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Empathic Anger and Personal Anger in Response to Fairness Violations: Relations to Self and Other-Oriented Motivation and Behavior

Athena H. Cairo
Virginia Commonwealth University

EMPATHIC ANGER AND PERSONAL ANGER IN RESPONSE TO FAIRNESS VIOLATIONS: RELATIONS TO SELF AND OTHER-ORIENTED MOTIVATION AND BEHAVIOR

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

By

Athena Hensel Cairo
B.A., University of Richmond, 2013
M.S., Virginia Commonwealth University, 2015

Director: Jeffrey D. Green, Ph.D.
Associate Professor, Department of Psychology

Virginia Commonwealth University
Richmond, Virginia
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Abstract

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Prosocial behavior research has shown that empathy-elicited compassionate concern often motivates actions performed with an ultimate goal of helping others even at cost to oneself, whereas empathic distress motivates low-cost help with an ultimate goal of helping oneself. Less is known about the motivational outcomes of *empathic anger* felt when witnessing injustice or harm to others. Though empathic anger predicts third-party compensation and punishment, it is unclear whether this motivation is ultimately self or other-oriented. Three experimental studies examined the *empathic anger-altruism hypothesis,* that empathic anger evoked when witnessing another being treated unjustly would evoke altruistic motivation to help the victim or punish the offender. In all three studies, empathic anger evoked motivation to punish a third-party offender. In contrast to the empathic anger-altruism hypothesis, Studies 2 and 3 found that witnessing third-party injustice typically led participants to punish an unfair offender, rather than help a third-party victim. Participants were equally likely to choose to punish an unfair delegator when witnessing third party unfairness as when they were personally treated unfairly. The lack of

willingness to help may be explained by low empathic concern evoked when witnessing a stranger be treated unfairly, compared to when remembering or imagining a close other be treated unfairly. Study 3 also found that motivation to punish the unfair offender was not altruistic, as participants overwhelmingly chose to self-compensate or avoid a decision when their response decision was costly. Implications for our understanding of the mechanisms underlying empathic anger, and the fundamental self or other-oriented nature of the emotional response, are discussed.

Introduction

> I am very proud, revengeful, ambitious, with more offences at my beck than I have thoughts to put them in, imagination to give them shape, or time to act them in.
> - Shakespeare, *Hamlet*

> Rage — whether in reaction to social injustice, or to our leaders' insanity, or to those who threaten or harm us — is a powerful energy that, with diligent practice, can be transformed into fierce compassion.
>
> - Bonnie Myotai Treace

Anger has been construed by some researchers as a "selfish" emotional state, motivating cognition and behavior that is ultimately self-serving and hurtful to others (Berkowitz, 1990; Lazarus, 1991). Evoked in response to personally-perceived slights, injustice, or harm committed by another, anger elicits both hostile attributions and motivation to act aggressively toward others (Berkowitz & Harmon-Jones, 2004; Fischer & Roseman, 2007; Frijda, 1987; Miceli & Castelfranchi, 2019). Angry emotions often evoke motivation to seek revenge against one's offender (Elshout et al., 2015; Frijda, 1987; Lemay et al., 2012; Seip et al., 2014), and successfully enacting revenge provides aggressors a source of pleasure (Chester & DeWall, 2017; Ramirez et al., 2005). Furthermore, anger promotes hostility and aggression toward individuals unrelated to the original offense, or those who did not intend any offense or harm (Fenigstein & Buss, 1974; Frijda et al., 1989; Keltner et al., 1993). If moral emotions are those elicited by disinterested concerns and that motivate prosocial action (Haidt, 2003), then much of the current research would suggest that anger, at least anger in response to personal offenses, is not a moral emotion.

However, anger can also be felt when witnessing another person being slighted or harmed, a term referred to here as *empathic anger* (Vitaglione & Barnett, 2003) or moral outrage (e.g., Fehr & Fishbacher, 2004). Empathic anger, like personal anger, has been shown to predict intended and actual retribution against offenders of third-party harm as well as motivate prosocial action on behalf of the third-party victim (Darley & Pittman, 2003; Gummerum et al., 2016; Lotz et al., 2011; Nelissen & Zeelenberg, 2009; van Doorn et al., 2017; 2018; Vitaglione & Barnett, 2003). Many questions remain about the interpersonal outcomes of empathic anger comparative to personal anger (see van Doorn et al., 2014 for a review). One major question that has yet to be systematically addressed is whether empathic anger and personal anger differ in their motivational quality. Specifically, is personal anger a source of self-serving motivation to act, and is empathic anger a source of altruistic motivation?

To address this question, I conducted three experimental studies to compare the effects of personally-focused anger and empathic anger on third-party helping, punishment of an offender, and self-compensation, as well as the potential moderating effect of decision cost. In the following sections, I review the literature on the effects of personal and empathic anger on interpersonal motivation and behavior.

A Tale of Two Emotional States: Personal Anger vs. Empathic Anger

Appraisal theories of emotion (e.g., the OCC model of emotion, Clore & Orony, 2013) conceptualize the process by which emotions are constructed through cognitive appraisals of the environment. This perspective posits that differences in emotions are not simply due to automatic physiological responses to stimuli (e.g., feeling anger as an automatic response to perceived threat), but rather arise from a perceiver's interpretations of the events that precede the emotional response. Different aspects of an event can be appraised, including the consequences of the event

(e.g., harm to oneself or others), the actions of agents being perceived (e.g., accountability of an offender), and valence of attitudes toward emotion objects (e.g., like or dislike of offender and third party targets; Clore & Orony, 2013). Although the OCC model has often been used to explain taxonomies of a wide range of emotions, it also can help distinguish the quality of self-focused and other-focused "flavors" of anger.

From an appraisal model perspective, anger is elicited when an event is appraised to have negative consequences, an agent violated a moral or justice-related tenet, and the agent can be held accountable (Kuppens et al., 2003; Mikula, et al., 1998). However, the perceived consequences and actions can be focused on the self or on another person. What I will be referring to as *personal anger* is a negative, high-arousal, hostile emotional response to personally unfair, uncomfortable, frustrating, or threatening situations (Cohen et al., 1996; Frjida, 1986; Mikula et al., 1998; Tangney et al., 1992). In contrast to fear or sadness, which might also arise under such conditions, personal anger is an approach-oriented emotion and is associated with lower feelings of unease compared to sadness or fear (Carver & Harmon-Jones, 2009; Miceli & Castelfranchi, 2019). Instead of motivating introspection or withdrawal, personal anger motivates antagonistic behaviors to either cause harm to the offender, restore equity between the offender and the self, or both (Frijda & Mesquita, 1994; Tamir et al., 2008; Stillwell et al., 2008).

In contrast, *empathic anger* can also be evoked when witnessing a third party being harmed, treated unfairly, or having a goal blocked (Darley & Pittman, 2003; Gummerum et al., 2016; Lotz et al., 2011; Nelissen & Zeelenberg, 2009; van Doorn et al., 2017; 2018; Vitaglione & Barnett, 2003). When considering empathic anger through the perspective of appraisal theories, empathic anger is similarly evoked by situational appraisals of an accountable offender,

a negative harmful outcome, and an unjust event consequence. However, empathic anger also includes a focus on the third party being harmed, meaning that the focus of event consequences is shifted from the self to the third-party victim (Vitaglione & Barnett, 2003; Batson, 2015). The attentional shift from self to other as a result of empathic sensitivity is thought to underlie differences in prosocial motivation between personal and empathic anger.

Empathy-Altruism Hypothesis

Empathic anger is thought to be a facet of emotional empathy. Empathy, the ability to understand and feel another's emotions, refers to a broad range of emotional, cognitive, and motivational processes. The emotional component reflects affective sharing ("feeling what another person feels"), shared representations of self and other, and emotional contagion. The cognitive component reflects perceiving, imagining, and/or understanding another person's emotional state. The motivational component includes elements of both emotion and cognition, reflecting emotions like sympathy and empathic concern, compassionate feelings that are congruent with (but not the same as) a target's perceived emotional state (Batson, 2009; 2011; Zaki & Oschner, 2012).

The *empathy-altruism* hypothesis posits that altruistic behavior—behavior that takes the ultimate goal of improving another's welfare—can be evoked by empathic concern or compassion for the victim. A great deal of research has highlighted a link between experiencing empathy (either emotionally or cognitively) and helping a target of empathy. However, several researchers have cautioned against relying on affective empathy as a moral compass, and pointed out several negative outcomes of affective empathy on behavior, such as its parochial nature and potential to motivate unjustified harm (e.g., Bloom, 2016; Decety & Cowell, 2015). One reason why affective empathy has such limits is that it involves mapping the emotional experience of a

target onto one's own experiences. At the neural level, emotional empathy involves an overlap of brain regions involved in processing information about the self (e.g., pain) and those involved in processing information about others (Eisenberg & Sulik, 2012; Lamm et al., 2010; Preston & Hofelich, 2012). When empathically aroused individuals are not as able to differentiate their empathized distress from their own feelings, they feel *personal distress*, leading to greater self-focused attention and motivation to alleviate their negative affect (Batson et al., 1988; Eisenberg & Eggum, 2009). Feeling personal distress may motivate helping a target of empathy, but is motivated by an ultimate goal of alleviating the empathizer's negative affect (Cialdini et al., 1987; Batson et al., 1989). When helping is perceived to be difficult, or it will not alleviate the negative affect, personal distress will more often predict escape behavior rather than help (Shaw et al., 1994; Cameron & Payne, 2011; Cialdini et al., 1987).

When the perceiver is aware of the distinction between their own affective state and that of the victim, they are more likely to feel *empathic concern*, an other-oriented emotional response congruent with the welfare of the victim. Empathic concern does not always involve feeling exactly as the victim feels, but reflects emotions that are similar in valence to what one perceives the victim to feel (e.g., a perceiver might feel guilt and tenderness when perceiving a victim who is visibly sad; Wondra & Ellsworth, 2015). Empathic concern motivates goals to improve the welfare of the victim over and above improving one's own welfare (Batson et al., 1988; Decety & Batson, 2007; Stocks et al., 2011). The proposal that empathic concern motivates altruistic behavior whereas personal distress motivates egoistic behavior forms the basis of the *empathy-altruism hypothesis.* That is, empathizing with someone in need will motivate selfless helping when a perceiver feels empathic concern, but will motivate self-serving prosocial behavior when a perceiver is personally distressed (Batson et al., 1988; 2015). Many

studies have supported the empathy-altruism hypothesis, showing that empathic concern predicts helping as a function of valuing the victim's welfare, and empathic concern-induced helping is independent of egoistic motivations such as escaping the need situation (Bierhoff & Rohmann, 2004; Stocks et al., 2009); avoiding negative social evaluations (Fultz et al., 1986; Batson & Weeks, 1996); sharing joy with the victim as a result of helping (Batson et al., 1991); perceiving the other as part of the self (Batson et al., 1997); or relieving negative mood states (Schroeder et al., 1988; Dovidio et al., 1990). While these motives all predict helping a victim, feelings of other-oriented empathic concern uniquely predict altruistic behavior to help a victim were motivated primarily by the well-being of the victim.

Empathic Anger and Empathic Concern

Some researchers have suggested that empathic anger is one facet of empathic concern specific to perceiving injustice situations (Batson et al., 1988; Stocks et al., 2011). Within the empathy-altruism hypothesis model, empathic anger can be construed as an emotion elicited when witnessing another person be harmed or treated unfairly, which may also elicit an other-oriented goal to improve the victim's welfare (Batson et al., 1988; Batson et al., 2007, 2009). To this point, empathic anger seems to be affected by similar factors as empathic concern. For instance, empathic anger is elicited most strongly when individuals are encouraged to take a victim's perspective (Batson et al., 2007), but will also occur without explicit prompting as well (Vitaglione & Barnett, 2003). Empathic anger is elicited more strongly when the victim is perceived to be similar to the perceiver than when dissimilar, even when considering obvious moral violations such as torture which might be expected to elicit consistently high outrage across victims (Batson et al. 2009; Molenberghs et al., 2016).

Some evidence also suggests that the personality and developmental traits underlying empathic anger map onto empathic concern more so than empathic personal distress. Trait empathic anger has been shown to be more strongly related to trait empathic concern (r = .46) than trait personal distress (r = .26), and state empathic anger correlates moderately with state empathic concern (r = .47, Vitaglione & Barnett, 2003). Other-oriented justice sensitivity—a proxy of likelihood to feel empathic anger—is similarly positively associated with empathic concern (r = .43) and unassociated with personal distress (r = .10; Decety & Yoder, 2015). In sum, if empathic anger is truly an empathy-driven emotional response, it is likely more similar to empathic concern than personal distress.

