

UC Irvine

UC Irvine Previously Published Works

Title

The good, the rich, and the powerful: How young children compensate victims of moral transgressions depending on moral character, wealth, and social dominance

Permalink

<https://escholarship.org/uc/item/70j1n6kr>

Authors

Schwartz, Flora
Chernyak, Nadia

Publication Date

2024-08-20

DOI

10.1016/j.jecp.2024.106045

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at

<https://creativecommons.org/licenses/by/4.0/>

Peer reviewed



Contents lists available at ScienceDirect

Journal of Experimental Child Psychology

journal homepage: www.elsevier.com/locate/jecp



The good, the rich, and the powerful: How young children compensate victims of moral transgressions depending on moral character, wealth, and social dominance



Flora Schwartz^{a,*}, Nadia Chernyak^b

^a *Laboratoire Cognition, Langues, Langage, Ergonomie (CLLE), Université de Toulouse, CNRS, 31058 Toulouse Cedex 9, France*

^b *Department of Cognitive Sciences, University of California, Irvine, Irvine, CA 92617, USA*

ARTICLE INFO

Article history:

Received 22 December 2023

Revised 15 July 2024

Available online 20 August 2024

Keywords:

Restorative justice

Compensation

Punishment

Moral judgment

Victim

Children

ABSTRACT

Theories of justice suggest that it serves two main purposes: punishment and restoration. Although punishment emerges early and has been well-documented, little is known about the contexts in which young children engage in restorative practices like compensation for victims. The current study investigated whether children's engagement in compensation and punishment (which often involve a redistribution of resources) was sensitive to characteristics of the perpetrator and victim known to shape distributive justice decisions (decisions about how resources should be distributed), such as social dominance, resource inequality, and moral character. A total of 54 children aged 3 to 7 years completed a series of moral judgment experiments. Each experiment featured interactions between a perpetrator and a victim, ending with the perpetrator stealing the victim's toy. In Experiment 1 ($N = 44$), social dominance did not affect punishment or compensation overall, but older children compensated the dominant victim (but not the subordinate victim) less than younger children. In Experiment 2 ($N = 42$), children compensated the poor victim more than the rich victim, but they did not punish the rich perpetrator more than the poor perpetrator. In Experiment 3 ($N = 45$), children compensated the victim with a good moral character more than the victim with a bad moral character, and the victim's moral character did not influence punishment. Altogether, these findings offer

* Corresponding author.

E-mail address: flora.schwartz.pro@gmail.com (F. Schwartz).

<https://doi.org/10.1016/j.jecp.2024.106045>

0022-0965/© 2024 Elsevier Inc. All rights are reserved, including those for text and data mining, AI training, and similar technologies.

new insights into how children resort to compensation for victims as a complement to, rather than an alternative to, punishment.

© 2024 Elsevier Inc. All rights are reserved, including those for text and data mining, AI training, and similar technologies.

Introduction

Addressing moral transgressions is a daily concern for human societies. In small-scale and large-scale societies, justice is usually deferred to a third party in charge of judging the moral violation based on specific conventions (Henrich et al., 2010). Responses to moral transgressions may take two main forms: *punishment* and *restoration* (restoring justice to the victims). Previous work has mainly focused on the former (punishment), which is a common treatment inflicted to a transgressor who breaks a morale rule, for instance, by harming someone or stealing property. In this case, punishment can serve a range of motives such as deterrence, protection, and retribution—that is, inflicting on the transgressor a cost proportional to the harm the transgressor caused (Boyd et al., 2003; Carlsmith et al., 2002; Keller et al., 2010; Robinson & Darley, 1995). Such retributive motive toward a wrongdoer lies at the core of the traditional justice system in many countries (Carlsmith et al., 2002; Van Ness & Strong, 2015), and research in social and behavioral science suggests that the existence of retributive justice may be grounded in early-developing punitive intuitions (Kanakogi et al., 2022) that may be evolutionarily rooted (Henrich & Boyd, 2001; Raihani et al., 2010). Some authors have even suggested that punishment may serve as a universal response to moral transgressions (Henrich et al., 2006; House et al., 2020) that may promote cooperation in large-scale societies (Fehr & Gächter, 2002; Gächter et al., 2008; Gürer et al., 2006) or help to restore fairness (Baumard, 2011).

However, other lines of research have questioned the prevalence of punishment, showing that individuals more often resort to restoration (Baumard, 2010; Fitouchi & Singh, 2023; Petersen et al., 2012), especially in small-scale societies (Baumard, 2010; Fitouchi & Singh, 2023; Marlowe, 2009; Wiessner, 2020). In contrast to punishment, restoration is concerned with restoring rights to the victim and repairing harms. One restorative intervention is compensation for the victim in response to the damage suffered, with the aim of restoring the victim's life as closely as possible to what it was before being harmed (Darley & Pittman, 2003). Compensation is regularly used in the traditional justice system, alone or in addition to punishment (Ashworth, 1986; LaFave, 2000), and can be included in a wide range of situations as part of both retributive justice and restorative justice. Experimental psychology studies have increasingly suggested that people often prefer compensation of the victim to punishment of the transgressor (Chavez & Bicchieri, 2013; Dhaliwal et al., 2021; Heffner & FeldmanHall, 2019; Lotz et al., 2011; van Doorn et al., 2018), thereby favoring more restorative forms of justice over punishment—although a few others have found the reverse (Adams & Mullen, 2015; Van Prooijen, 2009). More specifically, experiments largely based on economic game paradigms (whereby participants compensate or punish at a cost for themselves) have found that people compensated the victim instead of punishing the transgressor, or compensated to a greater extent than they punished, when both options were available and equally costly (Chavez & Bicchieri, 2013; Dhaliwal et al., 2021; Heffner & FeldmanHall, 2019; Lotz et al., 2011; van Doorn et al., 2018). When judging harm transgressions, people still preferred compensation for mild to moderate harms (Heffner & FeldmanHall, 2019). More broadly, studying how individuals expect justice to be done is critical for the future of justice institutions because better aligning the justice practices with citizens' expectations about justice decisions ultimately increases compliance and trust in the justice institutions (Carlsmith & Darley, 2008).

In this work, we employed a developmental approach to study how preferences for different forms of justice change with respect to cognitive development. The flourishing literature on children's third-party intervention has highlighted the intuitions children have about how justice ought to be done and the reasoning they may have about the consequences of a justice decision (Marshall &

McAuliffe, 2022). Recently, a few studies have suggested that children, from a young age, may favor alternatives to punishment like restitution (Liu et al., 2021; Riedl et al., 2015; Yang et al., 2021; Zhou & Wong, 2021) and view more positively victims who take their property back than victims who retaliate by punishing offenders (Liu et al., 2021). Nonetheless, other work suggests that when given the option to both punish and compensate, children prefer punishment over compensation or use both to the same extent (Arini et al., 2023; McAuliffe & Dunham, 2021; Miller & McCann, 1979). Yet, little is known about the factors that promote restorative justice (over punishment), and little is known about how young children specifically use compensation to address moral transgressions. We propose that at least three key situational features drive preferences for compensation over punishment.

These features pertain to the victims themselves. Because compensation consists of allocating resources to others (i.e., to victims of harm or injustice), characteristics of the recipients can influence how much they are compensated following mistreatment. Building on the idea that third-party punishment may be influenced by children's concerns for fairness and distributive justice (Arini et al., 2021; Bernhard et al., 2020; Lee & Warneken, 2020, 2022) because it often involves withdrawing resources from a perpetrator, this preregistered study focused on three main predictors of distributive justice and tested their impact on both compensation and punishment in children aged 3 to 7 years. More specifically, we manipulated (a) social power asymmetry and (b) resource asymmetry between the perpetrator and the victim as well as (c) the victim's moral character. Extensive research has indeed documented the fundamental rules children may rely on to allocate resources to others and how the acquisition of new rules with age conflicts with previous preferences. By 5 years of age, children's resource distribution reflects sophisticated principles such as merit (Baumard et al., 2012), power asymmetries (Charafeddine et al., 2016), starting opportunity (Elenbaas & Killen, 2016; McCrink et al., 2010), and the moral character of the recipients (Cooley & Killen, 2015; Kenward & Dahl, 2011). Therefore, we expected that children's decisions about the victim's compensation would be influenced by considerations of power, wealth, and moral character of the recipient.

In a series of three within-participant experiments, 3- to 7-year-olds were presented with an interaction between a perpetrator and a victim, ending with the perpetrator committing a property violation by stealing the victim's toy. This type of moral transgression is widely used in investigations of young children's third-party intervention (Liu et al., 2021; Riedl et al., 2015; Yang et al., 2021; Zhou & Wong, 2021) and was kept constant across experiments. Following each moral transgression, participants reported the wrongness of the perpetrator's behavior before enacting their decision about the punishment to attribute to the perpetrator and the compensation to attribute to the victim. These responses were neither beneficial nor costly to participants. Most participants completed all three experiments. Experiment 1 manipulated social dominance such that the victim had either lower power or higher power than the perpetrator. Experiment 2 manipulated the material resources of the perpetrator and victim so that the victim was either poorer or wealthier than the perpetrator. Experiment 3 manipulated the moral character of the victim so that the victim was perceived as either "good" or "bad" before the transgression. The rationale behind the different manipulations is further detailed in the corresponding experiments. Overall, we expected participants to show higher compensation and higher punishment when the victim was subordinate relative to dominant, was poor relative to rich, and showed good moral character relative to bad moral character.

