



## Conflicting influences of justice motivations on moral judgments

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### ABSTRACT

Humans are motivated by justice concerns, yet vary in their reactions to observing or experiencing injustice. At a proximate level, approach and avoidance represent core fundamental motivational systems which have been proposed to be involved in two independent moral systems: a prescriptive system responsive to obligations (“*shoulds*”) and a proscriptive system concerned with prohibitions (“*should nots*”). It is unclear whether these motivational systems or personal involvement better explain the influence of justice dispositions on moral judgments. To clarify this theoretical argument, two experiments examined how dispositional self-oriented and other-oriented justice sensitivity influence condemnation of prescriptive and proscriptive violations while manipulating perspective between-subject or within-subject. Participants rated the permissibility of everyday moral transgressions, from the perspective of the victim or a neutral observer. In Study 1 ( $n = 235$ ), self-oriented dispositions increased and other-oriented dispositions decreased the probability of rating prescriptive violations as permissible. Study 2 ( $n = 468$ ) replicated the effect of other-oriented justice sensitivity. Overall, these results bridge the gap between motivational systems and self-other processing. They suggest that justice sensitivity is better conceptualised as distinct motivations which can exert opposing influences on moral decision-making. Moreover, personal involvement may not be as important as individual justice motivations for explaining everyday moral decision-making.

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Some early work in economics built on the assumption that people are mostly motivated by self-interest. However, there is much converging evidence from behavioural economics, anthropology, and psychology showing that humans, from early childhood, possess a sense of justice which manifests as concern for the welfare and rights of others (Hallsson, Siebner, & Hulme, 2018; Henrich et al., 2006; Sanfey, 2007; Tomasello, 2014). Justice involves normative principles for the allocation of rights, responsibility, and resources in society (Decety & Yoder, 2017), and is a core component of morality which plays a critical role in motivating and guiding individuals’ choices and behaviours across all human societies (Curry, Mullins, & Whitehouse, 2019; Decety & Wheatley, 2015). In this view, human nature includes a concern for others alongside self-interest (Crocker, Canevello,

& Brown, 2017; Vermunt, 2014). Moreover, shared principles of justice enable humans to cooperate in highly complex ways, such as by establishing institutions and entrusting them as legitimate authorities for administering and enforcing social norms (Tyler, 2018).

Justice sensitivity is a high-level construct that encompasses the tendency to perceive injustice and the propensity to react strongly to perceived injustice (Baumert & Schmitt, 2016). As such, it is a good indicator of an individual’s dispositional concern for justice. Two decades of social justice research have documented stable individual differences in justice sensitivity in adults (Baumert et al., 2014; Schmitt, Baumert, Gollwitzer, & Maes, 2010; Schmitt, Neumann, & Montada, 1995). Previous investigations have also highlighted how these dispositions influence social decision-making (Decety & Yoder,

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2017; Sabbagh & Schmitt, 2016; Yoder & Decety, 2018), and suggest that they are as important as situational factors for predicting prosocial behaviour (Edele, Dziobek, & Keller, 2013). Justice sensitivity has two partially independent components, often framed as dependent on whether an individual is the victim of an injustice. However, more recent work suggests that self-oriented and other-oriented justice sensitivity may instead capture different motivations to pursue just outcomes and avoid exploitation. The current work sought to distinguish between these theoretical frameworks by examining the association between dispositional justice sensitivity and moral judgment while manipulating perspective and moral motivational system.

### *Justice perspectives*

In this framework, self-oriented justice sensitivity reflects an individual's sensitivity to victimisation, while other-oriented justice sensitivity relates to injustice directed at another person (Bondü, Hanuschke, Elsner, & Gollwitzer, 2016). Self-oriented and other-oriented justice sensitivity stabilise over development at different rates (Bondü & Elsner, 2015), and are susceptible to justice-related experiences in predictable ways (Cowell & Decety, 2015; Wijn & van den Bos, 2010). These justice orientations have also been useful for characterising specific neural computations during moral decision-making using fMRI (Yoder & Decety, 2014b) and EEG (Yoder & Decety, 2014a).

The capacity to distinguish between one's own thoughts and feelings from those of others emerges early in childhood and is essential for successful social functioning (Steinbeis, 2016). For most of human history, individuals lived in small groups and engaged in repeated interactions (Baumard, André, & Sperber, 2013). Humans' elaborated social cognitive abilities allowed our species to observe and predict future behaviours of others, and then communicate that information to third parties (Baumard & Sheskin, 2015). Importantly, the ability to choose interaction partners, which humans share with other primates, appears to have played an important role in establishing social pressure towards equitable outcomes (Brosnan, 2013).

Seminal work in social psychology articulated self-other asymmetries in how individuals explain first-person (actor) compared to third-person (observer) behaviours (Jones & Nisbett, 1971). More recent

studies have identified multiple distinct actor-observer asymmetries arising from differences in access to information (e.g. internal mental states) and motivations to protect one's own sense of self or reputation (Malle, 2006; Malle, Knobe, & Nelson, 2007). There is solid evidence that mental states (e.g. intentions, beliefs, and goals), rather than traits, are the "default" mode of explanation for any observed behaviour (Korman & Malle, 2016). This has important implications in moral judgment because mental states are crucial factors in determining culpability and punishment, and a person's perceived moral character is fundamental to how others view them (Goodwin, 2015).

