (2013) both younger and older children benefitted equally from a non-standard response format.

We did not find that non-standard response formats affected the attribution of emotion to a hypothetical victimizer or to oneself as victimizer differently. This is surprising, as previous research (e.g., Keller et al., 2003) found that children are more likely to attribute negative moral emotions to themselves as victimizer than to a hypothetical victimizer. It has been proposed (Gummerum et al., 2013; Sokol, 2004) that inviting children to imagine themselves as the victimizer ("how would you feel, if you were the victimizer?") encourages them to construct alternatives to reality, that is, to engage in counterfactual reasoning. As argued above, the non-standard response formats employed in the current studies gave participants time to reflect on their responses to the emotion attribution questions. Our findings indicate that this "reflection time" benefitted both emotion attribution and moral motivation to victimizer and self-as-victimizer.

Even though differences in methodologies precluded us to make direct comparisons between the British (Study 1) and Spanish (Study 2) samples, the differences in moral

emotion attributions between the two samples, particularly in the normal response format, warrant a comment. The normal response condition was modelled on the methods typically used in happy victimizer research (see Arsenio, 2014; Krettenauer et al., 2008). Similar to findings reported in previous research, in the normal response condition British participants attributed, on average, neutral or slightly positive emotions to the victimizer, and negative moral emotion attribution increased with age. However, Spanish children, on average, reported that the victimizer or self-as-victimizer would feel bad, even in the normal response condition. This is particularly noteworthy, as the Spanish participants were 4-year-olds, an age where the majority of children have been reported to attribute positive emotions to a victimizer. It might be that children from collectivistic cultures, because of their culture's stronger emphasis on paying attention to the needs of (close) others, tend to focus more on the victim, which, in turn, affects their moral emotion attribution. Future research should investigate cultural differences in moral emotion attribution and moral motivation in more detail. In general, while a host of studies have assessed the role of individual differences in social-cognitive, social-emotional, and cognitive abilities for the development of moral emotions (see Krettenauer et al., 2008; Malti & Ongley, 2014), how meso- and macro-level factors, such as relationships with peers and parents (Malti & Buchmann, 2010; Malti, Eisenberg, Kim & Buchmann, 2013) or culture (Chaparro et al., 2013; Keller et al., 2003; Krettenauer & Jia, 2013) affect the development of moral emotion attribution in the happy victimizer task is a comparatively understudied topic.

Investigating the cognitive, motivational, and social factors underlying moral emotion attribution does not just have implications for theories of moral functioning and behaviour, but also practical implications. A number of studies (see Malti & Krettenauer, 2013, for a meta-analysis) suggested that attributing negative emotions to a victimizer play an important role in children's morally relevant behaviour. Specifically, Malti and Krettenauer's (2013)

meta-analysis revealed small-size relationships between emotion attributions and prosocial behaviours (e.g., sharing) and moderate-size relationships between emotion attributions and antisocial behaviours (e.g., physical harm, aggression). Consequently, supporting children's moral emotion attributions might contribute their morally relevant behaviours in real-life situations. Our studies suggest that in addition to encouraging children's internalization of moral norms (as proposed by a motivational account of moral emotion attribution), assisting the development cognitive abilities (e.g., though encouraging and giving time for reflection on moral norms; training inhibitory control abilities) might be another fruitful avenue to advance mature moral emotion attributions and moral behaviour.

In sum, the results from this research showed that alternative response formats help children's moral emotion attribution in the happy victimizer paradigm. This adds to the growing understanding of the role of cognitive factors in children's moral emotion attribution. Given the importance of correctly anticipating actors' emotions for the internalization of moral norms and moral behaviour (Keller, 2004; Malti & Krettenauer, 2013), future research should continue to assess how cognitive, social-cognitive, and social variables contribute to the development of children's moral emotions and moral functioning.