General method

Participants

A total of 54 children (21 girls) aged 3 years 1 month to 6 years 11 months were tested in a quiet room at a university campus in France between Spring 2022 and Fall 2023. Families came from urban, suburban, or rural areas. Due to the national legislation restricting the collection of race and ethnicity data, this information is not available. See online [supplementary material](#) for other demographic indicators. All experimental procedures received approval from the local ethics committee and were in compliance with the Declaration of Helsinki. After children's legal representatives gave their written

informed consent, children completed a series of experiments and cognitive assessments. Most children completed all three experiments. A description of the final sample by experiment is available in the “Participants” section of each experiment. The entire session lasted 60 to 90 min, including breaks.

Materials

The task consisted of moral transgressions (property violations) presented through short video clips and followed by questions and two behavioral responses (compensation and punishment). Each video clip featured two animal puppets, the perpetrator and the victim, and always followed the same structure. The clip began with a focus on the victim playing with a toy. After a few seconds the perpetrator entered the scene, and this was followed by a short interaction with the victim. Next, the perpetrator stole the victim's toy behind the victim's back before exiting the scene. This scenario ensured that children would not infer that the victim (a) consented to having the property taken by others or (b) was a passive observer. The video clips ended with the victim crying. What varied between the video clips (and across experiments) was the interaction between the perpetrator and the victim before the theft, which evoked specific perceptions about the perpetrator and victim such as social dominance, wealth, and moral character. Each of the three within-participant experiments included two video clips (one for each condition). Thus, participants watched at most six video clips during the session. These can be viewed on the study material page using the link provided in the relevant experiment. In between the experiments, participants completed up to four cognitive tests assessing executive functions and math and reasoning skills. These assessments were part of a larger study and are described in the [supplementary material](#).

Procedure

Familiarization

In a familiarization phase, participants were presented with a puppet animal (one that was not presented in the main task) and were told that they would watch movies with animals on a TV screen and answer a few questions about the animals after each movie. Children were told that all animals had star stickers that they liked very much and that they would have the opportunity to take stickers from them or give them stickers after watching what the animals did in the movies. To illustrate the way children could respond after the movies, the experimenter pointed to the stickers next to the puppet and successively took stickers away from them and gave them stickers.

Testing

The task started after the familiarization phase. Immediately before watching each of the clips, children were presented with the two animal puppets that would appear in the relevant clip (see [Fig. 1A](#)). The perpetrator and victim (who were not identifiable as such at that time) stood next to each other in front of the children. A plate containing star stickers was placed next to each puppet. Children were asked which of the two animals was their favorite before they saw them interact. To this aim, the experimenter asked, “Which one do you like more, this one or that one?” Children were then invited to watch the video clip.

Immediately after the video clip, participants returned next to the puppets. Participants answered a comprehension question to test whether they were aware of the moral transgression and were able to identify the malevolent agent and the victim. An additional check specific to each experiment was included to ensure that children were aware of the puppet characteristics (i.e., social dominance, wealth, and moral character). If they failed these checks, the video clip was played one more time. They were then asked to report how wrong the perpetrator's behavior was on a 3-point Likert scale (*a little wrong*, *wrong*, or *very wrong*). Next, participants' punishment and compensation responses were assessed in the following way ([Fig. 1D](#)) Participants had the opportunity to punish the perpetrator by taking stickers away from the perpetrator and placing them in a “punishment box” so that the puppet animals could not access the stickers anymore. Similarly, children had the opportunity to compensate the victim by giving the victim stickers from the recipient handed by the experimenter. There-

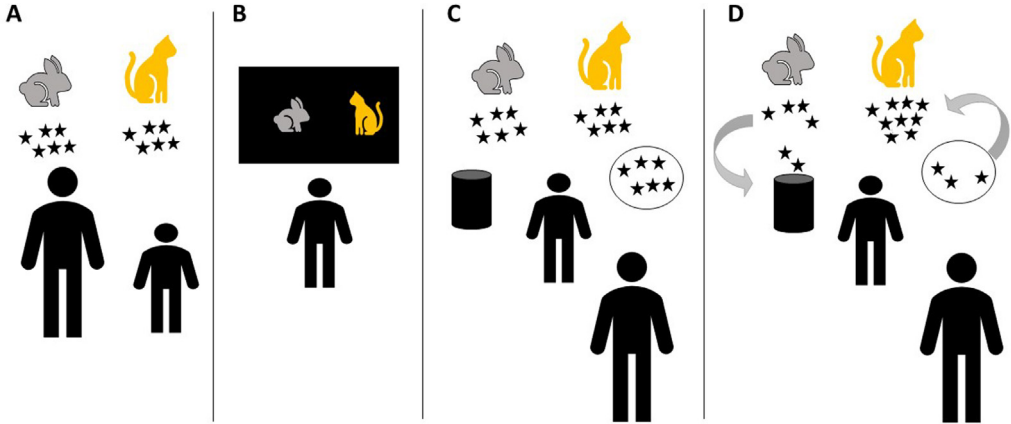


Fig. 1. Experimental procedure. After the children were introduced to the puppets (A), they watched the video clip featuring the moral transgression (B). Next, they came back to the puppets to answer comprehension checks and a moral wrongness question (C) before providing their behavioral response (D).

fore, compensation and punishment were neither costly nor beneficial for the children. All participants were tested by the same female experimenter.

Randomization

Experiment order and condition order were counterbalanced across participants. In addition, the behavioral responses (punishment and compensation) were provided in a fixed order for the same participant, but the order was counterbalanced between participants.

Sample size and power analysis

The initial recruitment target was set to at least 40 participants per experiment and as many as were allowed by time and funding. The minimum threshold of 40 participants was based on an a priori power analysis conducted with G*Power for a repeated-measures multivariate analysis of variance (MANOVA) on compensation and punishment. Because Experiments 1 to 3 used a similar design, the same parameters were entered in the a priori power analyses across experiments: alpha = .05, power = .80, number of groups = 2 (two experimental conditions), number of measurements = 2 (two trials per participant), and correlation among repeated measures = .40 (correlation between compensation and punishment based on an adult study using a similar design). This revealed that 40 participants were needed to observe a medium to large ($f = .25$) main effect of the experimental condition on compensation and punishment under these assumptions. In addition, an a posteriori power analysis was conducted with G*Power to assess the power associated with the main effect of the experimental condition, revealing an achieved power of 78% and 96% for the main effect of wealth (Experiment 2) and moral character (Experiment 3) on compensation, respectively.

Statistical analyses

For each experiment, we followed the preregistration plan that featured a main analysis assessing the effect of the independent variable “experimental condition” (social dominance, wealth, or moral character) on compensation and punishment. Because the data were not normally distributed, non-parametric tests were used in the main analysis (contrary to what was preregistered) as well as in exploratory analyses. In the main analysis, Wilcoxon signed-rank tests were used to determine the effect of the experimental manipulation on compensation and punishment. In exploratory analyses, the effects of age, gender, and control variables on compensation and punishment were investigated

using generalized linear mixed models for compensation and punishment with the experimental condition, age, gender, question order, condition order, and preference for the perpetrator or victim puppet as fixed factors and using a random intercept for the participant. Statistical significance of the fixed effects and their interactions was assessed using Satterthwaite's method, which is a conservative method recommended for designs including a limited number of items per condition and/or participants (Luke, 2017), as in the current experiments. All analyses were conducted in R (Version 4.1.2). Generalized linear mixed models were conducted using the "lmerTest" and "emmeans" packages. Additional analyses are included in Supplementary Results in the online [supplementary material](#).

Experiment 1: Social dominance

Social hierarchy is pervasive across animal species. The ability to identify the social relationships and status of individuals and groups proves to be critical for fitness and survival (Cosmides & Tooby, 1992; De Waal, 2007). In human societies, hierarchy can be signaled through distinct markers that generally pertain to control over resources, prestige, and power. Importantly, power asymmetries between individuals are recognized very early in development. Infants form expectations about social dominance based on the outcome of physical fights (Mascaro & Csibra, 2012) or control over resources (Bas & Sebastian-Galles, 2021), and the conception of dominance improves with age (Brey & Shutts, 2015; Charafeddine et al., 2015; Gülgöz & Gelman, 2017). For example, whereas children as young as 3 years are sensitive to dominance and subordination cues such as setting goals and asking for permission (Gülgöz & Gelman, 2017), other markers such as posture and norm setting are not recognized until 5 years of age (Brey & Shutts, 2015; Gülgöz & Gelman, 2017). Of great importance with respect to the current experiment, social dominance may also influence children's preferences for individuals and the amount of resources they choose to allocate to them (Charafeddine et al., 2016; Cheng et al., 2021). Building on this literature, we expected that social dominance also affects how much children are willing to take resources from a wrongdoer to punish the wrongdoer and how much they are willing to give resources to the victim of a moral transgression. The current experiment manipulated the relative dominance of the perpetrator and victim so that one of these characters was the "dominant" (or high-power individual) and the other one was the "subordinate" (or low-power individual). We predicted that the power asymmetry would influence participants' compensation and punishment responses. We expected harsher punishment for the dominant perpetrator relative to the subordinate perpetrator and higher compensation for the subordinate victim relative to the dominant victim. Additionally, because children's preferences for high- and low-power individuals may be dependent on age, we conducted follow-up analyses as preregistered to determine whether older participants would be overall harsher toward the dominant perpetrator relative to younger children and would compensate the subordinate victim more than younger children. We further explored how gender influenced punishment and compensation as a function of social dominance. The preregistration can be found at the following link: <https://osf.io/sr5fy>. The study material and data are available here: https://osf.io/cp7kz/?view_only=082c040d4b314cf59ff05ea5d0830083.

Method

Participants

A total of 44 children (18 girls) aged 3 years 1 month to 6 years 11 months ($M = 4.9$ years, $SD = 1.1$) were included in this experiment. Supplementary Table 1 shows the sample broken down by age and gender. An additional 10 children participated but were excluded due to lack of cooperation ($n = 5$), failure to answer the comprehension check ($n = 3$), or experimenter error ($n = 2$).