Empathic Anger-Altruism Hypothesis

If empathic anger is a facet of empathic concern, then empathic anger may similarly evoke altruistic goals to improve a victim's welfare. These goals and behavioral intentions may take the form of helping the third-party victim or punishing the offender. I will refer to this as the *empathic anger-altruism hypothesis.* That is, empathizing with a victim who has been harmed will motivate goals to restore justice for the victim, either through helping the victim or punishing the offender. There is significant evidence to suggest that empathic anger motivates both punishment and helping behavior (Darley & Pittman, 2003; Gummerum et al., 2016; Lotz et al., 2011; Nelissen & Zeelenberg, 2009; Omara et al., 2011; van Doorn et al, 2017) as well as motivates action tendencies toward restoring justice (e.g., joining political groups, Van den Vyer & Abrams, 2015). However, less is known about whether empathic anger reliably predicts helping or punishment (or whether this choice is moderated by certain factors). Additionally, few studies have examined the question of altruistic motivation evoked by empathic anger.

Empathic Anger and Responses to Injustice.

Evidence as to whether empathic anger evokes a preference for prosocial or punishment-focused motivation has been mixed to date. Several studies have examined the effects of empathic anger toward unfair monetary allocations (e.g., Fehr & Fishbacher, 2004; FeldmanHall et al., 2014; Gummerum et al., 2016; Jordan et al., 2017; Lotz et al., 2011; van Doorn et al., 2018), criminal or social injustices (Landmann et al., 2017; Rothschild & Keefer, 2017), or physical/emotional harm to a victim (e.g., Pedersen et al., 2018; Phattheicher et al., 2019).

Evidence that Empathic Anger Promotes Third Party Helping/Compensation. In support of the empathic anger-altruism hypothesis, substantial research suggests that when individuals experience empathic anger, they are most often motivated to maximize the victim's welfare over and above punishing the perpetrator. In several studies where participants witnessed unfair economic allocations, participants chose to respond to the unfair allocation by compensating the victim more often than punishing the unfair dictator (Gummerum et al., 2016 [comparison of studies 1 and 2]; Lotz et al., 2011; van Doorn et al., 2018). In addition, a study comparing reactions to personal or third-party unfair treatment found that participants maximized benefits for a third party member by switching their typical preference from self-compensation (when personally treated unfairly) to a "reverse compensation option" (when another was treated unfairly) in order to both compensate the victim and punish the unfair dictator (FeldmanHall et al., 2014). These findings suggest that empathic anger focuses attention on elements that will restore victims' well-being rather than punishing the offender or directly compensating the victim.

Similarly, a study of the effects of emotion on donations to charity found that when a donation was framed as directly restoring victims' well-being (e.g., charities to help women in crisis start a new life), compared to a non-restorative function (e.g., charities for special crisis

centers for women, to alleviate their suffering and prevent deterioration of their situation), participants who felt greater anger donated more to the restorative charity (van Doorn et al., 2017). This study suggests that this motive to restore well-being not only promotes motivation to help a third-party victim, but also guides what type of help is deemed most warranted.

Evidence that Empathic Anger Evokes Motives to Restore Justice. An alternative model suggests that empathic anger may not be reliably associated with primarily helping or punishment behavior, but rather, the primary goal evoked is to reduce the unfairness that the empathizer witnessed and restore justice to all actors involved. This rectification of unfairness could be achieved either through punishing the offender or helping the victim, and the choice may be moderated by appraisal of the situation. Several studies have shown evidence in support of this model. One series of experiments found that participants' self-reported anger toward news stories of injustice was more strongly associated with the general unfairness of the situation more so than the well-being of the victim (Landmann & Hess, 2017). Another set of experiments by Adams and Mullen (2015) found that participants who punished offenders of injustice later reported decreased willingness to help the victim, due to a feeling that justice has already been restored. In contrast, participants who compensated the victim did not report decreased decisions to punish the offender (Adams & Mullen, 2015). In addition, when punishment is the only or primary option, heightened compassion for a victim magnifies the desire to punish the perpetrator, not simply motivation to compensate the victim (Phattheicher et al., 2019). These findings together suggest that empathic anger may be associated with restorative justice goals.

However, the choice to help, punish, or even self-compensate or escape the situation also may be moderated by empathy-relevant factors. Helping the victim seems to be the preferred option when an individual feels empathy for the victim. For example, Leliveld et al. (2012)

found that participants high in trait empathy tended to choose to compensate a victim of an unfair economic allocation, whereas those low in empathic concern tended to choose to punish the unfair dictator. At the level of interpersonal empathy, several studies suggest that closeness to and compassion for a victim also predicts motivation to help the victim over punishing the offender. In another study that compared witnesses' choice between third-party helping and punishment, Van Prooijen (2010) found that participants were more likely to prefer punishment of a criminal than compensation of a victim in a mock jury context if they did not feel close to a hypothetical victim. When participants felt emotionally close to the victim, their preference shifted to compensation (Van Prooijen, 2010).

The attentional focus on the self, offender, or victim likely serves as a mechanism through which compensation or punishment decisions are made. In an fMRI study of participant responses to unfair dictator games, participants were asked to focus either on the recipient's acceptance of an offer or the dictator's proposal of an offer games (David et al., 2017). When an unfair offer was made, those who focused on the dictator's offer chose to punish the dictator more quickly and to a stronger extent, and those who focused on the recipient's acceptance of the offer chose to help the recipient more quickly and more strongly (David et al., 2017).

In line with the empathy-altruism hypothesis, these findings suggest that empathic anger motivates other-oriented goals to improve a target's welfare. Though it seems empathic anger promotes third party helping more so than punishment when the options are mutually exclusive, this choice may be dependent on moderating factors such as capacity to feel concern for the victim and perception of transgression severity. Because these goals seem predominantly other-oriented, the empathic anger-altruism hypothesis would predict that anger on behalf of a cared-for victim would also evoke altruistic motivation to help.

Empathic Anger and Altruistic Motives.

Few studies have directly tested the comparative effects of personal and empathic anger on altruistic goals and behavioral responses to transgression. However, some studies of empathic anger and personal anger responses to unfairness do involve certain elements of costliness. To the extent empathic anger predicts either helping or punishment, studies suggest that behaviors are likely to occur even in the presence of some type of decisional cost**.** Van Doorn et al. (2018) asked participants to recall, imagine witnessing or actually witness an unfair monetary allocation in an economic allocation game. Participants were allowed to choose between compensation, punishment, self-compensation, or escape. Across all three studies, participants chose to compensate the victim more often than punish the offender, even when they had to give up some of their own money (van Doorn et al., 2018). Similarly, studies of third-party punishment ultimatum games suggest that individuals readily give up their own money to punish third-party offenders (Jordan et al., 2016; 2017).

Other research suggests empathic anger evokes altruism through testing the empathic joy hypothesis, that individuals help a victim in need in order to empathize with the target's satisfaction at being helped. In a set of experiments, Lotz et al. (2011) found that participants who witnessed an unfair allocation in a dictator game who felt greater empathic anger were more willing to both punish the offender and compensate the victim even when victims were unaware that their allocation was unfair (Lotz et al., 2011). In contrast, feelings of personally-focused threat only predicted helping a victim when the victim was aware of their unfair treatment, which would allow the participant to feel empathic joy from their punishment/compensation reallocation.

A tangential line of evidence that empathic anger promotes altruistic motivation can be drawn from research on the effects of attentional focus on the actors and consequences of an event. Based on the OCC model of emotion, the emotional salience and outcomes of personal and empathic anger are hypothesized to differ based on a perceiver's focus on the actor and recipient of harm. To this point, Gummerum et al. (2016) found that participants who recalled an incident of personal anger prior to witnessing an unfair dictator game compensated the victim of the game less than those who recalled an incident of empathic anger. However, when participants were distracted prior to making their redistributive decision, the difference between incidental empathic and personal anger disappeared. These findings suggest preliminary evidence that sustained attentional focus on the self or others is a fundamental mechanism for how personal and empathic anger influence interpersonal behavior.

However, recent evidence has also shed doubts on whether empathic anger evokes altruistic punishment. Pedersen et al. (2018) found that participants who witnessed third party unfairness via insult did not attempt to punish the third-party offender unless the victim was a friend, or the participant knew they were being witnessed. It may also be that third party punishment may only be elicited when the witness perceives the harm to be extremely unjust and they feel compassion for the victim (Pfattheicher et al, 2019). A study of real-world extreme altruists (individuals who donated an organ to a stranger) found that altruists were more likely to help a victim than punish an offender, and no significant association was found between altruism and third-party punishment (Brethel-Haurwitz et al., 2015). In addition, empathic anger predicts harsher punishment when one's behavior is observed by an audience than when the decision is anonymous, further suggesting that individuals engage in seemingly altruistic punishment to preserve a positive self-image (Kurzban et al., 2007). These findings suggest that empathic anger

may predict costly punishment only when participants feel close to the victim, or when punishment confers benefits such as increased positive affect (e.g., Chester & DeWall, 2017), decreased guilt (e.g., Rothschild & Keefer, 2017), or adherence to social norms (e.g., Pedersen et al., 2018).

The aforementioned studies have a few limitations in testing the empathy-altruism hypothesis in the context of empathic anger. Though Lotz et al. (2011) manipulated non-altruistic benefits and several studies examined costly decisions as outcomes (e.g., Gummerum et al., 2016; Jordan et al., 2016; 2017), no studies to date have systematically tested the effect of decision cost. This manipulation of cost is especially important, as not only actual cost but perceived cost may be an important boundary condition to altruistic behavior and an important clarification to the empathy-altruism hypothesis. It is therefore currently difficult to determine whether participants perceived the cost of third-party compensation or punishment to outweigh the psychological or social benefits of the action.

Personal Anger and Punishment/Self-Focused Motives

In contrast to empathic anger, personal anger is expected to elicit egoistic motives and responses to interpersonal transgressions. Several studies point to the self-oriented nature of anger. In contrast to empathic anger, recalling an incident of personal anger has been shown to reduce altruistic compensation for a victim (Gummerum et al., 2011). In low-stakes online encounters in which punishment may not be very meaningful, participants have been shown to opt for self-reward over punishing an offender when they must choose only one option (FeldmanHall et al., 2014). Even when anger motivates social behavior, this behavior is predominantly motivated by personal gain, whether it be hedonic or instrumental (e.g., Tamir et al., 2009).

In addition, personal anger has been correlated with other dimensions of self-focused attention. Rumination, an excessive focus on distressing thoughts and emotions, is positively associated with personal anger, and angry rumination engages brain regions associated with self-reflection while downregulating regions associated with self-control (Denson, 2012). Self-reported anger has also been shown to correlate positively with private self-consciousness, so even though it may elicit lower public self-consciousness than contentment or sadness (Green & Sedikides, 1999), anger may still evoke greater self-focused attention compared to a neutral state (Wood et al., 1990). Furthermore, aggression as a result of personal anger seems to be intensified with greater self-focus. An early experiment by Scheier (1976) found that individuals who were insulted by an experimenter later gave higher-intensity electric shocks during a Milgram-style learning tasks if they completed the task in a room with a mirror, and the effect was stronger for participants high in trait self-consciousness.

However, there is some evidence that personal anger may also motivate prosocial motivation. Personal anger may motivate actions to change an offender's behavior, more than improving one's mood state. Anger expression can be instrumental in changing an offender's behavior (to "teach them a lesson"), and when individuals have the opportunity to express their anger to an offender, they subsequently have a weaker desire to punish (Xiao & Houser, 2005). Furthermore, anger is positively correlated with support for nonviolent policies and constructive risk-taking during the de-escalation stage of an intergroup conflict (Reifen Tagar et al., 2011). These findings suggest that anger may elicit other-oriented motivation, as anger promotes approach-oriented interpersonal behavior. However, it is notable that other-oriented actions motivated by personal anger are often contexts where the prosocial behavior was mutually beneficial.

Together, these results suggest that particularly in costly situations, personal anger seems to elicit self-oriented motivation and personally rewarding behavior, compared to prosocial emotions and altruistic behavior. However, more research is needed to replicate these findings that personal anger motivates self-rewarding behavior over punishment behavior when given a mutually exclusive choice, as few studies have examined this directly.