Unsurprisingly, self-other asymmetries extend to morality. For instance, research investigating moral hypocrisy reliably shows that while many individuals label counter-normative or unethical behaviour as morally wrong, they will engage in such behaviours themselves (Gino, 2015). Actor-observer perspective manipulations also alter permissibility judgments in sacrificial moral dilemmas (Nadelhoffer & Feltz, 2008). Moreover, fairness-related decision-making in economic games is impacted by whether decisions are made for oneself or on behalf of another person (Civai, Corradi-Dell'Acqua, Gamer, & Rumiati, 2010). A handful of neuroscience studies indicate that individuals assign more weight to the pain of others' than their own pain (Crockett, Kurth-Nelson, Siegel, Dayan, & Dolan, 2014), and encode profits as less valuable when they come at the expense of harming others (Crockett, Siegel, Kurth-Nelson, Dayan, & Dolan, 2017). However, reasoning is cheap and painless, while action and integrity are not (Blasi, 1983), and recent evidence suggests that while most individuals perceive themselves to be more moral than the average person, such perceptions do not translate into increased trust or fairness-related behaviours (Tappin & McKay, 2019). Importantly, cognitive neuroscience (Decety & Sommerville, 2003) and behavioural neuroeconomic work also indicate that self-interest and fairness concerns rely on partially distinct neural systems (Civai, Crescentini, Rustichini, & Rumiati, 2012; Corradi-Dell'Acqua, Civai, Rumiati, & Fink, 2013; Dawes et al., 2012), which can be independently disrupted or in conflict (Civai, Miniussi, & Rumiati, 2015). This fits well with recent theoretical accounts which argue that morality is better conceptualised as a conglomeration or mosaic of cognitive mechanisms rather than a single, unified process (Cushman, 2015).

Empathy, the ability to perceive and be sensitive to the emotional states of others, coupled with a motivation to care for their well-being, is known to be a driver of prosocial behaviour (Batson, 2009; Decety, 2015; Decety & Jackson, 2004; Derntl et al., 2010; Shamay-Tsoory, 2009), and constitutes one of the facets involved in morality. A host of studies demonstrate that empathy plays an important role in moral decision-making (Decety & Cowell, 2015; Patil & Silani, 2014), and that the components of empathy have distinct influences on moral cognition (Decety & Cowell, 2014; Decety & Yoder, 2017). Though empathic components share similarities with justice sensitivity, they are separable (Decety & Yoder, 2016) and impact distinct neural systems (Yoder & Decety, 2014b, 2014a). Thus, including measures of dispositional empathy is crucial for isolating the impact of justice motivations on moral reasoning.

### **Justice motivations**

An alternative framing of justice sensitivity places more weight on its motivational aspects. In this view, other-oriented justice sensitivity reflects a genuine prosocial motivation while self-oriented justice sensitivity involves a potentially antisocial self-interest and motivation to avoid exploitation (Gollwitzer, Rothmund, & Süßenbach, 2013; Rothmund, Gollwitzer, & Klimmt, 2011). Some support for the motivational account comes from asymmetrical effects of other-oriented and self-oriented justice dispositions on moral reasoning and behaviour (Gollwitzer, Schmitt, Schalke, Maes, & Baer, 2005). For instance, self-oriented justice sensitivity has been related to decreased rates of behaviours which require moral courage, such as publicly denouncing an extremist political party (Kayser, Greitemeyer, Fischer, & Frey, 2010). Individuals with higher dispositional self-oriented sensitivity also systematically underestimate the trustworthiness of other people (Gollwitzer, Rothmund, Alt, & Jekel, 2012). In contrast, other-oriented dispositions predict greater likelihood of intervening to stop a theft (Baumert, Halmburger, & Schmitt, 2013), and higher dispositional other-oriented justice sensitivity predicts greater third-party punishment (Lotz, Baumert, Schlösser, Gresser, & Fetchenhauer, 2011). Moreover, self-oriented and other-oriented justice sensitivity exert competing influences on judgments of social transgressions (Decety & Yoder, 2016). This matched earlier work showing similar effects of justice motives on self-reported previous

transgressions (Gollwitzer et al., 2005), which seem to be driven by an increased willingness to justify immoral actions.

An important theoretical addition to the study of morality and justice is the distinction between prescriptions and prohibitions. This work builds on a theoretical model of three fundamental emotion systems which support behavioural approach, behavioural avoidance, and fight/flight (Gray, 1990). In this model, the Behavioral Activation System (BAS) is sensitive to rewards and facilitates approach towards appetitive stimuli. Conversely, the Behavioral Inhibition System (BIS) is sensitive to punishment and supports the avoidance of aversive stimuli. Several instruments have been developed to assess dispositional approach and avoidance motivations, such as questionnaires which measure BIS and BAS in general (BIS/BAS; Carver & White, 1994), or promotion vs. prevention in regulatory focus theory (Higgins, 1997). A later measure was designed to assess BIS as sensitivity to punishment and BAS as sensitivity to reward (SPSRQ; Torrubia, Ávila, Moltó, & Caseras, 2001). The SPSRQ sought to improve upon the BIS/BAS by assessing sensitivity to specific cues and developing valid items that showed the expected correlations with Eysenck's Extroversion and Neuroticism (Heubeck, Wilkinson, & Cologon, 1998; Torrubia et al., 2001). More recently, a short-form of the SPSRQ has been proposed which addresses problems with the psychometric properties of the full version while maintaining the expected correlations with BIS/BAS, anxiety, and neuroticism/extraversion self-report measures (Cooper & Gomez, 2008).

According to the Moral Motives framework (Janoff-Bulman, Sheikh, & Baldacci, 2008), these motivational systems give rise to distinct types of morality. Approach motivation supports prescriptive morality, and covers morally obligatory actions. Conversely, proscriptive morality is concerned with actions which are forbidden and arises from avoidance motivation (Janoff-Bulman, Sheikh, & Hepp, 2009; Sheikh & Janoff-Bulman, 2010). Thus, the distinction between prescriptive and proscriptive moral violations provides an effective tool for investigating the motivational underpinnings of self-oriented and other-oriented justice motivations. Moreover, clarifying this relationship may elucidate why individuals sometimes disagree about the moral status of commonplace everyday interactions.