Procedure

Once both the perpetrator and victim were present on the scene, one of the two protagonists acted as the dominant individual (giving orders and setting goals) and the other acted as the subordinate individual (executing orders and asking for permission). As a specific comprehension check to test whether participants were aware of the social power asymmetry, the experimenter asked after the

video clip “Who was the boss?”. For younger participants, in case the child did not understand the question, the experimenter prompted “Who was giving orders?” and if needed further asked whether the subordinate puppet was doing what that puppet was told to do.

Results and discussion

Two-sided paired Wilcoxon signed-rank tests showed that social dominance did not significantly influence children’s responses (Fig. 2). Participants did not compensate the dominant victim ($M = 4.04, SD = 2.39$) significantly more or less than the subordinate victim ($M = 4.44, SD = 2.11$), $z = 108, p = .36, r = .08$, and did not punish the subordinate perpetrator ($M = 3.14, SD = 2.65$) significantly more or less than the dominant perpetrator ($M = 3.51, SD = 2.45$), $z = 130, p = .38, r = .07$.

However, exploratory analyses using mixed linear models with age, gender, and control variables (puppet preference, question order, and condition order) as additional factors revealed that decisions of compensation and punishment were to some extent dependent on age and gender (Fig. 3).

Compensation

The effect of social dominance was not significant ($\beta = -4.26, SE = 3.19, p = .19$). The effect of age was significant ($\beta = -1.29, SE = 0.51, p = .013$), indicating that older children compensated less than younger children. The interaction of age with social dominance was marginally significant ($\beta = 1.24, SE = 0.63, p = .058$). Compensation decreased with age for the dominant victim ($r = -.36, p = .017$), but compensation did not significantly decrease for the subordinate victim ($r = -.18, p = .22$), suggesting that older children tended to compensate dominant victims less than younger children. The effect of gender on compensation was not significant ($\beta = -3.73, SE = 3.35, p = .27$), but the interaction among age, social dominance, and gender was marginally significant ($\beta = -1.57, SE = 0.84, p = .068$). Girls compensated the dominant victim less with age ($r = -.54, p = .02$), but this was not the case for boys

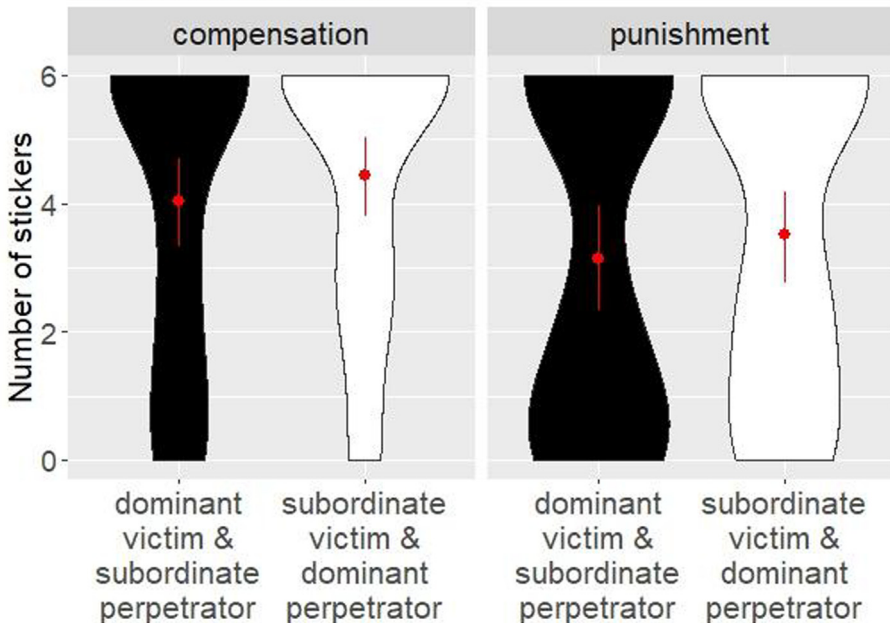


Fig. 2. Compensation and punishment in Experiment 1 as a function of the victim’s dominance status. The y-axis shows the number of stickers given to the victim (left) or withdrawn from the perpetrator (right). The red dots and vertical bars represent the means of distributions and their 95% confidence intervals, respectively. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

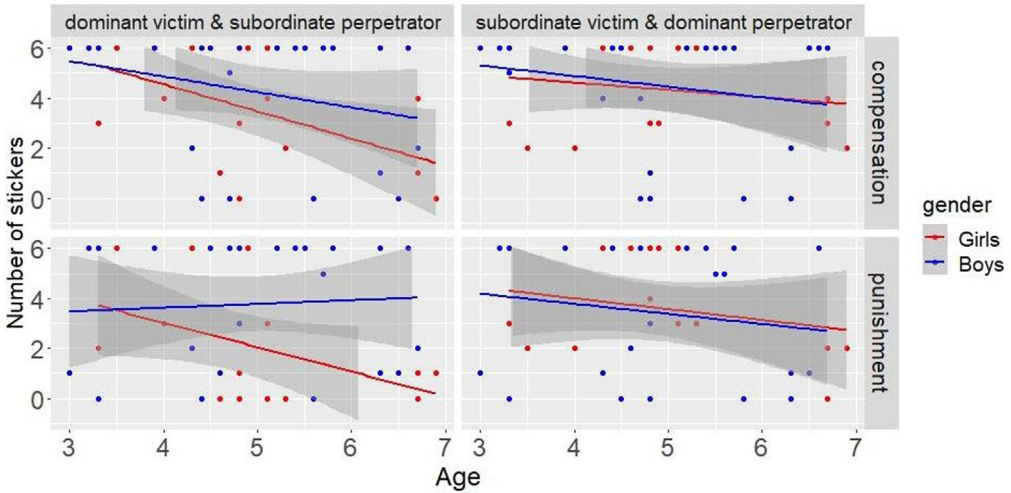


Fig. 3. Compensation and punishment as a function of age and gender in Experiment 1. The gray areas represent the 95% confidence intervals of the regression lines.

($r = -.27, p = .19$). In addition, social dominance interacted with the initial preference for the puppet ($\beta = -2.56, SE = 1.23, p = .041$), but no follow-up pairwise contrast was significant. No other fixed effects or interactions were statistically significant.

Punishment

The effect of social dominance was not significant ($\beta = -2.22, SE = 3.47, p = .52$). The effect of age was significant ($\beta = -1.19, SE = 0.59, p = .046$), indicating that older children punished less than younger children. The effect of gender was marginally significant ($\beta = -6.98, SE = 3.89, p = .077$), and the interaction between age and gender was significant ($\beta = -1.74, SE = 0.78, p = .029$), and age and gender interacted with social dominance ($\beta = -1.85, SE = 0.91, p = .048$). The correlation between punishment and age was marginally significant in girls ($r = -.32, p = .06$), but not in boys ($r = -.05, p = .72$). In particular, the correlation between punishment of the subordinate perpetrator and age was marginally significant in girls ($r = -.42, p = .08$), but not in boys ($r = .06, p = .76$). Punishment of the dominant perpetrator did not decrease significantly with age either in girls ($r = -.22, p = .36$) or in boys ($r = -.16, p = .43$). This suggests that with age, girls specifically may punish the subordinate perpetrator less harshly. Finally, initial preference for the puppet influenced punishment, which was harsher when participants preferred the victim ($\beta = 1.95, SE = 0.96, p = .044$). No other fixed effects or interactions were statistically significant.

Despite the role of power in shaping social interactions and children’s early awareness of dominance structures between individuals (Gülgöz & Gelman, 2017; Mascaro & Csibra, 2012) and groups (Heck et al., 2022), relatively few studies have so far investigated the effect of social dominance on young children’s third-party moral judgment or third-party intervention. In this experiment, the effect of social dominance at the group level was not significant. Although this null result may partly be attributed to a limitation in that the dominant individual may have been perceived as less “bossy” in one condition (dominant victim) as compared with the other, exploratory investigations of individual differences offered further insights. The effect of dominance on compensation and punishment may actually be dependent on age and gender; with age, children seemed to compensate a dominant victim less. This developmental shift echoes previous studies on the effect of power asymmetries on children’s distributive justice decisions (Charafeddine et al., 2016; Cheng et al., 2021; Zhang et al., 2021). Although 3-year-olds were found to allocate more resources to the dominant individual than they allocated to the subordinate one, this preference shifted around 5 years of age (Charafeddine

et al., 2016; Cheng et al., 2021). Here, the age-related change observed in children's compensation for the dominant victim is also in line with evidence of a developmental shift leading adults to support low-status individuals more than high-status individuals (Vandello et al., 2007). Dominant individuals are indeed viewed as less moral (Vandello et al., 2011) than individuals with lower power, and even children consider that dominant individuals are less likely to help others (Terrizzi et al., 2020). In addition, people may be more sensitive to the emotions expressed by a subordinate individual as compared with a dominant individual (Quesque et al., 2021). In keeping with this literature, older children might have been more sensitive to the distress manifested by the subordinate victim than to the distress of the dominant victim and consequently might have been more generous toward the subordinate victim. Interestingly, the age-related effect of dominance on children's interventions was further dependent on gender. With age, girls were less harsh toward the subordinate perpetrator—although this effect was only marginally significant—but punishment did not decrease with age in boys. A tentative explanation may be that girls are more likely than boys to identify power cues (Brey & Shutts, 2015), but the vast majority of boys and girls succeeded at the comprehension check. An alternative explanation for the age by gender interaction may then come from previous (albeit mixed) evidence on the relationship between gender and preferences for dominance, with girls becoming less interested in powerful individuals than boys (Charafeddine et al., 2021). This, however, may further be moderated by the gender of high-power and low-power individuals, a factor that was not manipulated in the current experiment. In brief, the results of Experiment 1 did not suggest that children's punishment of a perpetrator and compensation for a victim are influenced by social dominance. Although the current experiment did not have enough power to detect an interaction between age and gender, it lays the groundwork for future studies to test how third parties' age and gender moderate the effect of social dominance on punishment and compensation and to further investigate which facet of social power (respect-based or fear-based) drives such effect.