Contributions of the Proposed Studies and Hypotheses

While many previous studies indirectly point to empathic anger being associated with altruistic motivation, and personal anger being associated with egoistic motivation, no research to date has directly examined this question by comparing personal and empathic anger on self-compensation, third-party compensation, and punishment while moderating high or low decision costliness. The question of decision cost is an important one to examine—and is the most novel aspect of this project—as it tests whether empathic anger is truly altruistic and predicts helping uncostly situations, rather than simply a willingness to help as a way to alleviate negative affect.

To better understand the egoistic or altruistic nature of empathic anger, research must disentangle the anticipated rewards of helping or hurting (egoistic motivation) from the motivation to restore fairness and increase the well-being of a victim (altruistic motivation). In addition, it is necessary to systematically examine the effects of decision cost in personal anger and empathic anger-eliciting situations on behavioral decisions. To this end, three studies examined the altruistic or egoistic motives and behavior accompanying empathic anger as well as experimentally manipulated decision cost in a novel third-party punishment scenario.

Specifically, Study 1 examined the difference between recalling an event which evoked personal or empathic anger, and examined the subsequent effects on participants' motivation to

engage with others socially as well as generally engage in prosocial or aggressive activities. To examine responses to injustices happening in the present, two subsequent experiments (Study 2 and 3) assessed the differences in participants' motivation to self-compensate, escape a retaliation situation, help a third party, or punish an offender after experiencing either personal or empathic anger. Only a few studies have directly compared empathic and personal anger in a single experiment (David et al., 2017; FeldmanHall et al., 2014; Gummerum et al., 2016; Omara et al., 2011), but none of these offered self-compensation and escape together as behavioral options in response to unfairness. Furthermore, no studies of empathic anger have directly measured self-focused and other-focused goals as mediators of anger effects on behavioral decisions. Additionally, Studies 2 and 3 constrained participants to choose one behavioral response (either helping, punishment, self-compensation, or escape) so as to conceptually replicate findings that individuals are more likely to choose self-compensation than punishment when they are personally angered by an offender (FeldmanHall et al., 2014), but are more likely to compensate a victim or punish an offender when a third party is treated unfairly (Gummerum et al., 2016; van Prooijen, 2010).

Study 2 examined participants' responses to an unfair group task over the internet (recruiting an MTurk sample) whereas Study 3 tested these effects in a more controlled laboratory setting (recruiting a student sample). Despite prior research claiming that empathic anger elicits altruistic helping or punishment (e.g., Gummerum et al., 2016; Lotz et al., 2011; Jordan et al., 2016; 2017), the boundary conditions of personal and empathic anger effects by perceived cost and benefit have not yet been studied. By examining what motivations mediate anger effects on behavior in high-cost and low-cost situations, researchers will be able to discern more clearly whether empathic or personal anger motivate altruistic or self-serving behavior.

These studies specifically tested the following hypotheses:

H1. Empathic anger and personal anger will predict different responses to unfairness, such that:

a. Empathic anger will predict more third-party compensation than personal anger.
b. Personal anger will predict more third-party punishment than empathic anger.
c. Personal anger will predict more self-compensation than empathic anger.

H2. Empathic anger and personal anger will be associated with different goal tendencies, such that:

a. Empathic anger will evoke stronger other-oriented (altruistic) goals.
b. Personal anger will evoke stronger self-oriented (egoistic) goals.

H3. The effects of empathic and personal anger on decisions in a modified third-party punishment (MTPP) task will be mediated by goal type, such that:

a. The effect of anger condition on differences in third-party compensation will be mediated by other-oriented goals.
b. The effect of anger condition on differences in third-party punishment will be mediated by other-oriented goals.
c. The effect of anger condition on differences in self-compensation will be mediated by self-focused goals.

H4. High decision cost will decrease willingness to help a victim of unfairness and punish a perpetrator of unfairness across both personal anger and empathic anger conditions. However, it is an exploratory research question whether the effects of decision cost will be moderated by

personal or empathic anger scenarios, and to what extent cost will influence the choice to help, punish, self-compensate, or avoid making a decision.[1]

[1] As a note, this hypothesis changed slightly from the original proposal shared in January of 2018 prior to completion of data collection and before any analyses were conducted. The original hypothesis included directional hypotheses of how cost would moderate the influence of empathic or personal anger evoking situations. The change to an open-ended research question reflected new evidence by Pedersen et al. (2018) showing consistent support for the lack of costly third-party punishment. The updated hypothesis and research questions were preregistered on OSF.

Study 1

Study 1 was conducted to establish whether empathic anger predicts heightened social connection and motivation to help or hurt others compared to personal anger. In this first study, participants responded to emotional memory prompts (adapted from Batson et al., 2007) which elicited a memory of personal anger, empathic anger, or a neutrally-valenced event.

Empathic concern and compassionate responding are elicited through increased attention to and valuation of the experiences of others, and particularly others in need (Fredrickson et al., 2008; Lishner et al., 2011; Singer & Klimecki, 2014). Therefore if empathic anger is similar to empathic concern, it should elicit a greater motivation to engage in prosocial behavior with anyone, not just the perceived victim. In contrast, personal anger is expected to only predict increased motivation to aggress against others (measured through reported desire to engage in hostile activities) compared to a neutral emotional state.

In addition, empathic concern also serves an information function cuing the empathizer to perceive that they value and care about the victim's welfare (Batson et al., 1995; Pavey, Greitemeyer, & Sparks, 2012). In contrast, personal distress responding is self-focused, and associated with greater egoic attention and motivation (Singer & Klimecki, 2014; Eisenberg & Eggum, 2009). Therefore it was expected that empathic anger (elicited through a personal memory) would increase attention to one's state of social connectedness and motivation to affiliate with others, comparative to feelings of personal anger or a neutral emotional state.

Method

Participants and Design

Study 1 utilized a one-way experimental design with three groups (Emotional Memory: Personal Anger, Empathic Anger, or Neutral). The full original sample included 165 adults recruited from Amazon MTurk; 15 participants were removed from analyses for writing about situations that were incongruent with the prompts (e.g., writing about an experience that happened to a friend in the personal anger condition). A power analysis using G*Power (Faul, Erdfelder, Buchner, & Lang, 2013) indicated that 60 participants would be necessary to detect an effect size of η^2 =.15 when comparing differences across three groups. This expected effect size was based on Vitaglione and Barnett's (2003) finding that state empathic anger has shown a moderately strong relationship with helping motivation (r = .39, translating to η^2 =.15), and a sample size roughly 2.5 times that minimum was obtained in order to detect potentially smaller effects (Simonsohn, 2015). Participants of all races/ethnicities aged 18 and older from the United States, Canada, and the U. K.[2] were recruited in the summer and Fall of 2017 and compensated $0.20. Participants were 33.98 years old on average (SD = 12.31) were 66.7% female. The sample consisted of 73% White, 9% Black/African-American, 7% Hispanic, 5% Asian, and 6% Other race participants.

Procedure and Measures

Emotion Manipulation. Participants were randomly assigned to receive a writing prompt eliciting personal anger, empathic anger, or a neutral emotional state. In this prompt, participants were asked to specify 3-5 things which (1) had happened to them to make them angry, (2) happened to another person or group of people to make them angry, or (3) were common items they bought at the grocery store. Participants were then asked to write for at least

[2] Although participants across these three regions were recruited, we did not ask about country of origin, so it was not possible to compare regional effects.

three minutes to elaborate their thoughts about these initial prompts. See Appendix A for a full description of each prompt.

State Affect. After completing the writing prompt, participants reported their current emotional state using items from the Discrete Emotions Questionnaire (Harmon-Jones, Bastian, & Harmon-Jones, 2016). The state affect items were 12 emotion-related adjectives from the DEQ reflecting anger (*angry, pissed off, in a rage, mad;* $\alpha = .94$*)* sadness (*lonely, sad, empty;* $\alpha = .86$*),* fear (*worried, panicked;* $\alpha = .83$*)* and happiness *(happy, calm;* $\alpha = .70$*)*; participants reported on a 1 (*not at all*) to 7 *(a great deal*) scale how strongly they currently felt each emotion.

Social Connectedness. Next, participants reported their current feelings of general connectedness from others using the Social Connection Scale (Lee & Robbins, 1995). This measure asked participants to rate statements such as "I feel disconnected from the world around me" on a 1 to 7 Likert scale (1 = *Agree*, 7 = *Disagree*). Inter-item reliability was high ($\alpha = .96$). Higher scores on this scale indicate lower social connectedness to others.

Behavioral Motivation List. Lastly, participants' motivation to engage in social activities (an indirect measure of social connection motivation) were measured using the Behavioral Motivation List (BML), a behavioral intentions measure developed by Fredrickson and Branigan (2005). In this open-ended measure, participants were asked to "List all the things you would like to do *right now."* Participants were asked to list at least five activities. Two raters blind to experimental condition identified the number of activities listed by each participant and categorized each behavior as social (involving social interactions or spending time with specific people, e.g. "go to a movie with friends); hostile (involving aggressive or angry confrontation, or displays of anger); or prosocial (involving displays of compassion or kindness or actions done

with the intent to help another person, even those unrelated to the anger prompt). The number of social, hostile, and prosocial actions were divided by the total number of activities listed to create a Social Behavior, Hostile Behavior, and Prosocial Behavior proportion for each participant.

Results

Multivariate Analysis of Outcomes

Participants were randomly assigned to recall and write about a memory evoking empathic anger (n = 40), personal anger (n = 55) or a neutral emotional state (n = 55)[3]. A one-way MANCOVA was conducted to assess the effect of emotion memory condition on state affect, social connectedness, and behavioral motivation while controlling for race, gender, and age. Box's M test indicated heterogeneity of the variance-covariance matrices (Box's M = 241.16, $p < .001$), so Pillai's trace was used as a more stringent test of the omnibus variance analysis. No covariates showed significant omnibus effects across condition ($p > .08$). The omnibus model showing the effect of condition was significant, $F(16, 274) = 4.57$, Pillai's trace = .421, $p < .001$, Wilks' lambda -1 = .397, suggesting that experimental condition accounted for 39.7% of the variance in outcome variables when controlling for demographics. Post-hoc pairwise contrasts with Bonferroni adjustments to confidence intervals were conducted to compare the specific effects of empathic anger (EA), personal anger (PA) and control (C) conditions, testing the hypothesis that empathic anger would be stronger than both the personal anger and control condition. In the pairwise analyses, PA was coded as 1, EA was coded as 2, and C was coded as 3.

State Anger

[3] The uneven sample size was due to an error in setting up the random condition assignment program in Qualtrics.

The experimental manipulation was successful in making participants feel angry, as participants among experimental conditions differed significantly ($p < .001$) with regard to state anger measured as a composite of three emotional state adjectives (angry, mad, in a rage, see Table 1a for univariate model statistics and condition means). Post-hoc contrasts indicated the empathic anger condition elicited greater state anger than the control group (*MDiff* = 2.40, $p < .001$). No difference in anger was found between the empathic and personal anger groups (*MDiff* = -.44, $p = .88$).

State Sadness, Fear, and Happiness

The experimental prompts also evoked significantly different levels of sadness, fear, and happiness (ps < .019, see Table 1a for means). Post-hoc contrasts indicated sadness was significantly greater in the empathic anger condition than the control condition (*MDiff* = .99, $p = .019$), but not between the personal anger and control conditions (*MDiff* = 0.55, $p = .30$). Reported fear was significantly lower in the control condition than the empathic anger condition (*MDiff* = 1.15, $p = .009$) but not the personal anger condition (*MDiff* = 0.76, $p = .01$). Reported happiness was significantly greater in the control condition than both the empathic anger condition (*MDiff* = -0.84, $p = .008$) and the personal anger conditions (*MDiff* = -0.92, $p = .007$). Together these findings indicate that empathic anger memories elicited greater anger and less happiness than a neutral memory, but also greater sadness and fear. Personal anger memories elicited greater anger and less happiness than neutral memories, but equal amounts of fear or sadness.

Social Connectedness

Participants' feelings of social connectedness differed significantly across conditions *(p* = .034; see Table 1a). Planned contrasts indicated that those recalling a memory evoking empathic anger felt significantly less connected to others (i.e., more disconnected) after the emotion induction task than those in the control condition (*MDiff* = .84; *p* = .038). Personal anger did not elicit significant differences in social connectedness compared to the control condition (*MDiff* = .53, *p* = .26) or the empathic anger condition (*MDiff* = -.37 *p* = .33). These findings indicate that empathic anger memories elicited more social disconnection from others, whereas personal anger was unrelated to social connectedness.