The current research was designed to examine the relation between justice dispositions, self-other

perspectives, and moral motives. Two studies assessed the influence of dispositional self-oriented and other-oriented justice sensitivity on moral judgments of prescriptive and proscriptive violations while manipulating the participant's perspective. It was predicted that if justice dispositions differ primarily on whether the target of injustice is the self or another person, then the association between these dispositions and moral evaluations should be altered by perspective manipulations. Specifically, JS-Self would be expected to predict increased condemnation of second-person violations, but decreased condemnation of third-person violations. Conversely, higher JS-Other would increase condemnation of third-party violations. Alternatively, if justice dispositions are primarily distinguished by their motivational aspects, then they should differentially impact judgments of prescriptive and proscriptive transgressions. Given the proposed link between victim sensitivity and fear of exploitation, JS-Self would be expected to predict judgments of proscriptive violations. Conversely, other-oriented justice sensitivity ought to predict specific condemnation of prescriptive transgressions.

## Study 1

Study 1 sought to characterise the impact of justice sensitivity perspectives on moral judgments of proscriptive and prescriptive transgressions. Other-oriented justice sensitivity is conceptualised to reflect a genuine prosocial concern for others. Thus, individuals higher in other-oriented justice sensitivity might provide permissibility ratings that are less sensitive overall, regardless of the type of violation. However, while prescriptive violations often carry less moral weight, the prosocial nature of other-oriented justice sensitivity should lead individuals with high other-oriented motivation to interpret prescriptive failures as immoral. Conversely, because self-oriented justice motivation is associated with distrust of others, individuals high in self-oriented justice sensitivity will not expect others to engage in helpful behaviour and rate prescriptive violations as less wrong.

## Materials and methods

### Participants

A short pilot study ( $n = 85$ , 52 men, ages 18–65) was conducted to estimate the effect sizes of the predicted interactions. A sample size of at least 220 was determined as sufficient to detect the effects with power

$= 0.8$  at  $\alpha = 0.05$ . Expecting that some online responses would later be excluded, a total of 299 adults in the United States were recruited to participate in an online survey through Amazon's Mechanical Turk (MTurk; Buhrmester, Kwang, & Gosling, 2011) in exchange for \$1.00. Response analysis (see below) identified 64 participants for removal, leaving a final sample of 235 participants (128 females,  $M_{\text{age}} = 36.8$ ,  $SD = 12.5$ ). All procedures were approved by the University of Chicago Institutional Review Board.

### Dispositional measures

After consenting, participants provided demographic information, including age, gender, educational level, and income. The Justice Sensitivity Inventory (JSI) was used to assess dispositional justice sensitivity (Schmitt et al., 2010). Participants rated how well each of 40 statements described them using a scale from 0 (not at all) to 5 (exactly). Scores for victim sensitivity were used to assess self-oriented sensitivity (JS-Self;  $\alpha = 0.92$ ) and scores for observer, beneficiary, or perpetrator sensitivity were combined to create a single score for other-oriented sensitivity (JS-Other;  $\alpha = 0.93$ ). The Interpersonal Reactivity Index (IRI; Davis, 1983) was used to measure three components of empathy, each with 7 questions (1 = Does not describe me well; 5 = Describes me very well). Empathic concern (IRI-EC;  $\alpha = 0.89$ ) refers to the tendency to be motivated to respond to needs of others. Personal distress (IRI-PD;  $\alpha = 0.86$ ) represents the extent to which another person's negative experiences elicit anxiety or discomfort. Finally, perspective taking (IRI-PT) captures an individual's ability and propensity to adopt the point of view of another person. Reliability for the 7-item IRI-PT was low ( $\alpha = 0.65$ ). Item analysis revealed that removing the first response item increased reliability to above acceptable levels ( $\alpha = 0.85$ ) while removing any other individual item did not (all  $\alpha < 0.65$ ). This adjusted IRI-PT was used in all models. The Sensitivity to Punishment and Sensitivity to Reward Questionnaire (SPSRQ-S) was used to assess dispositional approach and avoidance motivation (Cooper & Gomez, 2008). The SPSRQ-S is comprised of 24 yes/no questions that are summed to calculate participants reward sensitivity ( $\alpha = 0.70$ , 10 items) and punishment sensitivity ( $\alpha = 0.89$ ; 14 items).

### Stimuli and task

Stimuli and questionnaires were uploaded to Qualtrics, an online survey-hosting platform. Participants

signed up for the survey and received payment via MTurk. Participants were requested to read 10 scenarios adapted from a previous study of justice sensitivity and moral decision-making (Decety & Yoder, 2016). Each scenario consisted of three sentences and described a potential everyday dyadic interaction. For each scenario, participants were asked how morally “permissible” it would be for the actor to behave in a particular way and indicated their answer using a 7-point scale (1 = Completely, 4 = Somewhat, 7 = Not at all). Thus, higher scores equal more condemnation of the action. Half of the scenarios involved proscriptive violations of individuals engaging in a morally questionable action (e.g. cheating on a test, pushing a stranger). The other five scenarios depicted prescriptive violations of individuals failing to engage in a prosocial behaviour (e.g. not giving up one’s seat for a person on crutches, not helping someone pick up spilled groceries). See Supplemental Table 1 for the full list of scenarios. At the start of the study, participants were randomly assigned to the Second Person ( $n = 112$ ) or Third Person ( $n = 123$ ) group. In the Second-person group, scenarios were written in the second-person – i.e. the person affected by the interaction was “you”. In the Third-person group, scenarios were written in the third-person, and the affected party was replaced with “someone”. For example:

[Second-person, emphasis added] Tom is running to catch the bus which only leaves every hour. In front of Tom **you** are carrying two grocery bags which tear, and their contents spill all over the sidewalk. Besides Tom no one else is around to help.

How permissible is it for Tom to catch the bus without helping **you**?

[Third-person, emphasis added] Tom is running to catch the bus which only leaves every hour. In front of Tom **someone** is carrying two grocery bags which tear, and their contents spill all over the sidewalk. Besides Tom no one else is around to help.

How permissible is it for Tom to catch the bus without helping **them**?

Scenarios were presented in random order.