Experiment 2: Resource inequality

Economic inequalities are a main concern for individuals (Dawes et al., 2007; Starmans et al., 2017), and they are sometimes supported and justified and sometimes condemned. From a young age, children prove to be sensitive to asymmetry in material resources, although only in certain cases do they opt to correct them (Paulus & Essler, 2020). Although preschoolers generally prefer to divide resources equally between third parties (Olson & Spelke, 2008; Rakoczy et al., 2016), an unequal distribution can be viewed as fair if it resolves an outstanding starting inequality (Elenbaas & Killen, 2016; McCrink et al., 2010) or if it is based on merit (Baumard et al., 2012; Elenbaas, 2019) and as long as the allocated resource is not of vital need (Essler et al., 2020; Rizzo & Killen, 2020). Because the extant developmental literature on distributive justice suggests that children may have sophisticated reasons to reduce or maintain inequalities in different contexts (Paulus & Essler, 2020), here we examined how children would use compensation and punishment as a function of the resource asymmetry between the perpetrator and the victim involved in a moral transgression.

In this experiment, we manipulated the material resources owned by the perpetrator and victim before the moral transgression so that one of these characters was the "rich" individual and the other was the "poor" one. Resources consisted of stickers allocated in unequal amounts depending on the experimental condition. We predicted that participants would be sensitive to economic inequality in their decisions of compensation and punishment. More specifically, given that third-party interventions may be used as equalization tools (Arini et al., 2021; Lee & Warneken, 2022), we predicted that children's responses would favor those who have less resources compared with those who have more. That is, we expected children to use compensation and punishment as equalization tools when possible (poor victim and rich perpetrator condition) and to refrain from increasing the resource inequality between the perpetrator and victim (rich victim and poor perpetrator condition). Thus, we expected participants to be overall harsher toward a rich perpetrator (relative to a poor one) and to compensate a poor victim more than a rich victim. The preregistration can be found at the following link: <https://osf.io/gra2q>. The study material and data are available here: https://osf.io/fkza2/?view_only=52ab464c3e2e45bda21d450b180041a2.

Method

Participants

A total of 42 children (18 girls) aged 3 years 1 month to 6 years 11 months ($M = 4.7$ years, $SD = 1.1$) completed the experiment. Supplementary Table 2 shows the sample broken down by age and gender. An additional 10 children participated but were excluded due to lack of cooperation ($n = 7$), lack of time ($n = 2$), or partial completion ($n = 1$).

Procedure

The procedure was similar to Experiment 1 with the following exceptions. To materialize the resource asymmetry during the introduction phase and during the video clip, stickers were positioned in unequal amounts next to each puppet, with the perpetrator owning 6 stickers and the victim owning 12 in the rich victim and poor perpetrator condition and with the victim owning 6 stickers and the perpetrator owning 12 in the poor victim and rich perpetrator condition. As a specific comprehension check, the experimenter asked “Who has more stickers?” Contrary to Experiment 1, this comprehension check was administered before the video clip to limit the risk of biasing children’s reflection right before they compensated and punished.

Results and discussion

To analyze punishment and compensation responses in this experiment, the dependent variable was not the number of stickers taken/given but instead the proportion of stickers taken/given with respect to what the children could take/give. This was to equate dependent variables across conditions given that the perpetrator originally had twice as many stickers in the poor victim and rich perpetrator condition than in the rich victim and poor perpetrator condition. Two-sided Wilcoxon signed-rank tests on compensation revealed a significant effect of wealth, $z = 342$, $p = .025$, $r = .38$. Participants compensated the victim more when the victim was poor ($M = 4.59$, $SD = 2.16$) than when the victim was rich ($M = 3.43$, $SD = 2.45$). Punishment, however, was not significantly influenced by the perpetrator’s wealth, $z = 304$, $p = .68$, $r = .04$ (Fig. 4). Exploratory analyses did not reveal an effect of age or gender on compensation or punishment (see Supplementary Results S4).

In brief, wealth had a medium effect on participants’ response to the moral transgression, and this effect was limited to compensation for victims. Because some studies have suggested that children may use punishment (in the form of withdrawing resources) to reduce inequalities when punishment can be used as an equalization tool (Arini et al., 2021; Lee & Warneken, 2020, 2022), it could have been expected that children use a combination of compensation and punishment to reduce the inequality between the rich and poor individuals. However, children’s punishment and compensation combined generally increased the resource inequality between the perpetrator and the victim instead of reducing it and more so when the victim was rich (see Supplementary Results S5). This suggests that correcting for inequality at the start was not the main motivation behind third-party intervention in the current experiment. Interestingly, a few children counted the stickers for this experiment specifically (and some of them kept doing so until the end of the session). A few others expressed their astonishment at the large number of stickers in possession of the rich perpetrator, but this comment was not associated with a response toward more equity. These qualitative observations (see Supplementary Results S7) suggest that children were well-aware of the inequality, and the fact that they did not seek to reduce it by compensating or punishing was not due to the inequality not being salient enough. Consistent with the current results, other studies have actually found that punishment was less motivated by an aversion to inequity than by revenge (Deutschman et al., 2021).

Despite the inequality not being reduced, children did compensate the poor victim to a greater extent than the rich victim, whereas children of that age have sometimes been found to prefer and advantage richer individuals over poorer ones (Essler et al., 2020; Li et al., 2014). Thus, the current results complement the mixed evidence about children’s sometimes increasing and sometimes decreasing acceptance of inequality with age and how their intervention to correct it (or not) varies depending on a range of factors such as the children’s consideration of merit (Baumard et al., 2012; Elenbaas, 2019; Schmidt et al., 2016) or need (Wörle & Paulus, 2018), cognitive skills (Chernyak

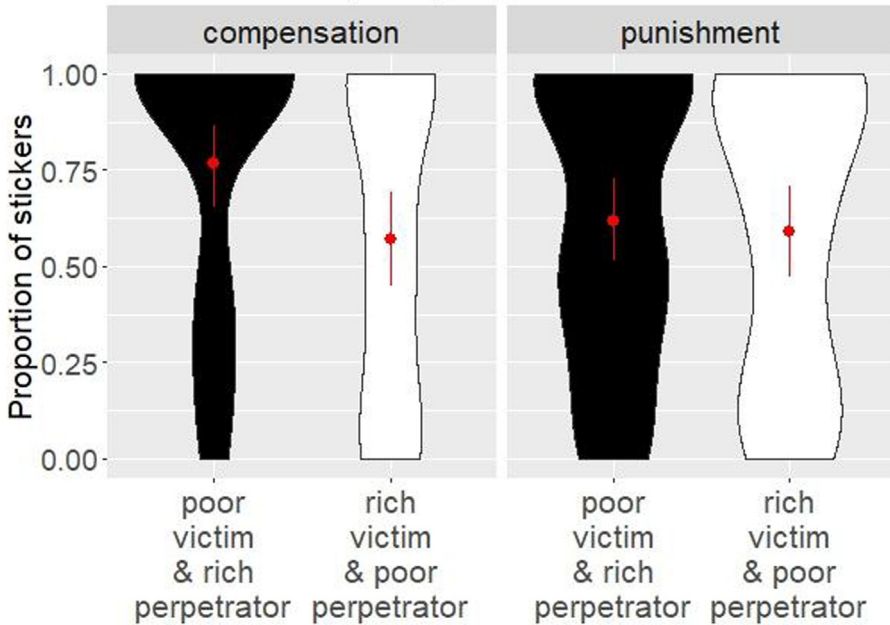


Fig. 4. Compensation and punishment in Experiment 2 as a function of the victim's wealth. The y-axis shows the ratio of stickers given to the victim (left) or withdrawn from the perpetrator (right) with respect to the maximum possible. The red dots and vertical bars represent the means of distributions and their 95% confidence intervals, respectively. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

et al., 2019), the value of what is being allocated (Blake & Rand, 2010), and cultural context (Blake et al., 2015).

Experiment 3: Moral character

People form impressions about others very quickly. Extant literature in person perception suggests that people first recognize character traits that are profitable to others (Peeters, 1992), such as being cheerful or trustworthy, and points to moral character as the main determinant of person perception (Brambilla et al., 2011; Goodwin et al., 2014; Wojciszke et al., 1998). The ability to identify first and foremost the intention of others indeed proves to be critical for avoiding threats and choosing reliable cooperation partners (Fiske et al., 2007). The sensitivity to others' good or bad intentions emerges during the first year of life (Steckler et al., 2018), and before 6 months of age infants show a preference for someone who helps others relative to someone who hinders others (Hamlin & Wynn, 2011). Differences in moral character later motivate children's allocation of resources to third parties (Cooley & Killen, 2015; Kenward & Dahl, 2011) such that a helper is allocated more resources than a hinderer. The moral character of a perpetrator may even influence how much adults (Schwartz et al., 2022) and children (Cameron et al., 2022) punish the perpetrator, and asymmetry in moral character between a perpetrator and a victim may further affect compensation for victims in adults (Schwartz et al., 2022). Thus, the current experiment aimed at filling a gap in the third-party intervention puzzle by manipulating the moral character of the victim so that the victim appeared as someone with either a good or bad moral character. Thus, unlike Experiments 1 and 2 that featured an asymmetry between the perpetrator and the victim, Experiment 3 did not manipulate the impression conveyed by the perpetrator but only manipulated the impression conveyed by the victim. We predicted that participants' compensation and punishment responses would be influenced by the victim's moral character. We expected participants to both compensate more and punish more when the victim was

identified as someone with a good moral character (the helper) relative to someone with a bad moral character (the hinderer). The preregistration can be found at the following link: <https://osf.io/dh3wk>. The study material and data are available here: https://osf.io/qkmy9/?view_only=f60ef805f3fa4aebb9117742c8243ac5.