Behavioral Motivation

Relatedly, we also found that empathic anger elicited motivation to approach others, measured through the proportion of activities listed in the BML which were generally social in nature, or specifically hostile or prosocial in nature. Significant differences in the number of hostile and prosocial behaviors listed (but not social behaviors in general) were found among the three conditions (*p*s $\leq$ .023, see Table 1a). When controlling for demographics, the empathic anger condition predicted greater prosocial behavior motivation than the personal anger condition (*MDiff* = .084, *p* = .033), as well as the control condition, though this contrast was only trending toward significance (*MDiff* = .079, *p* = .055). The empathic anger condition predicted more hostile behaviors than the control condition (*MDiff* = .10, *p* < .008), but not the personal anger condition (*MDiff* = .06, *p* = .15). Surprisingly, the personal anger condition did not predict greater hostile motivation than the control condition (*MDiff* = .04, *p* = .60).

Hierarchical regression analyses with dummy-coded experimental conditions (with the CE condition as the reference) were also conducted to assess the effects of state anger and social connectedness on behavioral motivation over and above experimental condition. Each model

included the EA and PA dummy-coded variables in Block 1 and state anger and state sadness in Block 2 (see Table 2). Demographics were not controlled for to increase model parsimony given that no significant covariate effects were found in the MANCOVA.

The first analysis regressed predictors on social behavior motivation, or the proportion of all interpersonal activities that participants described in the BML after recalling their emotional memory. The first model was significant; $F(2, 146) = 4.27$, $p = .02$, $R^2 = .055$. The EA condition significantly predicted social behavior motivation ($\beta = .30$, $p = .001$), but the PA condition was not a significant predictor ($\beta = .15$, $p = .11$). State affect did not improve model fit when anger and sadness were added to the model, $R^2\Delta = .013$, $\Delta F(2, 144) = 1.02$, $p = .37$. All variables together significantly predicted social behavior motivation, $p = .016$. Neither anger ($\beta = -.12$, $p = .23$) nor sadness ($\beta = .11$, $p = .22$) significantly predicted the proportion of social activities in which participants reported wanting to engage.

I then regressed the dummy-coded condition predictors on prosocial motivation, or the proportion of activities described in the BML which specifically predicted helping another person. The first model including only dummy-coded PA and EA experimental conditions in block 1 was significant; $F(2, 147) = 5.06$, $p = .001$. Empathic anger recall ($\beta = .30$, $p = .004$) significantly predicted prosocial motivation, but personal anger recall did not ($\beta = .03$, $p = .74$). When state affect was entered into Block 2, it did not significantly improve the model fit; $R^2\Delta = .017$, $\Delta F(2, 145) = 1.39$, $p = .25$. All variables together significantly predicted prosocial motivation in the second model, $p = .001$. Neither anger ($\beta = .16$, $p = .11$) nor sadness ($\beta = -.10$, $p = .27$) significantly predicted prosocial motivation (see Table 2).

I lastly regressed predictors on hostile behavior motivation. The first model including PA and EA experimental conditions was significant; $F(2, 146) = 4.27$, $p = .02$. Empathic anger recall

(β = .27, p = .004) significantly predicted hostile motivation, and the effect of personal anger recall on hostile motivation was trending toward significance (β = .16, p = .08). When state affect was entered into Block 2, it significantly improved the model fit; $R^2\Delta$ = .088, $\Delta F(2, 144)$ = 7.43, p = .001. All variables together significantly predicted hostile motivation, $F(4, 144)$ = 6.03, $p < .001$, R^2 = .144. Anger positively predicted hostile motivation (β = .39, $p < .001$), whereas sadness negatively predicted hostility (β = -.18, p = .045).

Mediation Analyses

Lastly, mediation analyses using Hayes' PROCESS macro (model 4; 5,000 bootstraps) assessed whether the effects of personal or empathic anger on behavioral motivation were explained by state affect or social connectedness. The effect of empathic anger condition on prosocial behavior motivation was not mediated by state anger (indirect effect b = .03, SE = .003, p = .23) or sadness (indirect effect b = -.01, SE = .01, p = .49). However, state anger did significantly mediate the effect of empathic anger condition on hostile behavior motivation, (indirect effect b = .05, SE = .02, p = .04), while state sadness did not mediate this effect (b = -.01, SE = .01, p = .30). In addition, social connectedness did not mediate the effect of experimental condition on social activities (indirect effect $b < .001$, SE = .008, p = .91) or helping activities (indirect effect b = .006, SE = .007, p = .40).

These mediation analyses indicated that state affect (anger or sadness) by themselves are not enough to account for differences between personal and empathic anger on willingness to help, though they do predict willingness to punish.

Discussion

Study 1 indicated that recalling an incident eliciting personal anger elicits distinct emotional and motivational responses compared to recalling empathic anger. Although these two

types of memories evoke similar levels of state anger, memories of empathic anger predict greater motivation to both aggress against others (usually the perpetrator of harm) as well as help or connect with others. In addition, empathic anger memories also evoke feelings of social disconnection from others compared to personal anger or neutral memories. Moreover, state anger, but not sadness, mediated the effect of remembering an empathic anger memory on motivation to engage in hostile behaviors (compared to a control condition). Taken together, these findings suggest that empathic anger is associated with greater attention toward others and motivation to act for others' benefit.

In contrast with the hypothesized effect of empathic anger, sadness was a better predictor of feeling socially disconnected from others, whereas anger did not predict social disconnectedness. Additionally, sadness negatively predicted hostile motivation, replicating prior work suggesting that feelings of sadness and compassion may reduce hostile intent when witnessing unfair situations (Weng et al., 2015). Study 1 also found that changes in state affect or social connection were not enough to explain the effects of empathic or personal anger memories on prosocial motivation. This corroborates prior research indicating that the emotional experience of personal or empathic anger is difficult to distinguish other than through manipulating anger situations, as participants often report similar levels of self-reported anger in personal or empathic anger situations (Batson et al., 2007; 2009). This also suggests that specific goals accompanying personal or empathic anger (e.g., to look good to others, to feel satisfied, or to improve another's welfare) may be the more salient mechanisms of prosocial behavior.

So far, no research to date has explicitly examined the role of other-focused or self-focused goals in empathic or personal anger responses. However, some studies highlight the role of other-focused and self-focused emotions in predicting punishment and helping behavior.

Leliveld et al. (2012) found that participants high in trait empathic concern were more likely to give up their own compensation to help a third-party victim, whereas those low in trait empathic concern were more likely to punish a third-party offender. Similarly, Gummerum et al. (2016) found that recalling an incident of empathic anger or personal anger influenced later helping or punishment decisions in an unrelated event. Participants who witnessed another person being treated unfairly offered more of their own money to compensate the victim of unfairness if they had previously recalled empathic anger memory compared to those who recalled a personal-anger memory. Furthermore, Gummerum et al. (2016) found that this difference between personal and empathic anger was blunted when participants were induced with greater self-focus. This suggests that personal anger is associated with self-focused attention, and may also be predictive of self-focused goals, whereas empathic anger is likely associated with other-focused goals.

An additional question which was not addressed by Study 1 was whether empathic anger predicts costly altruistic behavior. Because empathic anger inherently involves a separate victim, helping and third-party punishment elicited by empathic anger could be a means to alleviate negative affect and distress or improve one's self-image (Chester & DeWall, 2017; Rothschild & Keefer, 2017). FeldmanHall et al. (2014) found that when participants were personally given an unfair allocation in an ultimatum, they would more likely opt for self-compensation over punishment. However when witnessing unfair allocation, participants were more likely to choose an option that both punished the offender and compensated the recipient, rather than only choosing to compensate the recipient. However, the FeldmanHall et al. (2014) findings may indicate a personal strategy to avoid retribution when one is the victim of unfair treatment, and may not indicate that empathic anger predicts altruistic motivation. Furthermore, some evidence

suggests that individuals are reticent to punish offenders who insult a third party victim unless the victim is someone the witness knows, or if there are social desirability demand characteristics (Pedersen et al., 2018). Though it has also been found that third party punishment is magnified by compassion for the victim (Pfattheicher et al, 2019) it is unclear to what extent individuals may choose to intervene in third party punishment scenarios which involve fairness norms.

To clarify these questions, an experimental online study (Study 2) was conducted to examine responses to empathic and personal unfairness in a controlled but realistic scenario in which both the victim and offender are unknown to the witness. Study 2 tested the extent to which empathic or personal anger-evoking scenarios would result in different levels of state anger, personal distress (including sadness), and compassion would evoke different tendencies of helping, punishing, or self-serving responses. Study 2 also directly examined the extent to which empathic and personal anger evoke self and other-focused goals, and the extent to which those goals acted as mediators of empathic and personal anger effects.

Study 2

Study 2 was conducted to examine the effects of situationally-evoked empathic or personal anger on decisions to help a third-party victim, punish an offender, help oneself, or avoid making a decision. In addition, Study 2 examined which goals were most likely to mediate these decisions. These goals were broadly grouped into self-focused goals (e.g., protect oneself, exacting retributive justice) and other-focused goals (protect others, adhering to moral standards).

Study 2 tested the following hypotheses:

H1. Empathic anger and personal anger will predict different responses to experiencing an unfair situation personally (personal anger condition) or witnessing third-party unfairness (empathic anger condition), such that:

a. Empathic anger will predict more third-party compensation than personal anger.

b. Personal anger will predict more third-party punishment than empathic anger.[4]

c. Personal anger will predict more self-compensation than empathic anger.

H2. Empathic anger and personal anger will be associated with different goal tendencies, such that:

a. Empathic anger will evoke stronger other-oriented (altruistic) goals.

b. Personal anger will evoke stronger self-oriented (egoistic) goals.

H3. The effects of empathic and personal anger on decisions in a modified third party punishment (MTPP) task will be mediated by goal type, such that:

[4] Hypothesis 1b (as well as Hypothesis 4 in Study 2) was updated from the original dissertation proposal in which I predicted that empathic anger would predict more third party punishment than personal anger. The update was made to reflect findings published after the proposal that empathic anger may not strongly predict third party punishment unless the victim is close to the witness or external incentives are present (Pedersen et al., 2018; Pfattheicher et al., 2019). The updated hypothesis was preregistered before data analyses were conducted.

a. The effect of anger condition on differences in third-party compensation will be mediated by salience of other-oriented goals.

b. The effect of anger condition on differences in third-party punishment will be mediated by salience of self-oriented goals.

c. The effect of anger condition on differences in self-compensation will be mediated by salience of self-focused goals.

Method

Design

Study 2 employed a between-subjects experimental design with two conditions (Empathic Anger and Personal Anger). Drawing from Study 1's finding that personal and empathic anger predict different levels of prosocial activity motivation at $d = .46$, a power analysis indicated that 150 participants would be adequate to detect a similar effect size (i.e., the difference between two independent samples) with 80% power and $\alpha = .05$. All study measures, power analyses, and hypotheses were preregistered at Open Science Framework and can be accessed at osf.io/t4kfz.

Participants

Three hundred and one adult participants were recruited from Amazon MTurk to participate in an online experiment for $2.00[5]. One hundred and ten participants were screened out for being likely bots or low-quality respondents or missing knowledge check items. An additional 50 participants were screened from analyses for indicating high suspicion of the

[5] The original proposal planned to pay $0.75 for this study, however it was found that the length of the study warranted a higher payment, as researchers have suggested paying a minimum of $0.10 per expected minute of participation (e.g., Goodman & Paolacci, 2017).

experimental manipulation (see Results section for full description of screening procedures). The remaining sample (N = 141) was diverse with regard to participant gender (48.3% women, 43.4% men, 8.4% prefer not to answer); race (62.2% White/European American, 17.5% Black/African American, 2.8% Hispanic/Latinx, 7.6% Asian-American, and 10.7% Other/Prefer not to answer); and age which ranged from 21-73 years old (M = 38.45, SD = 13.16). This final sample was slightly underpowered to detect a similar effect size as in Study 1.

Measures

Instruction Knowledge Check

Participants first read of set of instructions explaining the premise of the experiment (as explained in the 'Modified Third Party Punishment Task' section). After reading these initial instructions, participants were asked to complete a three-item knowledge check test identifying their knowledge of: a) whom they would be working with ("alone," "in a group," or "with a partner"); and b) the task they would be working on ("describe a set of photos," "write about my childhood memories," or "complete math problems"). Participants who made mistakes on both knowledge check items were removed from analyses for poor data quality.