### Data analysis

All analyses were conducted in R version 3.6.0 (R Core Team, 2015). Careless responses (Curran, 2016) were evaluated for response time, invariability, and consistency. Respondents who completed the study too quickly (i.e. faster than a researcher responding

randomly without reading questions,  $n = 19$ ) or too slowly ( $>3$  SD above mean response,  $n = 2$ ) were excluded. Individuals who provided invariant responses to questionnaires that included reverse-scored items were removed ( $n = 5$ ). Finally, the mean of odd-numbered and even-numbered response items were calculated, and participants whose odd-even consistency scores were below 0.5 were excluded ( $n = 3$ ). Multivariate outliers were identified by comparing each participant’s squared Mahalanobis distance from the multivariate mean to the Chi-square distribution ( $n = 35$ ). Additionally, any participant who failed an explicit attention check (e.g. “For this question, selection Option 3”) was excluded.

Linear mixed-effects regression was used as implemented in the package lme4 (Bates, Mächler, Bolker, & Walker, 2015). Dummy coding was used for Gender, scenario Type, and Group. All other explanatory variables were z-scored (see Supplementary Table 2 for descriptive statistics). Multicollinearity was assessed by calculating the variance inflation factors for fixed effects terms (all VIF  $< 2.65$ ). An initial hierarchical linear model (HLM) was constructed containing demographic variables, Type, and Group, and was compared to a null model with only random terms. Next, approach and avoidance motivations were added, along with their interactions with Type, based on the Moral Motives theory (Janoff-Bulman & Carnes, 2013). Justice motivations were then added and allowed to interact with either Type, Group, or both. Dispositional empathy scores were then added to control for potential confounds with other-regarding dispositions. All models included random intercepts for participant and scenario. Models were compared using likelihood ratios. False discovery rate adjustments (Benjamini & Hochberg, 2000) were applied across all analyses to correct for multiple comparisons. Original data and analysis scripts are available upon request.

### Results and discussion

As shown in Table 1, modelling reward and punishment sensitivity improved the model with task and demographic variables ( $X^2(4) = 12.01$ ,  $FDRp = .045$ ), which did better than a model with only random effects ( $X^2(5) = 27.75$ ,  $p < .001$ ). Adding justice \* Type interactions ( $X^2(4) = 26.73$ ,  $FDRp < .001$ ) and dispositional empathy ( $X^2(4) = 25.20$ ,  $FDRp < .001$ ) further improved model fit. There was mild evidence that participants in the Third Person group provided harsher

**Table 1.** Parameters for hierarchical linear models in Study 1.

Fixed	Model 1 $\beta$ (SE)	Model 2 $\beta$ (SE)	Model 3 $\beta$ (SE)	Model 4 $\beta$ (SE)
Age	0.08 (0.02)***	0.07 (0.02)**	0.07 (0.02)**	0.05 (0.02) <sup>†</sup>
Gender	0.06 (0.02)*	0.04 (0.02) <sup>†</sup>	0.04 (0.02)	0.01 (0.02)
SES	0.01 (0.02)	0.02 (0.02)	0.03 (0.02)	0.02 (0.02)
Type	0.23 (0.22)	0.23 (0.22)	0.23 (0.22)	0.23 (0.22)
Perspective	0.05 (0.02) <sup>†</sup>	0.05 (0.02) <sup>†</sup>	0.05 (0.02) <sup>†</sup>	0.05 (0.02) <sup>†</sup>
PS		−0.05 (0.03)	−0.01 (0.03)	−0.03 (0.03)
RS		0.00 (0.03)	−0.01 (0.03)	−0.01 (0.03)
JS-Other			0.13 (0.03)***	0.08 (0.03)*
JS-Self			−0.10 (0.03)**	−0.07 (0.03) <sup>†</sup>
IRI-EC				0.12 (0.03)***
IRI-PT				−0.01 (0.02)
IRI-PD				0.04 (0.03)
Type*PS		−0.03 (0.02)	−0.01 (0.02)	−0.01 (0.02)
Type*RS		0.00 (0.02)	−0.06 (0.02)**	−0.06 (0.02)**
Type*JS-Other			−0.08 (0.02)**	−0.08 (0.02)**
Type*JS-Self			0.09 (0.03)**	0.09 (0.03)**
Random	Variance	Variance	Variance	Variance
Participant	0.27	0.26	0.24	0.20
Scenario	2.02	2.02	2.02	2.02
Residual	2.07	2.07	2.05	2.05
$\chi^2$	27.75***	12.01*	26.73***	25.2***
df	5	4	4	3
$\Delta$ AIC	42	38	19.2	0

Standardised weights and errors for fixed effect coefficients. RS: reward sensitivity; PS: punishment sensitivity; IRI-EC: empathic concern; IRI-PT: perspective-taking; IRI-PD: personal distress. Model 1 was tested against a null model with only random effects.

<sup>†</sup>FDR- $p < .1$ , \*FDR- $p < .05$ , \*\*FDR- $p < .01$ , \*\*\*FDR- $p < .001$ .

ratings overall ( $B = 0.18$ , 95% CI = [0.02, 0.35], FDR $p = 0.061$ ). There was also a significant interaction between Type and reward sensitivity ( $B = -0.19$ , 95% CI [−0.31, −0.06], FDR $p = 0.010$ ).