Method

Participants

A total of 45 children (17 girls) aged 3 years 1 month to 6 years 11 months ($M = 4.8$ years, $SD = 1.1$) completed the experiment. Supplementary Table 3 shows the sample broken down by age and gender. An additional 9 children participated but were excluded due to lack of cooperation ($n = 6$) or partial completion ($n = 3$).

Procedure

The procedure was similar to Experiments 1 and 2 with the following exceptions. After the victim started to play with the toy, and before the perpetrator entered the scene, another puppet (mouse) entered the scene asking for help. The victim either helped the mouse by grabbing an object and giving it to the mouse (good moral character condition) or hindered the mouse by placing the object out of the mouse's reach (bad moral character condition). During this helping or hindering action, the perpetrator entered the scene and stole the victim's toy. As a specific comprehension check immediately following the video clip, the experimenter asked the children whether the victim was nice or mean to the mouse.

Results and discussion

Two-sided Wilcoxon signed-rank tests revealed that moral character influenced compensation, $z = 35$, $p < .001$, $r = .54$, which was higher for a good victim ($M = 4.75$, $SD = 2.0$) than for a bad victim ($M = 3.02$, $SD = 2.55$) (Fig. 5). However, the victim's moral character did not influence punishment of the perpetrator, $z = 148$, $p = .25$, $r = .08$, which was not significantly higher or lower when the victim had a bad moral character ($M = 3.66$, $SD = 2.45$) as compared with a good moral character ($M = 3.93$, $SD = 2.42$). Exploratory analyses did not reveal a significant effect of age and gender on compensation or punishment (see Supplementary Results S4), but they showed that participants who did not have a preference for the perpetrator or victim before the moral transgression compensated the good victim more than the bad victim, whereas this was not the case for other participants (see Supplementary Results S4).

The fact that young children's response to a moral transgression was influenced by the valence of the victim's previous action complements recent studies about the effect of moral character on third-party moral judgment. First, the current findings mirror recent work showing that children aged 6 to 11 years were harsher toward a perpetrator with a bad moral character and more lenient toward a perpetrator with a good moral character for the same moral transgression (Cameron et al., 2022). Here, even younger children took moral character information about a victim into account to determine how much to compensate the victim, but not how much to punish the perpetrator. Importantly, the effect of the victim's moral character on children's interventions did not increase with age. This is not in line with a previous study showing that a victim who previously performed a morally good action was preferred to the perpetrator by 5-year-olds but not by 3-year-olds (Li & Tomasello, 2018). Second, the current finding echoes recent work in adults showing that compensation for victims was higher when the victim was viewed as highly moral and the perpetrator was viewed as low in morality (Schwartz et al., 2022). Although the current experiment did not manipulate the moral character of each protagonist simultaneously and thus is silent about how the moral character of the perpetrator might influence compensation, it complements the literature to suggest that children's interventions (i.e., compensation and punishment) may be selectively influenced by the moral character of each protagonist. In addition, although children's preference for either puppet before the transgression may have mitigated the effect of moral character, this effect was observed in children who did not have a preference for either puppet. On a more qualitative note, children sometimes labeled

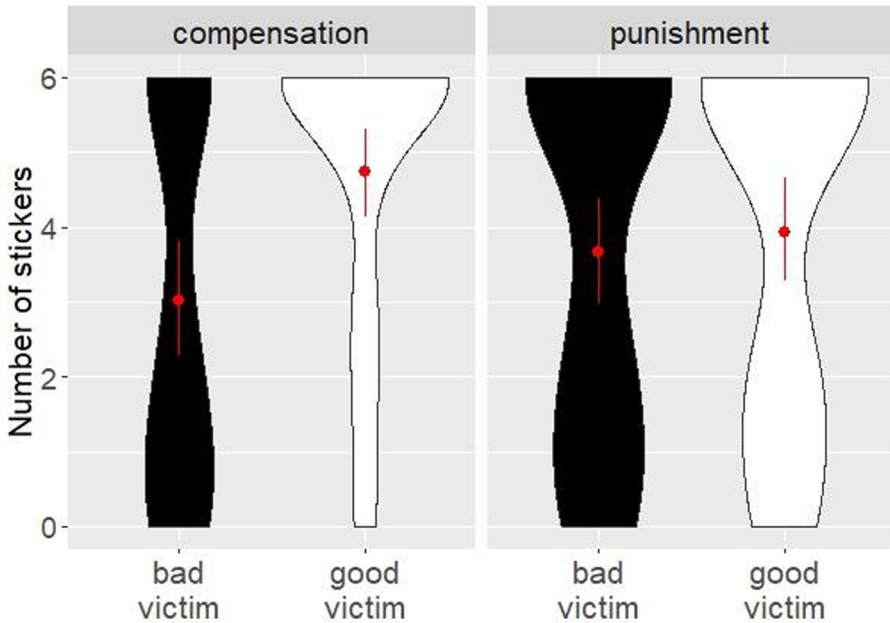


Fig. 5. Compensation and punishment in Experiment 3 as a function of the victim’s moral character. The y-axis shows the number of stickers given to the victim (left) or withdrawn from the perpetrator (right). The red dots and vertical bars represent the means of distributions and their 95% confidence intervals, respectively. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

both the perpetrator and victim as “bad” and judged that both should be punished (see Supplementary Results S7). Other participants labeled the hindering victim as “nice,” and this was often accompanied by maximum compensation to the hindering victim. This rather positive evaluation of the hindering victim can be interpreted in light of the “virtuous victim effect,” with evidence that the victim status conveys an impression of good character (Jordan & Kouchaki, 2021). In this experiment, the victimhood associated with the property violation may have overshadowed any negative impression of the victim hindering another agent, thereby resulting in overall positive evaluation of the hindering victim for some participants and consequently high compensation.

General discussion

The current study investigated young children’s compensation for victims of a moral transgression by testing different predictors known to influence how children allocate resources to others. Building on work showing that children’s punishment of a transgressor is influenced by distributive justice concerns (Lee & Warnken, 2020, 2022), this series of experiments tested whether the principles governing distributive justice are accounted for when 3- to 7-year-olds need to decide, as third-party judges, how much to compensate a victim following a moral transgression. Three experiments manipulated social dominance, wealth, and moral character of a victim who endured a property violation. The results show that the victim’s moral character and the victim’s wealth influence how much children compensate the victim and suggest that the effect of social dominance on compensation and punishment may depend on age and gender. Taken together, these findings extend the literature on children’s use of alternatives to punishment and show that the same concerns that shape distributive justice decisions are reflected in decisions of compensation.

This study was motivated by recent work suggesting that individuals, from a very young age, may favor more restorative forms of justice over punishment (Riedl et al., 2015; Yang et al., 2021; Zhou &

Wong, 2021). However, restorative justice in these previous studies consisted of giving back to the victim the stolen property. Although restitution is part of restorative justice, this option is not always available and is not the only alternative to punishment. In the current study, the resources used to compensate the victim were different from the one stolen, so that restoration of the initial situation was not possible. Contrary to several studies claiming that children from different cultures prefer alternatives to punishment for property damage (Liu et al., 2021; Riedl et al., 2015; Yang et al., 2021; Zhou & Wong, 2021), the current study shows that children's third-party interventions were generally concerned with both imposing a cost to the transgressor and doing something in favor of the victim. In brief, the current study converges with others showing that when children are given the opportunity to punish and compensate, they often do both (Arini et al., 2023; McAuliffe & Dunham, 2021; Miller & McCann, 1979).

Interestingly, not only did children use both compensation and punishment, but they often compensated and punished to the same extent, as observed in a previous child study (Miller & McCann, 1979). Participants were even nearing maximum compensation and maximum punishment quite often in the current experiments, although their response could have been lower had compensation and punishment been costly to them. Other studies in adults, however, have found that punishment reduces compensation (Adams & Mullen, 2015) or that the balance between compensation and punishment depended on moral wrongness (Heffner & FeldmanHall, 2019), leaning toward more punishment than compensation for more severe offenses. In the current study, although the same moral transgression (stealing a toy) was committed, children showed some variation in their rating of moral wrongness, but moral wrongness was not consistently correlated with compensation or punishment and did not mediate the effect of social dominance, wealth, or moral character on children's responses (see Supplementary Results S3 and S6). In addition, the order in which children gave their response did not influence compensation in Experiments 1 and 3, indicating that compensation did not merely mirror punishment.