Baseline Positive and Negative Affect

To control for individual differences in positive and negative affect entering the study, participants next responded to the short form of the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). Participants reported how strongly they currently felt a set of affective states with positive valence (e.g., "Alert") and negative valence (e.g., "Afraid") on a 1 (*Not at all*) to 5 (*Extremely*) scale.

Hypoegoic Orientations

Participants next completed two measures of hypoegoic traits, namely trait mindfulness and trait curiosity. These variables were included to be assessed as potential moderators or predictors of third-party helping or punishment in future exploratory analyses. Trait mindfulness was measured by the Mindful Attention and Awareness Scale (MAAS, Brown & Ryan, 2003). Items reflect the tendency for participants to engage in a receptive, nonjudgmental, and present-oriented state of attentiveness. Items are rated on a 1 (*Almost always*) to 6 (*Almost never*) scale (e.g., "I could be experiencing some emotion and not be conscious of it until some time later").

Trait curiosity was measured using the Five-Factor Trait Curiosity scale (FFCS, Kashdan et al., 2018). The FFCS includes five subscales of trait curiosity, including Joyous Exploration ("I find it fascinating to learn new information"); Deprivation Sensitivity ("I work relentlessly at problems that I feel must be solved); Stress Tolerance ("I cannot handle the stress that comes from entering uncertain situations"); Social Curiosity ("I like to learn about the habits of others"); and Thrill Seeking ("Risk-taking is exciting to me"). Participants rated the veracity of these statements on a 1 (*Does not describe me at all*) to 7 (*Describes me completely*) scale.

Modified Third-Party Punishment Task

To elicit personal or empathic anger in a novel manner, participants completed a modified third-party punishment ultimatum game (TPP; Fehr & Fishbacher, 2004). In the original TPP, a 'dictator' is given an endowment (e.g., $10) and is allowed to split the endowment between themselves and a 'recipient' (who usually must accept the offer, though this is sometimes modified). A third participant, the 'observer,' witnesses this allocation and is also given an endowment (e.g., $5) and has the option of punishing the dictator or compensating the recipient by spending this endowment (Fehr & Fishbacher, 2004).

The modified version of the TPP (MTPP) created for these set of studies similarly elicited a social dilemma in which a fairness norm was violated, and participants had the option of punishing the offender, compensating the victim, or acting in one's own interest. In contrast to the TPP, the MTPP simulates a fairness norm related to feelings of frustration, rather than monetary allotments, as the means of evoking fairness violation social dilemmas. This allowed the examination of the role of personal and empathic anger elicited by frustration along with fairness violation rather than redistributive justice primarily in response to monetary fairness violations.

In the MTPP, participants completed the experiment believing they were in a group study with two other participants. The ostensible purpose of the study was to examine how group work and communication might change when people interact online compared with face-to-face settings. Participants were informed that they would work simultaneously with two other MTurk workers through an online workspace to complete a group project, which would include a set of tasks that could be distributed evenly among the group members. In this version of the MTPP, the group project was to write descriptions for a set of consumer item photos (e.g., flash drives, desks).

Before moving to the workspace and beginning the group project, one group member was chosen (ostensibly) at random to delegate the group task, and was labeled 'Group Member A.' The remaining group members were labeled 'Group Member B' and 'Group Member C.' Group Member A was directed (in view of Group Members B and C) to delegate how many individual tasks each group member had to complete. Group Members B and C were directed to follow the delegation of Group Member A and complete the number of tasks Group Member A assigned.

To control the MTPP scenarios as much as possible, in actuality participants completed the study with computerized group members, and participants were informed of this deception at the end of the study in the debrief. Participants were told to provide a nickname that their group members would see. Across all conditions, participants were assigned to be Group Member B. Group Member A (the delegator) was always named 'Alex' and Group Member C (the third-party victim) was always named 'Taylor.'[6] Participants entered in their own name at the beginning of the study, and their name was included in subsequent directions alongside the other group members' names to maximize the believability of the manipulation.

Participants were randomly assigned to receive the *Personal Anger* scenario condition or the *Empathic Anger* scenario condition. In the Personal Anger condition, the participant (Group Member B) was assigned the majority of the photo tasks the group was meant to complete; in the Empathic Anger condition, Group Member C (Taylor) was assigned the majority of photos to complete. In both conditions, Group Member A (Alex) did not assign themselves any photos to complete. The rounds were designed so that participants would always have to complete 10 photos for the first project round; the third party victim Group Member C (Taylor) would complete half as many tasks as the participant in the Personal Anger condition and twice as many tasks in the Empathic Anger condition. Specifically, the task assignment breakdown for the first project round was:

[6] The names Alex and Taylor were chosen through a pilot testing procedure. A group of research assistants generated six gender-neutral names of people they might meet in class. The names where submitted to the group again, and raters (N = 8) indicated how masculine and feminine each name seemed on a 1 (not at all) to 7 (completely) scale. A paired samples t-test of the difference in masculine and feminine name ratings indicated that Alex (p = .785) and Taylor (p = .402) were the most androgynous of all the names in the list.

1) Personal Anger: Total number of photos was 15. Group Member B (participant) was assigned 10 photos to describe; Group Member C (Taylor) was assigned five photos to describe; Group Member A (Alex) was assigned 0 photos to describe.
2) Empathic Anger: Total number of photos was 30. Group Member B (participant) was assigned 10 photos to describe; Group Member C (Taylor) was assigned 20 photos to describe; Group Member A (Alex) was assigned 0 photos to describe.

Participants were then asked to report their perceptions of the fairness of each task and have the opportunity to write a message to the other group members. This message was displayed on the following page to all the group members, along with pre-recorded messages from the other group members. Participants were then asked to complete the set of ten photos to increase realism of the study as well as evoke more salient anger in response to the task assignment.

After completing the first task round, participants were informed that Group Member A must also delegate the second project round, which includes 40 photos to rate (instead of 15/30 as in the previous round). In both conditions, participants were shown that Group Member A (Alex) had assigned themselves 0 photo tasks once again, and that Group Member B (the participant) and Group Member C (Taylor) had both been assigned 20 photo tasks to complete. After witnessing this second unfair assignment, participants reported their state anger, distress, and compassion.

Finally, participants were informed they had the option to moderate the second project round assignments. Participants first were asked whether they wanted to change the task assignment for Group Member A (Alex), Group Member B (themselves), Group Member C (Taylor), or none of the group members. If participants indicated they wished to change the task

assignment for one of the group members, they then were asked how many photos (out of 20) that group member should now have to complete for the assignment. Participants were told that regardless of their choice, they would be able to complete the final project independently from the other group members and would not have to wait for them to finish to proceed.

State Affective Responses

After Round 1 of the MTPP task and after seeing the allocation choice for Round 2, participants reported their empathic and personal anger, empathic concern, personal distress, and positive affect immediately before making the Round 2 reallocation decision. All emotions were rated from 1 (*Not at all*) to 7 (*Extremely*).

Empathic Anger. The State Empathic Anger Scale (SEAS; Vitaglione & Barnett, 2003) measured anger felt on behalf of another person, and included eight emotional adjectives (mad, angry, furious, resentful, irritated, enraged, aggravated, outraged).

Empathic Concern and Distress. Empathic concern and distress were measured through Batson's Emotional Adjective Scale (BEAS; Batson et al., 1987), consisting of 14 emotional adjectives measuring other-oriented concern (sympathetic, warm, softhearted, moved, compassionate, tender) and self-focused personal distress (troubled, upset, disturbed, grieved, alarmed, perturbed, distressed).

Positive Emotions. Positive emotional responses were measured with the happiness items of the Discrete Emotions Questionnaire (DEQ; Harmon-Jones et al., 2016).

Reallocation Decision

Next, participants were informed that they had been randomly chosen to be the moderator for the task round, and were given the option to reallocate photos for themselves (self-compensation), the third player (third party helping), or the group leader (punishment). Participants also had the opportunity to make no decision and leave the assignments as they were (avoidance/escape). Participants were informed that all group members would complete their final task separately, so they would not have to wait for the other members to complete their assignment before continuing with the study. Participants indicated which group member they wished to reallocate tasks for, as well as how many photo tasks they wished that group member to have to complete in the final task round, choosing an option from 0 – 20 photos.

Decisional Goals

To assess participants' motivational goals when choosing their helping/punishment/escape decision, participants then completed the Goals Following Interpersonal Transgressions scale (GFIT; Rasmussen & Boon, 2018). The full GFIT scale includes 12 goal dimensions with three items measuring each dimension. Nine of these dimensions were included in the study: Power (e.g., "I wanted to maintain control over the situation"), Morality (e.g., "I wanted to do the right thing", Protecting Others (e.g., "I wanted to make sure group members were treated fairly"), Self-Protection ("I wanted to keep myself away from a potentially destructive situation"), Emotional Well-Being (e.g., "I wanted to feel good about the situation"), Justice (e.g., "I wanted to punish the group delegator", Education ("I wanted to teach the group delegator the proper way to behave in a group") and Avoidance (e.g., "I wanted to avoid a confrontation"). Participants rated on a 1 (*not at all strongly*) to 7 (*very strongly*) scale the extent to which they held each goal in making their decision.

To identify which goals were likely to be more self-oriented vs. other-oriented, I examined convergent validity characteristics of each GFIT dimension described by Rasmussen and Boone (2018), specifically how each goal dimension correlated with Dark Triad personality dimensions as well as responses to the Transgression-Related Interpersonal Motivations scale, measuring benevolent forgiveness and revenge-focused motivations following a transgression. Goal dimensions which Rasmussen and Boone (2018) reported as correlating positively with Dark Triad personality traits (Machiavellianism, psychopathy, and narcissism) and revenge motivation, and which correlated negatively with benevolent forgiveness motivation, were considered to be characterized as primarily self-oriented goals. As all three Dark Triad profiles are characterized by extreme self-interested behavior (Moshagen et al., 2018), I classified GFIT dimensions which correlated positively with Dark Triad personality traits as being largely self-oriented. In addition, I considered to what extent GFIT dimensions were correlated with revenge or benevolent forgiveness motivations following an interpersonal transgression; GFIT dimensions which correlated positively with revenge and negatively with forgiveness were considered self-oriented.

Given these considerations, the Power, Self-Protection, and Punishment/Justice dimensions fit met the criteria for self-oriented goals, whereas the Morality and Protection of Others dimensions fit the criteria for mainly other-focused goals. The Emotional Well Being and Education goal dimensions, however, were more difficult to classify. I initially theorized Emotional Well Being and Education goals to be self-oriented and other-oriented respectively. When assessing GFIT convergent validity results however, Emotional Well Being goals were negatively associated with Machiavellianism, psychopathy, and revenge motivation, but positively associated with forgiveness. In contrast, Educational goals were positively correlated

with Machiavellianism and Narcissism, while also weakly positively correlated with forgiveness motivation (Rasmussen & Boone, 2018). For these reasons, Emotional Well Being and Educational goals were considered ambivalent: potentially both self and other-oriented.

Additional Trait Measures

Finally, participants completed a questionnaire including a number of trait measures. These measures will be assessed after the primary measures of interest so as to not prime participants with concepts of anger or empathy.

Trait Empathic Anger. Trait empathic anger is the extent to which participants tend to feel empathic anger in their daily lives. Trait empathic anger was measured using the Trait Empathic Anger Scale (TEAS; Vitaglione & Barnett, 2003). The TEAS is a seven-item Likert-scale ranging from 1 (*Does Not Describe Me Very Well*) to 5 (*Describes Me Very Well*); e.g. "I feel angry for other people when they have been victimized by others."

Trait Cognitive and Affective Empathy. Trait empathy was measured using the Questionnaire Measure for Cognitive and Affective Empathy (Reniers et al., 2011). This questionnaire measures four dimensions of cognitive empathy on a 1 (*Strongly disagree*) to 4 (*Strongly agree*) scale: Perspective taking (e.g., "I can easily tell if someone else wants to enter a conversation"), Online simulation (e.g., "I try to look at everybody's side of a disagreement before I make my decision"), Emotion Contagion (e.g., "I am inclined to get nervous when others around me seem to be nervous"), and Proximal Responsivity (e.g., "I often get emotionally involved with my friends' problems"). A fifth subscale, Peripheral Responsivity, was not included in these studies.