References

- Alter, A. L., Oppenheimer, D. M., Epley, N., & Eyre, R.N. (2007). Overcoming intuition: Metacognitive difficulty activates analytic reasoning. *Journal of Experimental Psychology: General, 136*, 569-576.
- Apperly, I. A., Warren, F., Andrews, B. J., Grant, J., & Todd, S. (2011). Developmental continuity in theory of mind: speed and accuracy of belief-desire reasoning in children and adults. *Child Development, 82*, 1691-1703.
- Arsenio, W.F. (2014). *Moral emotion attributions and aggression*. In M. Killen & J. Smetana (Eds.), *Handbook of moral development* (2nd edition) (pp. 235-256). New York: Psychology Press.
- Arsenio, W. A., & Kramer, R. (1992). Victimizers and their victims: children's conceptions of the mixed emotional consequences of moral transgressions. *Child Development, 63*, 915-927.
- Arsenio, W. F., & Lover, A. (1995). *Children's conceptions of sociomoral affect: Happy victimizers, mixed emotions and other expectancies*. In M. Killen & D. Hart (Eds.), *Morality in everyday life: Developmental perspectives* (pp. 87-128). Cambridge: Cambridge University Press.
- Beck, S. R., Carroll, D. J., Brunson, V. E. A., & Gryg, C. K. (2011). Supporting children's counterfactual thinking with alternative modes of responding. *Journal of Experimental Child Psychology, 108*, 190-202.
- Beck, S. R., Robinson, E. J., Carroll, D. J., & Apperly, I. A. (2006). Children's thinking about counterfactuals and future hypotheticals as possibilities. *Child Development, 77*, 413-426.
- Bull, R., Phillips, L.H. & Conway, C. (2008). The role of control functions in mentalizing: Dual task studies of Theory of Mind and executive function. *Cognition, 107*, 663-672.

- Carlson, S. M., Moses, L. J., & Hix, H. R. (1998). The role of inhibitory processes in young children's difficulties with deception and false belief. *Child Development, 69*, 672-691.
- Carroll, D.J., Fitzgibbon, L. & Critchley, A. (2014). Why do alternative ways of responding improve children's performance on tests of strategic reasoning? *British Journal of Developmental Psychology, 32*, 195-204.
- Carroll, D. J., Riggs, K. J., Apperly, I. A., Graham, K. & Geoghegan, C. (2012). How do alternative ways of responding influence 3- and 4-year-olds' performance on tests of executive function and theory of mind? *Journal of Experimental Child Psychology, 112*, 312-325.
- Chaparro, M. P., Kim, H., Fernandez, A. & Malti, T. (2013). The development of children's sympathy, moral emotion attributions, and moral reasoning in two cultures. *European Journal of Developmental Psychology, 10*, 495-509.
- Colasante, T., Zuffianò, A., Bae, N.Y. & Malti, T. (2014). Inhibitory control and moral emotions: Relations to reparation in early and middle childhood. *Journal of Genetic Psychology: Research and Theory on Human Development, 175*(5-6), 511-527.
- Cushman, F. A. (2013). Action, outcome and value: A dual-system framework for morality. *Personality and Social Psychology Review, 17*, 273-292.
- Diamond, A., Kirkham, N. Z. & Amso, D. (2002). Conditions under which young children can hold two rules in mind and inhibit a prepotent response. *Developmental Psychology, 38*, 352-362.
- Eisenberg, N. (1986). *Altruistic emotion, cognition and behavior*. Hillsdale, NJ: Erlbaum.
- Eisenberg, N. (2000). Emotion, regulation and moral development. *Annual Review of Psychology, 51*, 665-697.
- Evans, J. S. B. (2008). Dual-processing accounts of reasoning, judgment, and social cognition. *Annual Review of Psychology, 59*, 255-278.