What then motivates compensation in children? Did the motivations to punish overlap with the motivations to compensate? Past research indicates that children show a rich repertoire of motivations for punishing a transgressor, from deterrence to protection of the community around a transgressor to mere retribution (Marshall & McAuliffe, 2022). They also value those who enforce punishment (Vaish et al., 2016) and further expect harsh punishment like a prison sentence to somehow repair the perpetrator by making the perpetrator more moral (Dunlea & Heiphetz, 2021). By 8 years of age, children are aware of the advantages conferred by a system of punishment (Bregant et al., 2016). By contrast, the functions children attribute to compensation (although they may naturally be less varied than the functions of punishment) might not be obvious. Although the current study was not designed to test different predictions about children's reasons for punishing or compensating, it is interesting to note that older children who were able and willing to justify their decision did not provide a reason for compensation as clearly as they did for punishment, and very few mentioned the victim's sadness. Importantly, even studies with older children and adults do not point to consistent explanations for compensation. Some revealed that children may find compensation more rewarding than punishment (Arini et al., 2023), and others showed that reputational concerns of third parties drive a preference for compensation over punishment in adults (Dhaliwal et al., 2021) and even children (Vaish et al., 2016). Strikingly, concern for the victim might not be the primary drive for compensation unless third parties explicitly focus on the victim's suffering (Gummerum et al., 2016; Lotz et al., 2011). One explanation for this may be that people think punishment may be satisfactory for the victim (Gollwitzer et al., 2011), or speculatively it may be cognitively demanding to share the victim's perspective. Future studies may better identify the cognitive moderators that may shape adults' and children's reasoning about different justice responses for victims of moral transgressions. Finally, an additional challenge with reasoning about victims' compensation may also come from the nature of compensation itself and its potential to repair harm.

From this perspective, a limitation of the current study is the source of victims' compensation. Compensation consisted of a resource transfer from a third party to the victim (at no cost to the participants). Although this choice was motivated by the attempt to better separate punishment from compensation and study them separately, the paradigm thus deviated from the definition of compensation in the law. In legal terms, compensation is a direct transfer from the perpetrator to the victim,

which can either be granted by agreed-on rules or follow a justice decision. In addition, compensation must be requested by the victim, contrary to punishment, and is meant to cancel out the obligation of one party toward the other. Although the current study complements the literature on third-party intervention by young children, this limitation of the experimental design should be acknowledged.

Finally, this study may be integrated in a broader research effort in the cognitive sciences to improve our understanding of people's motivations for different forms of justice and their psychological determinants. It naturally resonates with recent work on children's and adults' understanding of restorative justice. The criticism faced by the traditional retributive justice system has led to a growing interest in restorative justice, which is more focused on repairing harm by simultaneously considering the perpetrator, the victim, and the community and directly integrates the victim in the justice process (Van Ness & Strong, 2015). Restorative justice has already been implemented in some jurisdictions in different countries, and recent assessments document the effect (or lack thereof) of restorative practices in the criminal justice system as well as at different levels of society (Nascimento et al., 2023; Weber & Vereenooghe, 2020). Although restorative justice and retributive justice have commonalities, such as the presence of an independent third party who will conduct the procedure and a decision to be made about how the perpetrator should be treated, restorative justice emphasizes punishment less (Daly, 2001; Van Ness & Strong, 2015). This said, considering alternatives to punishment is not the main difference between retributive justice and restorative justice (Daly, 2001), and restorative justice is broader than deciding about the resources to withdraw from a transgressor and to give to a victim. In that respect, the current study—as well as most studies so far about children's use of alternatives to punishment—provides a limited understanding about how children may conceive restorative justice. A singular feature of restorative justice actually involves confronting the transgressor with the victim and other members of their community through conferencing (Braithwaite, 2002; Daly, 2001; Lodi et al., 2021). The outputs from these interactions may greatly vary between contexts, for instance, depending on the relationship between the transgressor and the victim or depending on situational variables tested in the current study. Psychology studies are hence of greatest importance in understanding how contextual elements, such as the transgressor's and victim's attitudes, beliefs, status, and relationship with one another, as well as the type of offense, are likely to affect the restorative justice process. Future research will prove to be crucial to first identify what modulates the understanding and acceptance of restorative practices more broadly and when they can be beneficial before considering their large-scale implementation.

CRedit authorship contribution statement

Flora Schwartz: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.
Nadia Chernyak: Writing – review & editing, Methodology.

Data availability

The research data associated with each experiment is available on OSF and linked in the main text.

Acknowledgments

Many thanks go to all the participants and families, to Anastasia Passemar for her help with shooting the movies, and to Julien Tardieu, Bastien Trémolière, and Pierre-Vincent Paubel for helping with the audio recordings. This research was supported by the Mustela Foundation.

Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jecp.2024.106045>.

References

- Adams, G. S., & Mullen, E. (2015). Punishing the perpetrator decreases compensation for victims. *Social Psychological and Personality Science*, 6(1), 31–38. <https://doi.org/10.1177/1948550614542346>.
- Arini, R. L., Mahmood, M., Bocarejo Aljure, J., Ingram, G. P. D., Wiggs, L., & Kenward, B. (2023). Children endorse deterrence motivations for third-party punishment but derive higher enjoyment from compensating victims. *Journal of Experimental Child Psychology*, 230, 105630. <https://doi.org/10.1016/j.jecp.2023.105630>.
- Arini, R. L., Wiggs, L., & Kenward, B. (2021). Moral duty and equalization concerns motivate children's third-party punishment. *Developmental Psychology*, 57(8), 1325–1341. <https://doi.org/10.1037/dev0001191>.
- Ashworth, A. (1986). Punishment and compensation: Victims, offenders, and the state. *Oxford Journal of Legal Studies*, 6(1), 86–122. <https://doi.org/10.1093/ojls/6.1.86>.
- Bas, J., & Sebastian-Galles, N. (2021). Infants' representation of social hierarchies in absence of physical dominance. *PLoS One*, 16(2), e245450. <https://doi.org/10.1371/journal.pone.0245450>.
- Baumard, N. (2010). Has punishment played a role in the evolution of cooperation? A critical review. *Mind & Society*, 9(2), 171–192. <https://doi.org/10.1007/s11299-010-0079-9>.
- Baumard, N. (2011). Punishment is not a group adaptation: Humans punish to restore fairness rather than to support group cooperation. *Mind & Society*, 10(1), 1–26. <https://doi.org/10.1007/s11299-010-0080-3>.
- Baumard, N., Mascaro, O., & Chevallier, C. (2012). Preschoolers are able to take merit into account when distributing goods. *Developmental Psychology*, 48(2), 492–498. <https://doi.org/10.1037/a0026598>.
- Bernhard, R., Martin, J., & Warneken, F. (2020). *Why do children punish? Fair outcomes matter more than intent in children's second- and third-party punishment* [preprint]. PsyArXiv. <https://doi.org/10.31234/osf.io/hdyfv>.
- Blake, P. R., McAuliffe, K., Corbit, J., Callaghan, T. C., Barry, O., Bowie, A., Kleutsch, L., Kramer, K. L., Ross, E., Vongsachang, H., Wrangham, R., & Warneken, F. (2015). The ontogeny of fairness in seven societies. *Nature*, 528(7581), 258–261. <https://doi.org/10.1038/nature15703>.
- Blake, P. R., & Rand, D. G. (2010). Currency value moderates equity preference among young children. *Evolution and Human Behavior*, 31(3), 210–218. <https://doi.org/10.1016/j.evolhumbehav.2009.06.012>.
- Boyd, R., Gintis, H., Bowles, S., & Richerson, P. J. (2003). The evolution of altruistic punishment. *Proceedings of the National Academy of Sciences of the United States of America*, 100(6), 3531–3535. <https://doi.org/10.1073/pnas.0630443100>.
- Braithwaite, J. (2002). Setting standards for restorative justice. *British Journal of Criminology*, 42(3), 563–577. <https://doi.org/10.1093/bjc/42.3.563>.
- Brambilla, M., Rusconi, P., Sacchi, S., & Cherubini, P. (2011). Looking for honesty: The primary role of morality (vs. sociability and competence) in information gathering. *European Journal of Social Psychology*, 41(2), 135–143. <https://doi.org/10.1002/ejsp.744>.
- Bregant, J., Shaw, A., & Kinzler, K. D. (2016). Intuitive jurisprudence: Early reasoning about the functions of punishment. *Journal of Empirical Legal Studies*, 13(4), 693–717. <https://doi.org/10.1111/jels.12130>.
- Brey, E., & Shutts, K. (2015). Children use nonverbal cues to make inferences about social power. *Child Development*, 86(1), 276–286. <https://doi.org/10.1111/cdev.12334>.
- Cameron, S., Wilks, M., Redshaw, J., & Nielsen, M. (2022). The effect of moral character on children's judgements of transgressions. *Cognitive Development*, 63. <https://doi.org/10.1016/j.cogdev.2022.101221> 101221.
- Carlsmith, K. M., & Darley, J. M. (2008). Psychological aspects of retributive justice. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 40, pp. 193–236). Academic Press. [https://doi.org/10.1016/S0065-2601\(07\)00004-4](https://doi.org/10.1016/S0065-2601(07)00004-4).
- Carlsmith, K. M., Darley, J. M., & Robinson, P. H. (2002). Why do we punish? Deterrence and just deserts as motives for punishment. *Journal of Personality and Social Psychology*, 83(2), 284–299. <https://doi.org/10.1037/0022-3514.83.2.284>.
- Charafeddine, R., Mercier, H., Clément, F., Kaufmann, L., Berchtold, A., Reboul, A., & Van der Henst, J.-B. (2015). How preschoolers use cues of dominance to make sense of their social environment. *Journal of Cognition and Development*, 16(4), 587–607. <https://doi.org/10.1080/15248372.2014.926269>.
- Charafeddine, R., Mercier, H., Clément, F., Kaufmann, L., Reboul, A., & Van der Henst, J.-B. (2016). Children's allocation of resources in social dominance situations. *Developmental Psychology*, 52(11), 1843–1857. <https://doi.org/10.1037/dev0000164>.
- Charafeddine, R., Triniol, B., Ogier, M., Foncelle, A., Epinat, J., & Van der Henst, J.-B. (2021). Do preschoolers align their preferences with those of a powerful individual? *Frontiers in Education*, 5, 607096. <https://doi.org/10.3389/educ.2020.607096>.
- Chavez, A. K., & Bicchieri, C. (2013). Third-party sanctioning and compensation behavior: Findings from the ultimatum game. *Journal of Economic Psychology*, 39, 268–277. <https://doi.org/10.1016/j.joep.2013.09.004>.
- Cheng, N., Wan, Y., An, J., Gummerum, M., & Zhu, L. (2021). Power grabbed or granted: Children's allocation of resources in social power situations. *Journal of Experimental Child Psychology*, 210, 105192. <https://doi.org/10.1016/j.jecp.2021.105192>.
- Chernyak, N., Harris, P. L., & Cordes, S. (2019). Explaining early moral hypocrisy: Numerical cognition promotes equal sharing behavior in preschool-aged children. *Developmental Science*, 22(1), e12695. <https://doi.org/10.1111/desc.12695>.
- Cooley, S., & Killen, M. (2015). Children's evaluations of resource allocation in the context of group norms. *Developmental Psychology*, 51(4), 554–563. <https://doi.org/10.1037/a0038796>.
- Cosmides, L., & Tooby, J. (1992). Cognitive adaptations for social exchange. In J. H. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 163–228). Oxford University Press.
- Daly, K. (2001). Revisiting the relationship between retributive and restorative justice. In H. Strang & J. Braithwaite (Eds.), *Restorative justice* (pp. 33–54). Routledge.
- Darley, J. M., & Pittman, T. S. (2003). The psychology of compensatory and retributive justice. *Personality and Social Psychology Review*, 7(4), 324–336. https://doi.org/10.1207/S15327957PSPR0704_05.
- Dawes, C. T., Fowler, J. H., Johnson, T., McElreath, R., & Smirnov, O. (2007). Egalitarian motives in humans. *Nature*, 446(7137), 794–796. <https://doi.org/10.1038/nature05651>.
- De Waal, F. (2007). *Chimpanzee politics: Power and sex among apes*. Johns Hopkins University Press.