Dispositional Aggression. The dispositional tendency to get angry, become hostile, and engage in verbal or physical aggression was measured with the Brief Aggression Questionnaire

(Webster et al., 2015). This measure asks participants to report how they would describe themselves on a 1 (*Does not describe me at all*) to 5 *(Describes me very well*) scale. It includes four subscales with three items in each scale, including Physical Aggression (e.g., "Given enough provocation, I may hit another person"), Verbal Aggression (e.g., "I tell my friends openly when I disagree with them"), Anger (e.g., "I have trouble controlling my temper"), and Hostility (e.g., "Other people always seem to get the breaks").

Need to Belong. The dispositional need to belong to a superordinate group and feel social support was measured by the Need to Belong Scale (Leary, Kelly, Cottrell, & Schreindorfer, 2013). The NTB asks participants to report on a 1 (*strongly disagree*) to 5 *(strongly agree)* scale to what extent they generally are distressed by social exclusion or desire social connection (e.g., "If other people don't seem to accept me, I don't let it bother me").

Sadistic Impulses. Participants' tendencies to want to hurt others in everyday life was measured by the Short Sadistic Impulse Scale (SSIS, O'Meara et al., 2011). The scale is rated on a 1 (*Strongly disagree*) to 7 (*Strongly agree*) scale (e.g., "Hurting people would be exciting").

Suspicion Check. In order to conservatively assess whether participants were suspicious of their partners being computerized, I included a series of standardized suspicion check questions (Sunami et al., 2018):

1) "During the study, did you wonder about the purpose of the study or procedures? If so, what did you think the study was about?"
2) "During the study, did any of the procedures or activities seem odd or surprising to you?"
3) "During the study, did you ever think that you were being given false information?"

Participants were asked to give free response answers if applicable to the first two questions, and two respond "Yes" or "No" to the third question. If participants responded "Yes" to question 3, they were additionally asked:

4a) "What information do you think was false?"

4b) "What made you believe that the information was false?"

4c) "At what point in the study did you start to think the information was false?"

4d) "On a scale of 0 (completely guessing) to 100 (completely certain), how certain are you that this info was false?"

Participants were asked to report free response answers to items 4a through 4c and identify a number from 0-100 for item 4d. Participants were screened from analyses if they reported a suspicion level of 50 or greater that their partners were not real MTurk workers. The logic behind this screening procedure was that this suspicion item fundamentally asked participants whether they believed there was deception in the study or not. Ostensibly, a response of 49% certainty or lower suggests that participants were more uncertain than positively certain of the deception being present. This screening procedure opted to find a balance between maximizing statistical power and minimizing measurement error due to lack of participants' belief in the situation.

Demographics. Participants lastly reported their gender, race, and age.

Procedure

Participants volunteered to complete the study through Amazon MTurk. The study description on Mturk described the study as examining "how workplace communications and decisions differ when 1) people work in anonymous groups vs. groups they know personally, and 2) when people work face-to-face vs. over the internet." Participants were further informed that

they would be partnered with two other MTurk workers online to complete a group project, that they would complete a set of tasks along with the other group members in real time.

After participants indicated their informed consent, they were first shown a set of instructions for the study, then completed the measures in a Qualtrics survey. Finally, participants were fully debriefed about the purpose of the study, and that they would receive full compensation no matter what their choices were during the study session.

Results

Data Quality Screening

Given that data quality on Amazon Mturk has decreased since the summer of 2018 (see Chmielewski & Kucker, 2019), I employed prescreening measures in Qualtrics to disallow participation from non-US VPN sources (see Winter et al., 2019), and screened the dataset prior to analyses to identify low-quality responses such as those from automated "bots" or Mturk "farmers" (see Chmielewski & Kucker, 2019). Specifically, I examined participants' free-written responses to the MTPP task as well as participants' responses on the suspicion check measure at the end of the study. Participants who wrote responses that were nonsensical (e.g., writing "GOOD STUDY" repetitively in areas that were asking about suspicion), or were clearly copied and pasted from other websites, were screened out as potential "bots" or "farmers" (Chmielewski & Kucker, 2019). One hundred and ten participants were identified as likely bots/farmers and were removed from the dataset.

The remaining 191 participants were screened for suspicion of the deceptive experimental manipulation. Forty-two participants were at least 50% suspicious that their group

partners were computerized and were also removed from the final analyses.[7] Lastly, an additional eight participants were removed for failing both of the knowledge check questions. The remaining sample of 141 participants were included in the final analyses.

Descriptive Statistics

Table 2a displays bivariate correlations among study variables. Table 2b displays means, standard deviations, and inter-item reliability of all study measures.

Manipulation Check

Before conducting hypothesis tests, I assessed two manipulation checks making sure that participants reported greater unfairness for the third-party victim compared to themselves in the Empathic Anger condition, and vice-versa in the Personal Anger condition.

As expected, participants in the Empathic Anger (EA) condition considered Group Member C (Third Party Victim)'s task assignment to be less fair (M = 2.92, SD = 1.86) than their own task assignment (M = 4.68, SD = 1.71), $t(73) = 8.34$, $p < .001$. Group Member C's assignment was considered equally fair as Group Member A (the delegator)'s assignment (M = 3.03, SD = 2.17), $t(73) = 0.76$, $p = .449$. Also as expected, in the Personal Anger (PA) condition, participants perceived their task assignment to be less fair (M = 2.48, SD = 1.87) compared to Group Member C (the third party victim)'s task assignment (M = 3.42, SD = 1.92), $t(73) = 3.45$, $p = .001$. Participants perceived Group Member A (the delegator)'s assignment to be equally unfair as their own task assignment, $t(73) = -0.22$, $p = .827$. The delegator's task assignment was

[7] The choice to use 50% suspicion as the cutoff was made a priori to any analyses. However to assess the potential effects of suspicion on participants' outcomes I examined whether suspicion level predicted participants' choice to reallocate, or moderated the effect of condition on reallocation choice. No significant findings occurred except that level of suspicion was directly associated with greater likelihood of MTurk workers choosing to reallocate tasks for themselves, though to a marginally significant extent (95% CI for B = [-.001, .10]. To maximize the power of the study, the 50% suspicion threshold was maintained for the main analyses.

considered equally unfair in both the Empathic Anger and Personal Anger conditions, $t(139) = 1.65$, $p = .102$. In sum, these manipulation checks indicate that participants who witnessed a third party fairness violation perceived the victim to have been treated the most unfairly, whereas participants who experienced a personal fairness violation perceived their own assignment to be the most unfair. The task delegator was considered equally unfair in both conditions.

As an additional note, the experimental conditions did not result in significant differences in self-reported trait measures, with the exception of the trait empathic anger scale (TEAS). Participants in the EA condition reported slightly greater trait empathic anger than participants in the PA condition, though this relationship was nonsignificant, $r(139) = -.17$, $p = .051$ (see Table 2a).

Personal and Empathic Anger Effects on Responses to Unfairness

I next tested Hypotheses 1a, 1b, and 1c: empathic anger would predict more third-party compensation than personal anger, personal anger would predict more third-party punishment than empathic anger, and personal anger would predict more self-compensation than empathic anger. To test these predictions, I first examined whether the two anger-evoking scenarios resulted in different patterns of emotional responses. To establish equivalency of experimental conditions, the two conditions ideally should evoke similar levels of anger, but different levels of compassion. As some of these emotional states were expected to be correlated, I used a MANCOVA controlling for baseline positive and negative to assess these relationships.

The multivariate effect of Anger condition across all state affect responses when controlling for baseline positive and negative affect was not statistically significant, $F(3, 127) = 0.52$, $p = .667$, partial $\eta^2 = .012$. An assessment of the univariate effects of Anger condition found no significant difference in state anger ($p = .239$), state personal distress (.436), or state

compassion (p = .819) between the Empathic Anger and Personal Anger conditions. Against expectations, the experimental manipulation of empathic anger failed to increase compassionate concern for the victim. Notably, state anger and empathic concern were uncorrelated in both the Personal Anger (r[61] = -.22, p = .081) and Empathic Anger (r[68] = -.10, p = .435) conditions.

I next examined whether experimental Anger condition predicted differences in the odds of participants choosing to reallocate tasks for the leader, the third-party victim, themselves, or to avoid/escape the situation. First, I examined frequencies of the categorical outcomes and establish whether any significant differences emerged. Similar patterns emerged for both conditions. The most frequent choice was to punish the delegator (PA: 60.9%, EA: 50.0%), followed by reallocating their own task amount (PA: 38.1%, EA: 45.7%); reallocating tasks for the other group member (PA: 4.7%, EA: 2.9%) and making no decision (PA: 1.4%, EA: 4.7%) were equally infrequent as participant decisions (see Figure 2a).

To establish whether there was any significant effect of Anger condition, I conducted a multinomial regression to test whether the odds of a participant choosing any of the decisional outcomes differed between the Empathic Anger and Personal Anger conditions, when controlling for baseline positive and negative affect. The likelihood ratio test of the omnibus effect of experimental condition was not significant, $-2LL$ = 213.23, $\chi 2$ = 5.16, p = .16, indicating that none of the outcomes was likely to be significantly influenced by experimental condition. When assessing each outcome individually, this pattern was borne out. No differences were found between anger conditions in the odds of participants choosing to reallocate tasks for the delegator (B = 1.18, p = .325), themselves (B = 1.82, p = .134), or the third party victim (B = 0.70, p = .637) compared to choosing the avoidance/escape option. However, when assessing Hypothesis 1 was therefore not supported.

I then examined whether Anger condition predicted differences in the number of photos participants chose to reallocate within each decision arm. A set of ANCOVAs controlling for baseline positive and negative affect were conducted to compare number of photos reallocated between conditions, across each decision category. Multiple ANCOVAs were used rather than a MANOVA because the rates of photo allocation across decision arms should be independent of each other. Among participants who chose to reallocate tasks for the leader, the EA condition (n = 35) chose to reallocate a similar number of tasks (M = 17.43, SD = 5.85) as those in the PA condition (n = 39, M = 18.85, SD = 3.61), $F(1, 70) = 0.97$, $p = .328$, partial $\eta^2 = .014$. Similarly, no difference in task allocations was found among participants who chose to reallocate tasks for themselves between the EA condition (n = 32, M = 5.62, SD = 8.17) and the PA condition (n = 19, M = 1.53, SD = 3.23), $F(1, 51) = 2.75$, $p = .104$, partial $\eta^2 = .055$). Lastly, no difference in task allocations was found among participants who chose to reallocate tasks for the third party victim between the EA condition (n = 2, M = 5.00, SD = 7.07) and the PA condition (n = 3, M = 9.33, SD = 4.04), $F(1, 5) = 9.45$, $p = .200$, partial $\eta^2 = .904$). These findings indicated evidence against Hypothesis 1.

Personal and Empathic Anger Effects on Transgression-Related Goals

Lastly, I examined whether personal and empathic anger might predict different types of motivational goals being evoked. Although the hypothesized effect of experimental condition on reallocation choice was not significant, it may be that empathic anger and personal anger result in similar decisional outcomes but through different motivational pathways. To assess this, I conducted a MANCOVA assessing the difference in motivational goal salience between the empathic anger and personal anger conditions while controlling for baseline positive and

negative affect. A MANCOVA was used because many of the decisional goals were significantly intercorrelated (see Table 2a for correlations).

The omnibus effect of experimental condition across decisional goals was statistically significant, $F(8, 122) = 2.29$, $p = .025$, indicating that one or more of the decisional goals differed between the experimental conditions. Levene's test indicated homogeneity of variances across all outcome groups (ps > .22). When assessing each decision goal separately, the only significant difference found was in Power-related motivations, with individuals witnessing a personal anger scenario reporting higher Power goals ($M = 4.93$, $SD = 1.75$) than those in the empathic anger condition ($M = 4.23$, $SD = 1.73$), $F(1, 129) = 10.48$, $p = .002$, partial $\eta^2 = .075$. No other statistically significant differences in motivational goals emerged (ps > .17). These results indicate weak support for Hypothesis 2.

Exploratory Analyses: State Anger and Goal Salience

Because no significant differences between the Anger conditions were found for prosocial responses or salience interpersonal goals, I did not test Hypothesis 3. However, as an exploratory analysis I examined whether state empathic or personal anger might evoke different goals and reallocation decisions. Specifically, I examined the relationship between state anger in response to the unfair task allocations and a) decisional goals, b) reallocation decision, and reallocation amount. I also examined whether personal or empathic anger condition moderated these relationships.