- Gintis, H. (2000). Strong reciprocity and human sociality. *Journal of Theoretical Biology*, 206, 169–179.
- Greene, J.D., Sommerville, R.B., Nystrom, L.E., Darley, J.M. & Cohen, J.D. (2001). An fMRI Investigation of Emotional Engagement in Moral Judgment. *Science*, 293, 2105-2108.
- Gummerum, M., Cribbett, C., Nogueira Nicolau, A. & Uren, R. (2013). Counterfactual reasoning and moral emotion attribution. *European Journal of Developmental Psychology*, 10, 144-158.
- Gummerum, M., Hanoch, Y., Keller, M., Parsons, K. & Hummel, A. (2010). Preschoolers' allocations in the dictator game. The role of moral emotions. *Journal of Economic Psychology*, 31, 25-34.
- Haidt, J. (2001). The emotional dog and its rational tail. *Psychological Review*, 108, 814–834.
- Hala, S. & Russell, J. (2001). Executive control within strategic deception: a window on early cognitive development? *Journal of Experimental Child Psychology*, 80, 112-141.
- Hoffman, M. L. (2000). *Empathy and moral development: Implications for caring and justice*. Cambridge, UK: Cambridge University Press.
- Huebner, B., Dwyer, S. & Hauser, M. (2008). The role of emotion in moral psychology. *Trends in Cognitive Sciences*, 13, 1– 6.
- Hume, D. (1957). *Inquiry concerning the principles of morals*. New York: Prentice Hall (Original work published 1751).
- Kant, I. (1965). *Critique of pure reason*. New York: St. Martin's (Original work published 1781).
- Keller, M. (2004). Self in relationship. In D. K. Lapsley & D. Narvaez (Eds.), *Morality, self, and identity: Essays in honor of Augusto Blasi* (pp. 269–300). Mahwah, NJ: Erlbaum.

- Keller, M., Lourenço, O., Malti, T. & Saalbach, H. (2003). The multifaceted phenomenon of 'happy victimizers': A cross-cultural comparison of moral emotions. *British Journal of Developmental Psychology, 21*, 1–18.
- Kochanska, G., Murray, K. & Coy, K.C. (1997). Inhibitory control as a contributor to conscience in childhood: from toddler to early school age. *Child Development, 68*, 263–277.
- Krettenauer, T. & Eichler, D. (2006). Adolescents' self-attributed moral emotions following a moral transgression: relations with delinquency, confidence in moral judgment, and age. *British Journal of Developmental Psychology, 24*, 489–506.
- Krettenauer, T. & Jia, F. (2013). Investigating the *actor effect* in moral emotion expectancies across cultures: A comparison of Chinese and Canadian adolescents. *British Journal of Developmental Psychology, 31*, 349–362.
- Krettenauer, T., Jia, F., & Mosleh, M. (2011). The role of emotion expectancies in adolescents' moral decision making. *Journal of Experimental Child Psychology, 108*, 358–370.
- Krettenauer, T., Malti, T. & Sokol, B. W. (2008). Development of moral emotions and the happy-victimizer phenomenon: A critical review of theory and application. *European Journal of Developmental Science, 2*, 221–235.
- López-Pérez, B., Gummerum, M., Keller, M., Filippova, E., & Gordillo, V. (2015). Sociomoral reasoning in children and adolescents from two collectivistic cultures. *European Journal of Developmental Psychology, 12*, 204–219.
- Malti, T. & Buchmann, M. (2010). Socialization and individual antecedents of adolescents' and young adults' moral motivation. *Journal of Youth and Adolescence, 39*, 138–149.