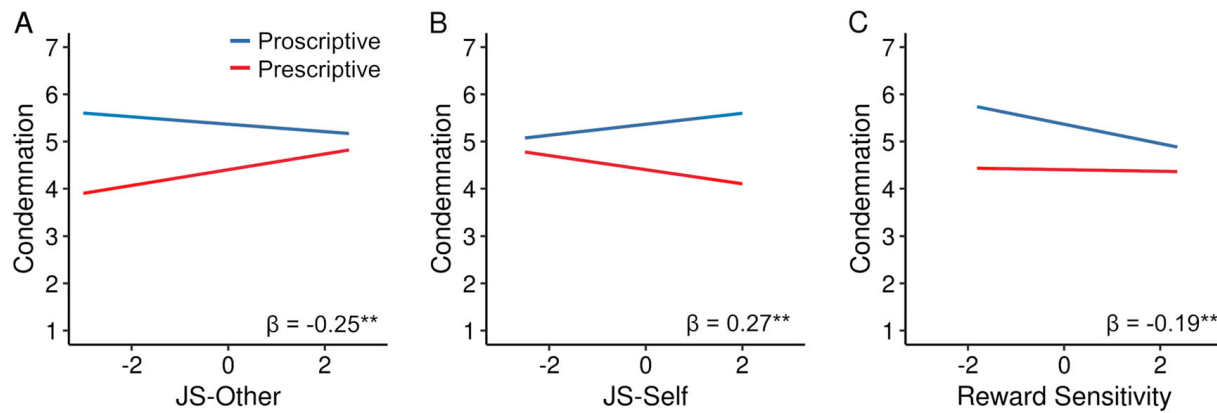
Older participants ( $B = 0.11$ , 95% CI [0.05, 0.17], FDR $p = 0.002$ ) and female participants gave harsher ratings ( $B = 0.18$ , 95% CI [0.05, 0.31], FDR $p = 0.023$ ). Higher dispositional prosocial motivations were associated with harsher ratings, indicated by significant positive effects for both empathic concern ( $B = 0.24$ , 95% CI [0.14, 0.35], FDR $p < .001$ ) and other-oriented justice sensitivity ( $B = 0.17$ , 95% CI [0.04, 0.29], FDR $p = 0.028$ ). The anticipated reverse effect for self-oriented justice sensitivity was in the expected direction, but became non-significant after FDR-correction ( $B = -0.15$ , 95% CI [−0.28, −0.02], FDR $p = 0.060$ ). Importantly, both justice dispositions showed significant interactions with scenario Type (Figure 1). Whereas JS-Other scores predicted greater condemnation of prescriptive violations ( $B = -0.25$ , 95% CI [−0.38, −0.11], FDR $p = 0.001$ ), JS-Self scored showed the opposite effect ( $B = 0.27$ , 95% CI [0.12, 0.41], FDR $p = 0.001$ ). Results were unchanged by including outliers (Supplemental Table 3).

Adding interactions between Group and justice motivations slightly improved the model with reward and punishment sensitivity ( $\chi^2(4) = 10.83$ ,

FDR $p = .060$ ), but not beyond the Type \* JS model ( $\chi^2(2) = 2.44$ , FDR $p = .427$ ), and model fit was not significantly improved by adding interactions between empathic dispositions and Group ( $\chi^2(3) = 0.37$ , FDR $p = .954$ ) or empathy and Type ( $\chi^2(3) = 7.49$ , FDR $p = .110$ ). Thus, though Study 1 found some support for victim-observer asymmetries in permissibility ratings, there was much stronger evidence for the motivational account of justice sensitivity. However, rather than a simple self-proscriptive, other-prescriptive mapping, justice dispositions primarily differentiated evaluations of prescriptive violations.

## Study 2

Study 1 provided some support for the motivational account of justice sensitivity, with the effect of justice sensitivity on moral judgments modulated by the type of scenario rather than the participant's perspective. Study 1 also identified general victim-observer asymmetries in permissibility ratings, but did not find evidence that the impact of justice dispositions on moral evaluation are modulated by the target of the transgression. However, it used a between-subject design, and so was incapable of characterising whether changing perspective framing affects moral judgment, and whether different justice motives



**Figure 1.** Visualisation of interactions from Study 1. Predicted response ratings based on standardised dispositions with unstandardised beta weights. (A) Other-oriented justice sensitivity (JS-Other) increased condemnation of prescriptive violations. (B) Self-oriented justice sensitivity (JS-Self) showed an opposite effect. (C) Reward sensitivity decreased condemnation of proscriptive scenarios more than prescriptive scenarios. \* $p < .05$ , \*\* $p < .01$ , (all FDR-corrected).

predict sensitivity to such perspective shifts. Study 2 employed a within-subjects design to investigate whether a short-term shift in one's perspective influences decision-making.

## Materials and methods

### Participants

Manipulating perspective within-participants meant each participant provided fewer ratings within each perspective frame. A larger sample was collected for Study 2, with data collected in batches until at least 500 adults had completed all measures. In total, 516 new participants in the United States completed a different online survey through Amazon's Mechanical Turk (MTurk) in exchange for \$1.00. Inattentive responses were identified and removed as described above. The final sample consisted of 468 participants (294 females,  $M_{age} = 37.1$ ,  $SD = 12.4$ ).

### Dispositional measures

Study 2 utilised the same dispositional measures as Study 1. SPSPQ-SF indexed avoidance motivation ( $\alpha = 0.86$ ) and approach motivation ( $\alpha = 0.69$ ). JSI assessed justice sensitivity for the self ( $\alpha = 0.93$ ) and others ( $\alpha = 0.95$ ). IRI subscales were used to measure personal distress ( $\alpha = 0.81$ ), and empathic concern ( $\alpha = 0.87$ ). The perspective taking subscale again had low reliability ( $\alpha = 0.60$ ), but removing the first item improved reliability ( $\alpha = 0.81$ ). Adjusted IRI-PT was used in all models. Descriptive statistics are reported in Supplemental Table 4.

### Stimuli and task

The task structure in Study 2 was modified to allow participants' perspective to be manipulated as a within-subject variable rather than as a between-subjects variable. Participants provided permissibility ratings for two blocks of stimuli. Each block consisted of five scenarios (minimum two scenarios of each type). All scenarios within a block were the same perspective (Second Person or Third Person). Block order and the stimuli that were included in each block were counterbalanced.

### Data analysis

Following the same analysis strategy as in Study 1, HLMs were used to model permissibility ratings, but with Perspective modelled as a within-subjects factor. Multicollinearity was again assessed by calculating the variance inflation factor for fixed effect terms in the final model (all  $< 2.65$ ). The same blocks as in Study 1 were used to construct HLMs.