State anger was positively associated with all transgression-related interpersonal goals. To examine the relationship between state anger and goal salience, and the potential qualifying effect of personal or third-party unfairness scenario, I conducted a set of moderation analyses

using Hayes' PROCESS macro v3.4 (model 1). Anger condition was found to moderate the relationship between state anger and salience of the Justice/Punishment goal, $F(1, 126) = 4.14$, interaction $B = -.33$, 95% CI [-.65, -.09], $R^2\Delta = .022$, $p = .044$. Participants who witnessed a third-party unfairness scenario showed a stronger positive relationship between state anger and motives to re-establish justice and punish the group delegator ($B = .69$, $p < .001$, 95% CI [.48, .90]) compared to participants who witnessed a personally unfair scenario ($B = .36$, $p = .004$, 95% CI [.12, .60], see Figure 2c). Similarly, experimental condition moderated the relationship between state anger and salience of the Education goal, which focused on desire to change the behavior of group members who acted unfairly, $F(1, 126) = 7.66$, interaction $B = -.36$, 95% CI [-.61, -.10], $R^2\Delta = 04.$, $p = .006$. Participants who witnessed a third-party unfairness scenario showed a significant positive relationship between state anger and motives to re-establish justice and punish the group delegator ($B = .53$, $p < .001$, 95% CI [.37, .70]), whereas state anger and Educational goal salience were not significantly related among participants who witnessed a personally unfair scenario ($B = .18$, $p = .068$, 95% CI [-.01, .37], see Figure 2d). However, anger condition did not significantly moderate the relationship between anger and Power goal salience (interaction $B = -.03$, $p = .831$); Morality goal salience (interaction $B = -.14$, $p = .389$); Protect Others goal salience (interaction $B = -.08$, $p = .596$); Protect Self goal salience (interaction $B = -.10$, $p = .462$); Emotional Well-Being goal salience (interaction $B = -.09$, $p = .463$); or Avoidance goal salience (interaction $B = -.04$, $p = .790$).

Discussion

Study 2 attempted to evoke empathic anger and personal anger in through scenario of unfair work distribution, in which participants witnessed unfair treatment of a third party (Empathic Anger condition), or were personally treated unfairly (Personal Anger condition), as

well as examine how empathic or personal anger predict willingness to help a partner, punish an unfair offender, help oneself, or avoid engaging in the situation. Although participants did perceive the Empathic and Personal Anger scenarios to be most unfair toward their group partner and themselves respectively, witnessing third party unfairness failed to elicit the expected increases to empathic concern or willingness to help the third-party victim. Rather, participants chose help, punish, self-compensate, and escape the situation at similar rates in both experimental scenario conditions.

In addition, participants witnessing personally-focused unfairness and third-party unfairness chose similar amounts of task redistribution. These task distributions tended to follow a pattern of re-establishing fair amounts for the group delegator and the group partner, whereas participants tended to reallocate their own task amount to be close to zero, when they chose to self-compensate. When participants chose to reallocate tasks for the leader, the average task reallocation in both conditions was close to 20 photos, the same task amount assigned to the participant and the other group member. Very few participants chose to reallocate tasks for the other group member in both conditions, but of these few who chose to help, those in the Personal Anger condition chose to reallocate their partner to a mid-range amount of tasks (5 - 13) whereas those in the Empathic Anger condition chose to reallocate a low number of tasks (5 - 6). These findings, though in contrast to my original hypotheses, do align with research showing that when individuals are given an unfair monetary offer, they are motivated to re-establish fairness through self-compensation (FeldmanHall et al., 2014). However, FeldmanHall et al. (2014) also found that participants opted to self-compensate more often than punish when they were personally offended, whereas participants in Study 2 study opted to punish the offender more often than self-compensate even when they were the primary recipient of the unfair offer. What may be the

explanatory factor in this situation is that in the MTPP, both the participant and the second group member were treated unfairly in both scenarios. Only the relative amount of unfairness which was manipulated. Therefore, these findings do support the theory that when another individual is in some way treated unfairly, participant transgression responses may shift to more punitive measures even when they have been more personally harmed than the third-party victim. Furthermore, these findings reflect a one-shot decision, which may change over time if participants were given multiple options to reallocate (e.g., FeldmanHall et al., 2014, Lotz et al., 2011).

Study 2 also did not find significant difference in the salience of transgression-related interpersonal goals, contrary to expectations. State anger in both the Personal Anger and Empathic Anger conditions was positively associated with all goal types (including Avoidance), suggesting state anger motivated both approach and avoidance-oriented goals, as well as both other-oriented and self-oriented goals. One interesting exploratory finding was that this relationship between state anger and goal salience was moderated by experimental condition for two goals: Education (i.e., motivation to change group members' behavior in the future) and Justice (motivation to establish justice and punish the delegator). Participants who were personally treated unfairly in the PA condition reported salient Education and Justice goals regardless of their self-reported anger, whereas those who witnessed third-party unfairness in the EA condition showed the typical relationship between state anger and Education and Justice goal salience. This finding aligns with research that individuals are very attuned to personally-experienced unfairness, and when personally angered, are more motivated to punish than compensate a partner (Batson et al., 2007; Gummerum et al., 2016).

These results also align with research suggesting that emotional closeness to the victim is an important mechanism for promoting both empathic anger for the third-party victim, and motivation to help the victim rather than punish an offender or self-compensate/escape. Study 2's findings are particularly similar to those of Van Prooijen et al. (2010) who found that across three studies, participants who read about criminal cases supported more and harsher retribution when framed as punishment for the offender rather than compensation for the victim. However, participants who were primed with empathy for the victim supported more victim compensation than offender punishment (Van Prooijen et al., 2010). More recently, laboratory evidence of responses to unfair treatment suggest that participants are reticent to punish offenders of third party injustice except when the victim was the participants' friend (Pedersen et al., 2018). Given the low level of reported empathic concern in both anger conditions, it is likely that participants did not feel close enough to the third party victim to be motivated to help them.

One notable but unexpected finding was that the Personal and Empathic anger conditions resulted in significantly different levels of trait empathic anger (TEAS), such that those in the Empathic Anger condition reported higher trait empathic anger than those in the Personal Anger condition. This finding could be explained by a few factors. Participants could perhaps have been primed to remember situations when they had felt empathic anger, making their self-perceptions of that trait more salient and available (Higgins & Tykocinski, 1992). Alternatively, this could also indicate subject effects in response to demand characteristics of the study, prompting participants to report more socially desirable traits after having witnessed unfair treatment of a third party.

A major limitation of Study 2, and potential contributor to the lack of closeness to the third-party victim, was the online setting of the MTPP. In Study 3, I attempted to replicate the

findings of Study 1 in an in-person setting, as well as examine the additional factor of decision cost. Although the majority of participants in Study 2 opted to punish the group delegator when witnessing a group member be treated unfairly, Study 3 examined whether this punishment motivation is altruistic. If empathic concern does promote altruistic punishment (and/or helping), participants would be equally likely to help or punish in a high decision cost scenario as when decision cost is low. However, if third party punishment is motivated by self-focused concerns, participants would be expected to reallocate for themselves or avoid making a costly decision altogether.

Study 3

Study 3 was conducted to test the primary hypothesis that empathic anger would lead to greater helping of a third-party victim of unfairness, and that personal anger would lead to greater punishment of a fairness offender, in a more controlled laboratory environment. In Study 3, participants completed the MTPP task in an in-person laboratory setting with additional characteristics designed to enhance the mundane realism of the anger evoking scenarios. In addition, Study 3 examined whether empathic and/or personal anger evoke altruistic decisions to help a third-party victim or punish the fairness offender by comparing the effect of high or low personal of making a reallocation decision. Cost manipulation was employed by adding a "payment" aspect to participant decisions. High-cost payments consisted of SONA credits (important contributions to an introduction to psychology grade), whereas low-cost payments consisted of raffle ticket entries for a separate prize above and beyond SONA credit compensation. SONA credits were expected to be perceived as more valuable than raffle tickets, as participants (undergraduate students enrolled in Introduction to Psychology) must obtain a certain number of credits in order to pass their Introduction to Psychology class. If empathic anger predicts similar levels of helping, punishment, and other-focused goals in the high and low-cost conditions, this would be direct evidence of altruism.

Study 3 included the same hypotheses as Study 2 as well as an additional hypothesis and research question:

H4. High decision cost will decrease willingness to help a victim of unfairness and punish a perpetrator of unfairness across both personal anger and empathic anger conditions.

RQ: Will the effects of decision cost be moderated by personal or empathic anger scenarios? If so, to what extent cost will influence the choice to help, punish, self-compensate, or avoid making a decision?

Method

Design

Study 3 employed a 2 (Empathic vs. Personal Anger) x 2 (High vs. Low Cost) factorial design. Using the same d = .46 effect size as Study 2, a power analysis indicated that 211 participants would be adequate to detect main or interaction effect sizes of similar magnitude with 80% power and $\alpha = .05$ using ANCOVA (controlling for time of semester and baseline affect).

Participants

Participants (N = 284) in Study 2 were undergraduate students at Virginia Commonwealth University taking Introduction to Psychology who participated for course credit (1 SONA credit). Participants were also entered to win a raffle for one of 5 $20 Amazon.com gift cards. The sample included predominantly women (71.7% women, 26.9% men, 1.4% refused to answer) and young adults aged 18 – 44 years old (M = 18.87, SD = 2.14). The sample was diverse with regard to race and ethnicity (30.6% White/European American, 27.8% Black/African American, 13% Hispanic/Latinx, 14.8% Asian/Asian American, 6% Middle Eastern/North African, and 6% Other race or multiracial).

Procedure

Participants in Study 3 were recruited to a laboratory experiment in a Psychology department building. Participants were recruited in groups of three when possible to maximize the experimental realism of the group task, however, to control for feelings of closeness or knowing the other group members, participants were greeted individually by research assistants, worked in separate lab rooms not within view of each other, and were brought to their rooms in such a way to avoid them interacting with each other.

Before beginning the study, participants were reminded that they would be receiving one SONA credit for participating, but also would receive 20 raffle entries to a drawing to win one of 5 $20 Amazon gift cards. Participants were then told the study's cover story, that they would be working with their group partners through an online system in order to test the differences of group work in an online setting compared to a face to face setting. To maximize the realism of the group partner deception, the research assistant then either made a fake phone call or conferred with the other research assistants present to coordinate the start time of the study. Participants in Study 3 then completed the same measures as Study 2, with the addition of measures relating to the cost of the reallocation.

Measures

Baseline Positive and Negative Affect

Participants completed the PANAS as a measure of baseline positive and negative affect.

Hypoegoic Traits

Participants next completed the Mindful Attention and Awareness Scale (Brown & Ryan, 2003) and Five Facet Curiosity Scale (Kashdan et al., 2018).

Modified Third-Party Punishment Task

Participants read the instructions for the MTPP, with wording changed to reflect their participation with other VCU students rather than MTurk workers. They responded the same knowledge check quiz indicating they understand the instructions as described in Study 2. Participants then entered the nickname they wished to be called in the study.

Empathic/Personal Anger Condition. Participants were randomly assigned to receive the Personal Anger or Empathic Anger condition and completed the MTPP task as described in Study 2.

Empathic Emotions. After completing the first round of tasks and seeing the second round allocation, participants reported their state anger, empathic concern, personal distress, and positive affect in response to the unfair allocation.

Reallocation Decision and Cost. After seeing the Round 2 allocation, participants again had the option to reallocate photos for themselves (self-compensation), the third player (third party helping), or the group leader (punishment). At the beginning of the session, participants were randomly assigned to a high-cost or low-cost experimental condition. In both conditions, participants were informed that their decision payment would be taken from their final compensation. In actuality, participants received the full compensation amount at the end of the study regardless of decision. Specifically:

1) In the high-cost condition, participants were informed they could pay for photo reallocation with SONA credit, with each photo costing .05 SONA credits to reallocate. Participants could pay between 0 and 1 credit to reallocate 0 to 20 photos respectively.

2) In the low-cost condition, participants were informed they could pay for photo reallocation with entries to the gift card raffle. They were told that each participant received 20 raffle ticket entries, and they could pay between 0 and 20 entries to reallocate photos, with one raffle entry being equal to one photo reallocation.

Behavioral Goals

Participants reported their goals for their reallocation decision on the GFIT scale, indicating the extent to which they considered self-focused or other-focused goals when making their reallocation decision. The same GFIT dimensions were included in Study 2 as Study 2.