- Malti, T., Eisenberg, N., Kim, H. & Buchmann, M. (2013). Developmental trajectories of sympathy, moral emotion attributions, and moral reasoning: The role of parental support. *Social Development, 22*, 773-793.
- Malti, T., Gasser, L., & Buchmann, M. (2009). Aggressive and prosocial children's emotion attributions and moral reasoning. *Aggressive Behavior, 3*, 90–102.
- Malti, T., Gummerum, M., Keller, M. & Buchmann, M. (2009). Children's moral motivation, sympathy, and prosocial behavior. *Child Development, 80*, 442-460.
- Malti, T. & Keller, M. (2010). Development of moral emotions in cultural context. In W. Arsenio & E. Lemerise (Eds.), *Emotions, aggression, and morality in children: Bridging development and psychopathology* (pp. 177-198). Washington: American Psychological Association.
- Malti, T. & Krettenauer, T. (2013). The relation of moral emotion attributions to pro- and antisocial behavior: A meta-analysis. *Child Development, 84*, 397-412.
- Malti, T. & Ongley, S. F. (2014). The development of moral emotions and moral reasoning. In M. Killen & J. Smetana (Eds.), *Handbook of moral development (2nd edition)* (pp. 163-183). New York: Psychology Press.
- Mandel, D. R. & Dhimi, M. K. (2005). "What I did" versus "what I might have done": Effect of factual and counterfactual thinking on blame, guilt, and shame in prisoners. *Journal of Experimental Social Psychology, 41*, 627-635.
- Meehan, J. E. & Byrne, R. M. J. (2005). *The temporal order effect in children's counterfactual thinking*. In B. G. Bara, L. Barsalou, & M. Bucciarelli (Eds.), *Proceedings of the 27th Annual Conference of the Cognitive Science Society*. Stresa
- Nichols, S. (2002). Norms with feeling: towards a psychological account of moral judgment. *Cognition, 84*, 221-236.

- Niedenthal, P.M., Tangney, J.P. & Gavanski, I. (1994). If only I weren't versus If only I hadn't: distinguishing shame and guilt in counterfactual thinking. *Journal of Personality and Social Psychology*, 67, 584-595.
- Nunner-Winkler, G. (2007). Development of moral motivation from childhood to early adulthood. *Journal of Moral Education*, 36, 399-414.
- Nunner-Winkler, G. & Sodian, B. (1988). Children's understanding of moral emotions. *Child Development*, 59, 1323-1338.
- Roese, N.J. (1997). Counterfactual thinking. *Psychological Bulletin*, 121, 133-148.
- Rothbart, M. K. (1989). Temperament and development. In G. A. Kohnstamm, J.E., Bates, & M.K. Rothbart (Eds.), *Temperament in childhood* (pp. 187-247). Chichester. England: Wiley.
- Sokol, B. W. (2004). *Children's conceptions of agency and morality: Making sense of the happy victimizer phenomenon*. Unpublished doctoral dissertation. University of British Columbia, Vancouver, Canada.
- Sokol, B. W., Chandler, M. J. & Jones, C. (2004). From mechanical to autonomous agency: The relationship between children's moral judgments and their developing theories of mind. In J. A. Baird & B. W. Sokol (Eds.), *New directions for child and adolescent development: Connections between theories of mind and socio-moral development*, 103 (pp.19-36). San Francisco: Jossey-Bass.
- Turiel, E. (1983). *The development of social knowledge: Morality and convention*. Cambridge: Cambridge University Press.
- Yuill, N., Perner, J., Pearson, A., Peerbhoy, & van den Ende, J. (1996). Children's changing understanding of wicked desires: From objective to subjective and moral. *British Journal of Developmental Psychology*, 14, 457-475.

Footnotes

¹ The following analyses were conducted on the full sample, which included both participants who, in their moral judgment, stated that what the violator did was “right” and participants, who stated that what the violator did was “not right”. We additionally conducted analyses on a reduced sample, which only included those participants who, in their moral judgment, stated that what the violator did was “not right”. For Study 1, analyses with the reduced sample revealed significant main effects of condition and age. Participants attributed more moral emotions in the wait and arrow condition than in the normal condition, and showed higher moral motivation in the wait than in the normal condition. With increasing age, participants attributed more moral emotions and showed higher moral motivation. For Study 2, analyses on the reduced sample revealed a significant main effect of condition, with participants in the wait condition attributing significantly more moral emotion (showing higher moral motivation) than participants in the normal condition. More details concerning the analyses and results of the reduced sample are available from the first author upon request.