### Results and discussion

The results of Study 2 (Table 2; Figure 2) largely replicated Study 1. Task and demographic variables did better than the null model ( $X^2(5) = 59.16$ ,  $FDRp < .001$ ). Adding reward and punishment sensitivity ( $X^2(4) = 12.73$ ,  $FDRp = .033$ ), justice motivations ( $X^2(4) = 25.47$ ,  $FDRp < .001$ ) and dispositional empathy ( $X^2(3) = 27.13$ ,  $FDRp < .001$ ), each improved model fit. Adding JS \* Perspective interactions did not improve model fit ( $X^2(2) = 2.669$ ,  $FDRp = .395$ ).

**Table 2.** Parameters for hierarchical linear models in Study 2.

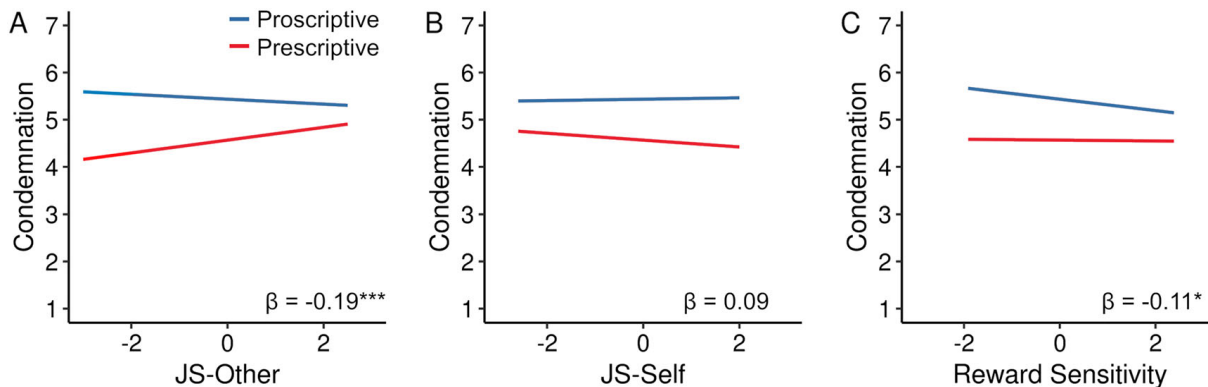
Fixed	Model 1 $\beta$ (SE)	Model 2 $\beta$ (SE)	Model 3 $\beta$ (SE)	Model 4 $\beta$ (SE)
Age	0.08 (0.02)***	0.07 (0.02)***	0.06 (0.02)***	0.05 (0.02)**
Gender	0.08 (0.02)***	0.07 (0.02)***	0.06 (0.02)***	0.04 (0.02)*
SES	0.02 (0.02)	0.02 (0.02)	0.03 (0.02)	0.03 (0.01)
Type	0.21 (0.21)	0.21 (0.21)	0.21 (0.21)	0.21 (0.21)
Perspective	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
PS		-0.03 (0.02)	-0.03 (0.02)	-0.01 (0.02)
RS		-0.02 (0.02)	-0.01 (0.02)	0.00 (0.02)
JS-Other			0.11 (0.02)***	0.07 (0.02)*
JS-Self			-0.06 (0.02)*	-0.04 (0.02)
IRI-EC				0.08 (0.02)***
IRI-PT				0.00 (0.02)
IRI-PD				-0.03 (0.02)
Type*PS		-0.03 (0.01)	0.01 (0.02)	0.01 (0.02)
Type*RS		0.00 (0.01)	-0.04 (0.02)*	-0.04 (0.02)*
Type*JS-Other			-0.06 (0.02)***	-0.06 (0.02)***
Type*JS-Self			0.03 (0.02)	0.03 (0.02)
Random	Variance	Variance	Variance	Variance
Participant	0.47	0.44	0.42	0.35
Scenario	1.97	1.98	1.98	1.98
$\chi^2$	59.16***	12.73*	25.47***	28.13***
df	5	4	4	3
$\Delta$ AIC	44	40	22	0

Standardised weights and errors for fixed effect coefficients. RS: reward sensitivity; PS: punishment sensitivity; IRI-EC: empathic concern; IRI-PT: perspective-taking; IRI-PD: personal distress. Model 1 was tested against a null model with only random effects.

\*FDR- $p < .05$ , \*\*FDR- $p < .01$ , \*\*\*FDR- $p < .001$ .

As in Study 1, participants who were older ( $B = 0.11$ , 95% CI [0.05, 0.17], FDR $p = 0.002$ ) or female ( $B = 0.18$ , 95% CI [0.05, 0.31], FDR $p = 0.023$ ) provided harsher ratings. Moreover, reward sensitivity was again associated with more permissive ratings of proscriptive violations ( $B = -0.11$ , 95% CI [-0.20, -0.02], FDR $p = 0.041$ ). Unlike in Study 1, the main effect of JS-Self did not reach significance ( $B = -0.07$ , 95% CI [-0.17, 0.02], FDR $p = 0.226$ , uncorrected  $p = .140$ ) nor was the Type \* JS-Self interaction significant ( $B = 0.09$ ,

95% CI [-0.02, 0.20], FDR $p = 0.202$ , uncorrected  $p = .122$ ). However, as in Study 1, prosocial motivations predicted harsher ratings overall, for both empathic concern ( $B = 0.17$ , 95% CI [0.09, 0.25], FDR $p < .001$ ) and JS-Other ( $B = 0.14$ , 95% CI [0.04, 0.23], FDR $p = 0.013$ ). The effect of other-oriented justice sensitivity was qualified by a Type \* JS-Other interaction (Figure 2;  $B = -0.19$ , 95% CI [-0.29, -0.09], FDR $p < .001$ ). Including outliers did not meaningfully alter these results (Supplemental Table 5). Thus, like Study



**Figure 2.** Visualisation of interactions from Study 2. Predicted response ratings based on standardised dispositions with unstandardised beta weights. (A) Other-oriented justice sensitivity (JS-Other) was increased condemnation of prescriptive violations. (B) The effect of self-oriented justice sensitivity (JS-Self) was not significant, but is shown for completeness. (C) Reward sensitivity decreased condemnation of proscriptive scenarios more than prescriptive scenarios. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . (all FDR-corrected).