- Deutchman, P., Bračić, M., Raihani, N., & McAuliffe, K. (2021). Punishment is strongly motivated by revenge and weakly motivated by inequity aversion. *Evolution and Human Behavior*, 42(1), 12–20. <https://doi.org/10.1016/j.evolhumbehav.2020.06.001>.
- Dhaliwal, N. A., Patil, I., & Cushman, F. (2021). Reputational and cooperative benefits of third-party compensation. *Organizational Behavior and Human Decision Processes*, 164, 27–51. <https://doi.org/10.1016/j.obhdp.2021.01.003>.
- Dunlea, J. P., & Heiphetz, L. (2021). Children's and adults' views of punishment as a path to redemption. *Child Development*, 92(4), e398–e415. <https://doi.org/10.1111/cdev.13475>.
- Elenbaas, L. (2019). Against unfairness: Young children's judgments about merit, equity, and equality. *Journal of Experimental Child Psychology*, 186, 73–82. <https://doi.org/10.1016/j.jecp.2019.05.009>.
- Elenbaas, L., & Killen, M. (2016). Children rectify inequalities for disadvantaged groups. *Developmental Psychology*, 52, 1318–1329. <https://doi.org/10.1037/dev0000154>.
- Essler, S., Lepach, A. C., Petermann, F., & Paulus, M. (2020). Equality, equity, or inequality duplication? How preschoolers distribute necessary and luxury resources between rich and poor others. *Social Development*, 29(1), 110–125. <https://doi.org/10.1111/sode.12390>.
- Fehr, E., & Gächter, S. (2002). Altruistic punishment in humans. *Nature*, 415(6868), 137–140. <https://doi.org/10.1038/415137a>.
- Fiske, S. T., Cuddy, A. J. C., & Glick, P. (2007). Universal dimensions of social cognition: Warmth and competence. *Trends in Cognitive Sciences*, 11(2), 77–83. <https://doi.org/10.1016/j.tics.2006.11.005>.
- Fitouchi, L., & Singh, M. (2023). Punitive justice serves to restore reciprocal cooperation in three small-scale societies. *Evolution and Human Behavior*, 44(5), 502–514. <https://doi.org/10.1016/j.evolhumbehav.2023.03.001>.
- Gächter, S., Renner, E., & Sefton, M. (2008). The long-run benefits of punishment. *Science*, 322(5907). <https://doi.org/10.1126/science.1164744> 1510.
- Gollwitzer, M., Meder, M., & Schmitt, M. (2011). What gives victims satisfaction when they seek revenge? *European Journal of Social Psychology*, 41(3), 364–374. <https://doi.org/10.1002/ejsp.782>.
- Goodwin, G. P., Piazza, J., & Rozin, P. (2014). Moral character predominates in person perception and evaluation. *Journal of Personality and Social Psychology*, 106(1), 148–168. <https://doi.org/10.1037/a0034726>.
- Gülgöz, S., & Gelman, S. A. (2017). Who's the boss? Concepts of social power across development. *Child Development*, 88(3), 946–963. <https://doi.org/10.1111/cdev.12643>.
- Gummerum, M., Van Dillen, L. F., Van Dijk, E., & López-Pérez, B. (2016). Costly third-party interventions: The role of incidental anger and attention focus in punishment of the perpetrator and compensation of the victim. *Journal of Experimental Social Psychology*, 65, 94–104. <https://doi.org/10.1016/j.jesp.2016.04.004>.
- Gürerk, Ö., Irlenbusch, B., & Rockenbach, B. (2006). The competitive advantage of sanctioning institutions. *Science*, 312(5770), 108–111. <https://doi.org/10.1126/science.1123633>.
- Hamlin, J. K., & Wynn, K. (2011). Young infants prefer prosocial to antisocial others. *Cognitive Development*, 26(1), 30–39. <https://doi.org/10.1016/j.cogdev.2010.09.001>.
- Heck, I. A., Shutts, K., & Kinzler, K. D. (2022). Children's thinking about group-based social hierarchies. *Trends in Cognitive Sciences*, 26(7), 593–606. <https://doi.org/10.1016/j.tics.2022.04.004>.
- Heffner, J., & FeldmanHall, O. (2019). Why we don't always punish: Preferences for non-punitive responses to moral violations. *Scientific Reports*, 9(1). <https://doi.org/10.1038/s41598-019-49680-2> 13219.
- Henrich, J., & Boyd, R. (2001). Why people punish defectors. *Journal of Theoretical Biology*, 208(1), 79–89. <https://doi.org/10.1006/jtbi.2000.2202>.
- Henrich, J., Ensminger, J., McElreath, R., Barr, A., Barrett, C., Bolyanatz, A., Cardenas, J. C., Gurven, M., Gwako, E., Henrich, N., Lesorogol, C., Marlowe, F., Tracer, D., & Ziker, J. (2010). Markets, religion, community size, and the evolution of fairness and punishment. *Science*, 327(5972), 1480–1484. <https://doi.org/10.1126/science.1182238>.
- Henrich, J., McElreath, R., Barr, A., Ensminger, J., Barrett, C., Bolyanatz, A., Cardenas, J. C., Gurven, M., Gwako, E., Henrich, N., Lesorogol, C., Marlowe, F., Tracer, D., & Ziker, J. (2006). Costly punishment across human societies. *Science*, 312(5781), 1767–1770. <https://doi.org/10.1126/science.1127333>.
- House, B. R., Kanngiesser, P., Barrett, H. C., Yilmaz, S., Smith, A. M., Sebastian-Enesco, C., Erut, A., & Silk, J. B. (2020). Social norms and cultural diversity in the development of third-party punishment. *Proceedings of the Royal Society B: Biological Sciences*, 287(1925), 20192794. <https://doi.org/10.1098/rspb.2019.2794>.
- Jordan, J. J., & Kouchaki, M. (2021). Virtuous victims. *Science Advances*, 7(42). <https://doi.org/10.1126/sciadv.abg5902> eabg5902.
- Kanakogi, Y., Miyazaki, M., Takahashi, H., Yamamoto, H., Kobayashi, T., & Hiraki, K. (2022). Third-party punishment by preverbal infants. *Nature Human Behaviour*, 6(9), 1234–1242. <https://doi.org/10.1038/s41562-022-01354-2>.
- Keller, L. B., Oswald, M. E., Stucki, I., & Gollwitzer, M. (2010). A closer look at an eye for an eye: Laypersons' punishment decisions are primarily driven by retributive motives. *Social Justice Research*, 23(2–3), 99–116. <https://doi.org/10.1007/s11211-010-0113-4>.
- Kenward, B., & Dahl, M. (2011). Preschoolers distribute scarce resources according to the moral valence of recipients' previous actions. *Developmental Psychology*, 47(4), 1054–1064. <https://doi.org/10.1037/a0023869>.
- LaFave, W. (2000). *Criminal law* (3rd ed.). West Academic.
- Lee, Y., & Warneken, F. (2020). Children's evaluations of third-party responses to unfairness: Children prefer helping over punishment. *Cognition*, 205. <https://doi.org/10.1016/j.cognition.2020.104374> 104374.
- Lee, Y., & Warneken, F. (2022). Does third-party punishment in children aim at equality? *Developmental Psychology*, 58(5), 866–873. <https://doi.org/10.1037/dev0001331>.
- Li, J., & Tomasello, M. (2018). The development of intention-based sociomoral judgment and distribution behavior from a third-party stance. *Journal of Experimental Child Psychology*, 167, 78–92. <https://doi.org/10.1016/j.jecp.2017.09.021>.
- Li, V., Spitzer, B., & Olson, K. R. (2014). Preschoolers reduce inequality while favoring individuals with more. *Child Development*, 85(3), 1123–1133. <https://doi.org/10.1111/cdev.12198>.
- Liu, X., Yang, X., & Wu, Z. (2021). To punish or to restore: How children evaluate victims' responses to immorality. *Frontiers in Psychology*, 12, 696160. <https://doi.org/10.3389/fpsyg.2021.696160>.

- Lodi, E., Perrella, L., Lepri, G. L., Scarpa, M. L., & Patrizi, P. (2021). Use of restorative justice and restorative practices at school: A systematic literature review. *International Journal of Environmental Research and Public Health*, 19(1), 96. <https://doi.org/10.3390/ijerph19010096>.
- Lotz, S., Okimoto, T. G., Schlösser, T., & Fetchenhauer, D. (2011). Punitive versus compensatory reactions to injustice: Emotional antecedents to third-party interventions. *Journal of Experimental Social Psychology*, 47(2), 477–480. <https://doi.org/10.1016/j.jesp.2010.10.004>.
- Luke, S. G. (2017). Evaluating significance in linear mixed-effects models in R. *Behavior Research Methods*, 49(4), 1494–1502. <https://doi.org/10.3758/s13428-016-0809-y>.
- Marlowe, F. W. (2009). Hadza cooperation: Second-party punishment, yes; third-party punishment, no. *Human Nature*, 20(4), 417–430. <https://doi.org/10.1007/s12110-009-9072-6>.
- Marshall, J., & McAuliffe, K. (2022). Children as assessors and agents of third-party punishment. *Nature Reviews Psychology*, 1(6), 334–344. <https://doi.org/10.1038/s44159-022-00046-y>.
- Mascaro, O., & Csibra, G. (2012). Representation of stable social dominance relations by human infants. *Proceedings of the National Academy of Sciences of the United States of America*, 109(18), 6862–6867. <https://doi.org/10.1073/pnas.1113194109>.
- McAuliffe, K., & Dunham, Y. (2021). Children favor punishment over restoration. *Developmental Science*, 24(5), e13093. <https://doi.org/10.1111/desc.13093>.
- McCrink, K., Bloom, P., & Santos, L. R. (2010). Children's and adults' judgments of equitable resource distributions: Judgments of equitable resource distributions. *Developmental Science*, 13(1), 37–45. <https://doi.org/10.1111/j.1467-7687.2009.00859.x>.
- Miller, D., & McCann, D. (1979). Children's reactions to the perpetrators and victims of injustices. *Child Development*, 50(3), 861–868. <https://doi.org/10.2307/1128955>.
- Nascimento, A. M., Andrade, J., & De Castro Rodrigues, A. (2023). The psychological impact of restorative justice practices on victims of crimes—A systematic review. *Trauma, Violence, & Abuse*, 24(3), 1929–1947. <https://doi.org/10.1177/15248380221082085>.
- Olson, K. R., & Spelke, E. S. (2008). Foundations of cooperation in young children. *Cognition*, 108(1), 222–231. <https://doi.org/10.1016/j.cognition.2007.12.003>.
- Paulus, M., & Essler, S. (2020). Why do preschoolers perpetuate inequalities? Theoretical perspectives on inequity preferences in the face of emerging concerns for equality. *Developmental Review*, 58, 100933. <https://doi.org/10.1016/j.dr.2020.100933>.
- Peeters, G. (1992). Evaluative meanings of adjectives in vitro and in context: Some theoretical implications and practical consequences of positive–negative asymmetry and behavioral-adaptive concepts of evaluation. *Psychologica Belgica*, 32(2), 211–231. <https://doi.org/10.5334/pb.833>.
- Petersen, M. B., Sell, A., Tooby, J., & Cosmides, L. (2012). To punish or repair? Evolutionary psychology and lay intuitions about modern criminal justice. *Evolution and Human Behavior*, 33(6), 682–695. <https://doi.org/10.1016/j.evolhumbehav.2012.05.003>.
- Quesque, F., Foncelle, A., Barat, E., Chabanat, E., Rossetti, Y., & Van der Henst, J.-B. (2021). Sympathy for the underdog: People are inclined to adopt the emotional perspective of powerless (versus powerful) others. *Cognition and Emotion*, 35(5), 902–917. <https://doi.org/10.1080/02699931.2021.1902282>.
- Raihani, N. J., Grutter, A. S., & Bshary, R. (2010). Punishers benefit from third-party punishment in fish. *Science*, 327(5962). <https://doi.org/10.1126/science.1183068> 171.
- Rakoczy, H., Kaufmann, M., & Lohse, K. (2016). Young children understand the normative force of standards of equal resource distribution. *Journal of Experimental Child Psychology*, 150, 396–403. <https://doi.org/10.1016/j.jecp.2016.05.015>.
- Riedl, K., Jensen, K., Call, J., & Tomasello, M. (2015). Restorative justice in children. *Current Biology*, 25(13), 1731–1735. <https://doi.org/10.1016/j.cub.2015.05.014>.
- Rizzo, M. T., & Killen, M. (2020). Children's evaluations of individually and structurally based inequalities: The role of status. *Developmental Psychology*, 56(12), 2223–2235. <https://doi.org/10.1037/dev0001118>.
- Robinson, P. H., & Darley, J. M. (1995). *Justice, liability, and blame: Community views and the criminal law*. Westview Press.
- Schmidt, M. F. H., Svetlova, M., Johe, J., & Tomasello, M. (2016). Children's developing understanding of legitimate reasons for allocating resources unequally. *Cognitive Development*, 37, 42–52. <https://doi.org/10.1016/j.cogdev.2015.11.001>.
- Schwartz, F., Djeriouat, H., & Trémolière, B. (2022). Agents' moral character shapes people's moral evaluations of accidental harm transgressions. *Journal of Experimental Social Psychology*, 102, 104378. <https://doi.org/10.1016/j.jesp.2022.104378>.
- Starmans, C., Sheskin, M., & Bloom, P. (2017). Why people prefer unequal societies. *Nature Human Behaviour*, 1(4). <https://doi.org/10.1038/s41562-017-0082-82>.
- Steckler, C. M., Liberman, Z., Van de Vondervoort, J. W., Slevinsky, J., Le, D. T., & Hamlin, J. K. (2018). Feeling out a link between feeling and infant sociomoral evaluation. *British Journal of Developmental Psychology*, 36(3), 482–500. <https://doi.org/10.1111/bjdp.12232>.
- Terrizzi, B. F., Woodward, A. M., & Beier, J. S. (2020). Young children and adults associate social power with indifference to others' needs. *Journal of Experimental Child Psychology*, 198. <https://doi.org/10.1016/j.jecp.2020.104867> 104867.
- Vaish, A., Herrmann, E., Markmann, C., & Tomasello, M. (2016). Preschoolers value those who sanction non-cooperators. *Cognition*, 153, 43–51. <https://doi.org/10.1016/j.cognition.2016.04.011>.
- van Doorn, J., Zeelenberg, M., Breugelmans, S. M., Berger, S., & Okimoto, T. G. (2018). Prosocial consequences of third-party anger. *Theory and Decision*, 84(4), 585–599. <https://doi.org/10.1007/s11238-017-9652-6>.
- Van Ness, D. W., & Strong, K. H. (2015). A brief history of restorative justice: The development of a new pattern of thinking. In I. D. W. Van Ness & K. H. Strong (Eds.), *Restoring justice* (5th ed., pp. 23–41). Anderson Publishing. <https://doi.org/10.1016/B978-1-4557-3139-8.00002-9>.
- Van Prooijen, J.-W. (2009). Retributive versus compensatory justice: Observers' preference for punishing in response to criminal offenses. *European Journal of Social Psychology*, 40(1), 72–85. <https://doi.org/10.1002/ejsp.611>.
- Vandello, J. A., Goldschmied, N. P., & Richards, D. A. R. (2007). The appeal of the underdog. *Personality and Social Psychology Bulletin*, 33(12), 1603–1616. <https://doi.org/10.1177/0146167207307488>.
- Vandello, J. A., Michniewicz, K. S., & Goldschmied, N. (2011). Moral judgments of the powerless and powerful in violent intergroup conflicts. *Journal of Experimental Social Psychology*, 47(6), 1173–1178. <https://doi.org/10.1016/j.jesp.2011.04.009>.

- Weber, C., & Vereenoghe, L. (2020). Reducing conflicts in school environments using restorative practices : A systematic review. *International Journal of Educational Research Open*, 1, 100009. <https://doi.org/10.1016/j.ijedro.2020.100009>.
- Wiessner, P. (2020). The role of third parties in norm enforcement in customary courts among the Enga of Papua New Guinea. *Proceedings of the National Academy of Sciences of the United States of America*, 117(51), 32320–32328. <https://doi.org/10.1073/pnas.2014759117>.
- Wojciszke, B., Bazinska, R., & Jaworski, M. (1998). On the dominance of moral categories in impression formation. *Personality and Social Psychology Bulletin*, 24(12), 1251–1263. <https://doi.org/10.1177/01461672982412001>.
- Wörle, M., & Paulus, M. (2018). Normative expectations about fairness: The development of a charity norm in preschoolers. *Journal of Experimental Child Psychology*, 165, 66–84. <https://doi.org/10.1016/j.jecp.2017.03.016>.
- Yang, X., Wu, Z., & Dunham, Y. (2021). Children's restorative justice in an intergroup context. *Social Development*, 30(3), 663–683. <https://doi.org/10.1111/sode.12508>.
- Zhang, X., Corbit, J., Xiao, X., Xu, L., Wei, B., & Li, Y. (2021). Material and relational asymmetry: The role of receivers' wealth and power status in children's resource allocation. *Journal of Experimental Child Psychology*, 208, 105147. <https://doi.org/10.1016/j.jecp.2021.105147>.
- Zhou, Z., & Wong, W. (2021). Young children's understanding of restorative justice. *Frontiers in Psychology*, 12, 715279. <https://doi.org/10.3389/fpsyg.2021.715279>.