1, Study 2 provided more evidence for the motivational account of justice sensitivity than the perspective account.

## Quantitative summary of studies 1 and 2

Data from studies 1 and 2 converged on the same set of fixed effect predictors (Tables 1 and 2). Meta-analytic techniques were applied to quantitatively summarise terms (Lipsey & Wilson, 2001). This approach utilised the individual effect sizes from the two independent samples to obtain a combined estimate for each fixed effect.

## Materials and methods

### Data analysis

Random effects meta-analyses were formed for each fixed effect using the “metafor” package (Viechtbauer, 2010). Effect sizes (i.e. standardised beta weights) and standard errors were extracted from the two final models in Studies 1 and 2. Betas were weighted by their inverse-variance, and heterogeneity was estimated using restricted maximum-likelihood.

## Results and discussion

Summarised effect estimates are shown in Table 3. Age, and empathic concern, and, to a lesser extent, gender and SES were each individually associated with harsher ratings. Prosocial motivations, specifically empathic

concern and other-oriented justice sensitivity, predicted greater condemnation, while self-oriented justice sensitivity predicted more permissible ratings.

The motivational account of justice sensitivity was partially confirmed. The impact of other-oriented justice sensitivity on moral ratings was modulated by the moral motive at play, with higher JS-Other scores predicting harsher ratings, especially for prescriptive violations. However, there was not evidence for an opposing Type \* JS-Self interaction (uncorrected  $p = 0.122$ , FDR $p = .202$ ). The combined estimate for perspective framing was not significant, failing to provide evidence for the existence of victim-observer asymmetries.

## General discussion

Justice motivation and self-other distinctions are two crucial components of human social cognition which each contribute to moral reasoning and social decision-making (Cushman, 2015; Decety & Yoder, 2017; Malle et al., 2007; Steinbeis, 2016). At the same time, approach and avoidance represent two basic motivational systems that guide some aspects of moral reasoning (Cornwell & Higgins, 2015; Janoff-Bulman et al., 2009). The current research was designed to characterise the overlap across these domains for a set of simplified interactions which someone might encounter in their everyday life (Decety & Yoder, 2016). Overall, the results from the current work indicate that other-oriented and self-oriented justice sensitivity are better conceptualised as prosocial and antisocial motivations, rather than self-focused and other-focused frameworks. This further suggests that compromising around moral beliefs may be difficult, but potentially solvable by focusing on positive mutual outcomes rather than encouraging one side to adopt the perspective of another.

Across both studies, dispositional other-oriented justice motivations predicted decreased moral condemnation of transgressions, especially prescriptive violations (Table 3; Figures 1 and 2). This replicates and extends previous work linking other-oriented justice motivation to moral judgment (Decety & Yoder, 2016) by incorporating moral motives theory (Janoff-Bulman et al., 2008). In other words, individuals motivated by genuine prosocial justice concerns perceive the act of withholding help as less morally permissible. Such an effect sheds light on an important theoretical question. An unresolved debate is how

**Table 3.** Meta-analytic summary of fixed effects parameters from Studies 1 and 2.

Effect	Estimate	95% CI	Z	Q
Age	0.05	(0.03, 0.08)	4.10	0.0003
Gender (Female)	0.03	(0.00, 0.06)	2.18	0.0601
SES	0.03	(0.00, 0.05)	2.09	0.0752
Type (Proscriptive)	0.22	(−0.08, 0.52)	1.45	0.2330
Perspective (Third)	0.02	(−0.02, 0.06)	0.89	0.4807
RS	−0.01	(−0.04, 0.03)	−0.35	0.8407
PS	−0.01	(−0.05, 0.02)	−0.72	0.5926
JS-Other	0.07	(0.03, 0.11)	3.82	0.0006
JS-Self	−0.05	(−0.09, −0.01)	−2.49	0.0326
IRI-EC	0.10	(0.06, 0.13)	5.55	0.0000
IRI-PT	0.00	(−0.03, 0.03)	−0.07	0.9547
IRI-PD	0.00	(−0.07, 0.07)	0.00	0.9964
Type * RS	−0.05	(−0.07, −0.02)	−3.66	0.0010
Type * PS	0.01	(−0.02, 0.03)	0.39	0.8198
Type * JS-Other	−0.07	(−0.10, −0.04)	−5.10	0.0000
Type * JS-Self	0.06	(0.00, 0.12)	1.91	0.1095

CI: lower and upper bounds of 95% confidence interval; Q: FDR-corrected significance level; RS: reward sensitivity; PS: punishment sensitivity; IRI-EC: empathic concern; IRI-PT: perspective-taking; IRI-PD: personal distress.

best to explain supererogatory actions, i.e. actions which are morally praiseworthy, but not morally required (Dorsey, 2013). Popular utilitarian formulations leave no room for supererogatory actions because those actions would in fact be morally required, as utilitarianism requires maximising general welfare (Singer, 2015). Conversely, Kantian ethics stipulates that someone act only out of duty, and if an act is not required it cannot be morally praiseworthy (Ferry, 2013). Thus, neither normative account provides a satisfactory explanation for the observation that some behaviours (e.g. running into a burning building to save two children) are viewed as morally praiseworthy, despite being optional (Dorsey, 2013). However, justice motivations may provide a resolution, at least for the deontologist, because they are associated with interpretation biases (Baumert & Schmitt, 2009). In other words, individuals could be acting out of a sense of moral duty, but disagree about which duties are most appropriate in the particular situation. Thus, individuals with higher levels of other-oriented justice sensitivity may perceive prescriptive norms as applicable in more situations or as carrying greater moral force. Future work is required to elucidate this issue.

The present study found virtually no support for a perspective account of justice sensitivity. Across both experiments, perspective interactions were worse at explaining variation in moral judgments that accounting for the relevant moral motivation. In Study 1, there was weak evidence that individuals who read third person scenarios gave harsher ratings (Table 1). Previous work indicates that people pay more money to alleviate the pain of others than themselves, so similar processes may be at play here (Crockett et al., 2014). Manipulating perspective within-participants did not significantly alter judgments (Study 2). The null finding is surprising, given that previous work has identified self-other asymmetries in moral dilemmas (Nadelhoffer & Feltz, 2008), behavioural explanations (Malle et al., 2007), and economic decision-making (Corradi-Dell'Acqua et al., 2013). One possibility is that the subtle perspective manipulation did not prevent participants from spontaneously adopting the perspective of the target of the transgression. The observed lack of significance could also be a consequence of the restricted stimulus set used here. Future studies with larger stimulus sets or positive controls for perspective manipulations will be needed to tease apart such alternatives.

Future studies will also be needed to clarify the relation between self-oriented justice motivation and moral judgment. The internal meta-analysis indicates that self-oriented and other-oriented justice motivation exert opposing, albeit small, effects on moral judgments. Moreover, other-oriented justice motivation predicts whether individuals evaluate prescriptive and proscriptive violations differently. The impact of self-oriented justice motivation was less stable, and the current data cannot determine whether the lack of significant Type\*JS-Self interactions is because the true effect is close to zero or because of particularities with these scenarios.

Reward sensitivity, one index of the behavioural approach system, showed a significant interaction with scenario type across both studies, wherein individuals with lower trait reward sensitivity rated proscriptive violations less permissible (see Figures 1 and 2(C) and Table 3). These findings were surprising, and seem to be at odds with previous investigations of approach motivation and the proscriptive-prescriptive distinction (e.g. Janoff-Bulman et al., 2009). Previous studies have tended to employ Carver's BIS/BAS (Carver & White, 1994), whereas the current study used the SPSRQ for reasons discussed in the introduction (Cooper & Gomez, 2008). However, it may be that these measurement tools are tapping into different levels of organisation (Cornwell & Higgins, 2015). Future studies could employ multiple assessments to clarify the relation of behavioural motivation and moral reasoning.

Empathy is a multi-faceted construct, and some dimensions can compete with justice concerns to influence moral decision-making (Decety & Cowell, 2015). Empathic concern, which reflects a motivation to care and respond to the needs of others (Batson, 2012; Gleichgerricht & Young, 2013), has been associated with prosocial behaviour in adults (Batson, 2009; Miller, Kahle, Lopez, & Hastings, 2015) and children (Decety, Meidenbauer, & Cowell, 2018; Williams, O'Driscoll, & Moore, 2014), and is often correlated specifically with other-oriented, but not self-oriented, justice motivation (Decety & Yoder, 2016). However, empathic concern and other-oriented justice motivation are distinct. Whereas empathic concern was associated with harsher ratings in general, modelling Type \* JS-Other interactions improved model fit, while interactions with empathic concern did not. In other words, other-oriented justice motivation involves aspects of context sensitivity that empathic concern does not.

In both studies, older participants were less likely to select a more permissible rating. Some evidence from multiple measurement domains including self-reports, prosocial behaviour, and functional MRI, suggests that people become more benevolent with age (Hubbard, Harbaugh, Srivastava, Degras, & Mayr, 2016), so older individuals may expect others to behave more prosocially in general. Additionally, women participants gave harsher condemnation ratings. This is in keeping with a behavioural study using similar stimuli, where females rated everyday transgressions as less permissible than males (Decety & Yoder, 2016). Several previous accounts have argued for gender differences in empathy dispositions (Baron-Cohen & Wheelwright, 2004; Eisenberg, Fabes, Schaller, & Miller, 1989; but see Michalska, Kinzler, & Decety, 2013) or that women are more likely to rely on ethics of concern rather than justice (Gilligan, 1982). Such conceptions are bolstered by evolutionary models which posit differential affiliative processes and caring motivation as a consequence of parental investment and pressure to protect and care for young (Decety & Svetlova, 2012; Decety, Norman, Berntson, & Cacioppo, 2012; Eagly, 2009). Thus, moral reasoning may be swayed by gender differences in dispositional empathy (Fumagalli et al., 2010; Gleichgerrcht & Young, 2013), especially empathic concern (Willer, Wimer, & Owens, 2015).

One potential limitation of the current work is in the phrasing of the moral evaluation question. Specifically, a particular action could be morally required, forbidden, or permissible (Kahane & Shackel, 2010). We used “permissibility” as the dependent measure to replicate, as closely as possible, previous work examining the relation between justice sensitivity and moral evaluations of everyday transgressions (Decety & Yoder, 2016). However, when participants indicate that they find an action permissible, it may be because they view the action as morally obligatory, merely permissible, or instead as outside the purview of the moral domain. The data presented here cannot distinguish between these alternatives, and so our speculations regarding the link between other-oriented justice sensitivity and supererogation should be further explored using measures that explicitly distinguish between these types of moral judgment.

## Conclusions

Humans are a highly social species that are driven both by self-interest and concern for others. The present

work demonstrates the importance of considering both motivations when investigating social decision-making, and suggests that justice sensitivity dispositions capture two motivations, rather than reflecting self-other asymmetries. These motivations exert opposing influences on moral judgment. Individuals who are motivated by a prosocial concern for others are more likely to condemn moral transgressions, while those motivated to avoid exploitation are more inclined to condone those same behaviours. Moreover, prosocial justice motives increase the moral culpability of prescriptive violations. Investigating how these drives contribute to disagreements about which actions are morally required may provide a path forward in solving moral conflicts.

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