Additional Trait Measures

Participants reported trait measures of cognitive and emotional empathy (QCAE), empathic anger (TEAS), personal anger and aggression (BAQ), sadism (SSIS), and need to belong (NTB).

Manipulation Check

Participants responded to three manipulation check questions to determine that the two anger conditions elicited expected differences in perceived fairness of the Round 1 and 2 task allocations, and that the high-cost payment tokens (SONA credits) were perceived to be more important than the low-cost payment tokens (raffle ticket entries).

1) How fair did you think the photo rating task allocation was? (1 = *completely unfair*, 7 = *completely fair*)
2) How important was it to you that you got the maximum number of [SONA credits/raffle entries] as you could? (1 = *not at all important*, 7 = *extremely important*).

3) Are you completing SONA studies for required course credit or for extra credit?

Demographics and Suspicion Check

Participants reported their age, gender, racial/ethnic identity, and year in school. They lastly responded to the same deception check questions described in Study 2.

Results

Data Quality Screening and Descriptive Statistics

Participants were screened for suspicion and passing the knowledge check questions. No participants missed more than one knowledge check question. All participants also reported taking the study for required course credit. Of 284 participants, 219 indicated they were less than 50% suspicious of the group member deception. These 219 participants were included in the final analyses.[8]

Bivariate correlations among Study 3 variables are displayed in Table 3a, and means, standard deviations, and estimated inter-item reliability indices are reported in Table 3b. All multi-item measures had adequate inter-item reliability, except for the Self-Protection subscale of the GFIT. Due to an error in constructing the Qualtrics survey, one of the items ("I wanted to avoid a potentially destructive situation") was deleted, resulting in the remaining two items showing low inter-item estimated reliability ($\alpha = .47$). The remaining two self-protect items were thus assessed independently as single-item measures.

Manipulation Check

[8] As in Study 2, I examined whether suspicion level predicted participants' choice to reallocate for any of the group members or themselves, or whether suspicion moderated the effect of condition on reallocation choice. No significant effects of suspicion level on choice to reallocate were identified (*p*s > .33).

I first tested whether the experimental conditions elicited expected differences in perceived cost of the decisions and fairness of the group delegation scenarios.

Anger Condition Manipulation

I examined participants' responses to the first reallocation task amount as the manipulation check for the Empathic and Anger condition manipulation. As expected, those in the Personal Anger condition reported that their task allocation was less fair (M = 2.15, SD = 1.33) than those in the Empathic Anger condition (M = 4.07, SD = 1.88), $t(217) = 8.68$, $p < .001$. Empathic Anger condition also reported that Group Member C (Taylor, the third group member)'s task allocation was less fair (M = 2.00, SD = 1.27) than those in the Personal Anger condition (M = 3.80, SD = 1.93), $t(217) = -8.13$, $p < .001$. Participants in both conditions reported that Group Member A (Alex, the task delegator)'s task delegation was equally unfair, with both the Personal Anger participants (M = 1.83, SD = 1.24) and the Empathic Anger conditions (M = 1.86, SD = 1.47) reporting similarly low levels of fairness, $t(217) = -0.07$, p = .941. However, it was notable in participants in both the Personal Anger and the Empathic Anger conditions reported that the delegator's task assignment was more unfair than their own assignment ($t[107] = -2.35$, p = .021) and the third group member's assignment ($t[110] = -10.40$, $p < .001$) respectively.

Cost Manipulation

To assess whether the raffle tickets (payment in the low-cost condition) were thought to be less valuable than SONA credits (payment in the high-cost condition), I conducted a paired samples t-test comparing participants' responses on the decision cost manipulation check. In the low-cost condition, participants reported that keeping their SONA credit compensation was more important to them (M = 5.75, SD = 1.37) than maintaining their raffle ticket compensation (M =

2.61, *SD* = 1.91), *t*(107) = 14.70, *p* < .001. Similarly in the high-cost condition, participants reported valuing SONA credits (*M* = 6.23, *SD* = 1.30) more than raffle tickets (*M* = 2.47, *SD* = 1.86), *t*(103) = 17.85, *p* < .001.

Personal and Empathic Anger Effects on Costly Responses to Unfairness

In Hypothesis 1 I predicted that empathic anger would predict greater willingness to help a victim of unfairness than personal anger, and that personal anger would predict more willingness to punish a perpetrator of unfairness as well as self-compensate than empathic anger. To test these predictions, I first examined whether the two anger-evoking scenarios resulted in different patterns of emotional responses. To establish equivalency of experimental conditions, the two conditions should ideally evoke similar levels of anger and satisfaction, but different levels of distress and compassion. As some of these emotional states were expected to be correlated, I used a MANCOVA controlling for baseline positive and negative to assess these relationships.

The multivariate effect of Anger conditions across all state affect responses when controlling for baseline positive and negative affect was statistically significant, *F*(4, 212) = 2.770, *p* = .028, partial η^2 = .050. As in Study 2, state anger and empathic concern were not significantly correlated in either the Empathic Anger (*r*[109] = -.11, *p* = .254) or Personal Anger condition (*r*[106] = -.02, *p* = .854). Next, I assessed the univariate analyses to identify effects on each affective response. In contrast to expectations, the effect of Anger condition on anger was nearly significant, *F*(1, 215) = 3.74, *p* = .054, partial η^2 = .017, with participants reporting lower anger after witnessing a third party fairness violation in the Empathic Anger condition (*M* = 3.57, *SD* = 1.94) than when being personally treated unfairly in the Personal Anger condition (*M* = 4.02, *SD* = 2.05).

The effect of Anger condition on empathic concern was statistically significant, in line with expectations, $F(1, 215) = 5.35$, $p = .022$, partial $\eta^2 = .024$, with participants reporting more empathic concern after witnessing a third party fairness violation in the Empathic Anger condition ($M = 1.83$, $SD = 1.11$) than when being personally treated unfairly in the Personal Anger condition ($M = 1.48$, $SD = 0.87$).

The effect of Anger condition on personal distress was also statistically significant, in line with expectations, $F(1, 215) = 4.05$, $p = .046$, partial $\eta^2 = .018$, with participants reporting less personal distress after witnessing a third party fairness violation in the Empathic Anger condition ($M = 2.78$, $SD = 1.52$) than when being personally treated unfairly in the Personal Anger condition ($M = 3.10$, $SD = 1.63$).

I next tested Hypothesis 4 by examining the difference between the Anger and Cost conditions in participants' decisions to punish the group delegator, help the third-party victim, self-compensate, or escape the situation while controlling for baseline positive and negative affect. A multinomial logistic regression was modeled to assess the change in log-odds of choosing each decisional outcome as a function in change of experimental condition (Empathic Anger and Low Cost = 0). Against Hypothesis 1, no difference was found between Empathic and Personal anger conditions in participants' odds of choosing to reallocate tasks for the delegator, exp(B) = 1.09, $p = .795$; the third party victim, exp(B) = 3.52, $p = .136$; or themselves, exp(B) = 3.52, $p = .136$, compared to making no decision (see Figure 3a).

In support of Hypothesis 4, increased decisional cost did predict differences in participants' decision to engage in any decision other than avoidance/escape. Low decision cost led to increased odds of participants choosing to reallocate tasks for the delegator, exp(B) = 6.25,

$p < .001$; the third party victim, exp(B) = 6.76, $p = .012$; or themselves, exp(B) = 27.79, $p < .001$, compared to making no decision (see Figure 3a).

An ANCOVA was modeled to test the effect of Anger condition and Cost condition on reallocation amounts to each group member with baseline positive and negative affect controlled for as covariates. When assessing reallocations to the group delegator, no significant effect was found for the effect of EA or PA anger condition, $F(1,82) = 0.89$, $p = .35$. However, a significant effect of Cost condition was found, such that participants reallocated fewer tasks for the delegator in the high-cost condition than the low-cost condition, $F(1,82) = 4.21$, $p = .043$ (see Figure 3b). An ANCOVA testing the effects of cost and anger condition on self-compensation found no significant effect of anger condition, $F(1,82) = 0.35$, $p = .561$, but a significant effect of cost condition, $F(1,82) = 8.03$, $p = .013$, such that participants relocated more for themselves in the high-cost condition than the low-cost condition (see Figure 3c). A final ANCOVA tested the effects of cost and anger condition on amount of task reallocation for the group partner (the third party victim). No effect of anger condition was found on third party helping, $F(1, 2) = 1.74$, p = .318. Similarly no effect of cost condition was found on third party helping, $F(1,2) = .01$, $p = .937$. Because only seven people chose to help the group partner overall, the analysis of condition effects was severely underpowered (see Figure 3c).

Personal and Empathic Anger Effects on Transgression-Related Goals

I next examined how empathic and personal anger predicted self or other-oriented goals. I conducted a MANCOVA assessing the difference in motivational goal salience between the empathic anger and personal anger conditions, as well as between the high and low-cost conditions, while controlling for baseline positive and negative affect. Unlike Study 2, the omnibus effect of Anger condition was not statistically significant, $F(9, 270) = 1.49$, $p = .153$,

indicating none of the decisional goals differed between the experimental conditions. When assessing each decision goal separately, no statistically significant differences in motivational goals emerged (*p*s > .17).

However, the effect of cost did exert a significant omnibus effect on decisional goal salience, $F(9, 205) = 2.50$, $p = .010$, partial $\eta 2 = .10$. When assessing univariate effects, cost was found to exert a significant effect on the salience of goals to protect the self from future harm ($F(1, 213) = 11.80$, $p = .001$), with high-cost of the reallocation decision being associated with greater salience of future self-protection goals ($M = 4.63$, $SD = 2.12$) than the low-cost condition ($M = 3.60$, $SD = 2.23$). In addition, high-cost exerted a significant effect on goals to protect others in the group ($F(1, 213) = 11.80$, $p = .001$), with low-cost of the reallocation decision being associated with greater salience of other-protection goals ($M = 4.90$, $SD = 1.86$) than the high-cost condition ($M = 4.29$, $SD = 1.95$).

Exploratory Analyses: State Anger and Goal Salience

As an exploratory hypothesis, I examined whether state anger might influence motivational goals to different extents when witnessing third party unfairness or personal unfairness, I conducted a set of moderation analyses using Hayes' PROCESS macro (v3.4, model 1) to assess whether Anger condition moderated the relationship between state anger and motivational goal salience. Only emotional well-being was found to be significantly moderated by anger condition, $F(1, 215) = 10.50$, $R^2\Delta = .04$, interaction $B = .35$, $p = < .001$) , such that participants in the personal anger condition showed a strong positive relationship between state anger and motivation to maximize emotional well-being ($B = .35$, $p < .001$), whereas there was no relationship between anger and emotional well-being goals in the empathic anger condition (*B*

= -.03, p = .97). No other significant interaction effects emerged in any of the other analyses (ps > .15).

Discussion

Study 3 examined the effects of witnessing a third-party unfairness scenario versus personally being treated unfairly in an in-person context, where participants were given stronger indication that they were actually playing with other participants. In addition, Study 2 examined the interacting factor of decision cost to directly test whether empathic concern promotes altruistic helping or punishment behavior.

Within both the high and low-cost condition, I again found no significant effect of Anger condition on participants' transgression-related interpersonal decisions. As in Study 2, the Empathic Anger condition failed to elicit strong concern for the third group member, despite participants' reporting that they did perceive the third group member's task to be much more unfair than their own. One possible explanation may be that the anger directed toward the group delegator may have overshadowed concern for the third group victim, as participants in both conditions again reported perceiving the delegator's task allocation to be the most unfair, significantly more so than their own or their partner's tasks.

When examining the low-cost group—the group most analogous to Study 2—over half of participants opted to punish the group delegator in order to increase the delegator's task load. The second most common decision was for participants to make no decision, followed closely by decisions to self-compensate, which was contrary to what I initially expected. Once again, few people opted to help the third-party victim and no significant difference in choice frequency was found between conditions; however, more participants chose to help in the Empathic Anger condition than the Personal Anger condition as hypothesized. Similar to Study 2, the amount

participants reallocated in the low-cost condition reflected a general tendency to establish a balance of tasks for the group leader and other group partner, but minimize group task work for themselves. However, decision cost did have a significant impact on the rates and severity of reallocation decisions.

When participants had to pay a higher cost (as indicated by their response to the manipulation check) punishment rates dropped to become the second most common choice. Few people chose to self-compensate even in the low-cost condition, and notably no participants in the high-cost Empathic Anger condition chose to reallocate their own tasks. When participants did choose to make a costly reallocation decision, they gave a "lighter" punishment by choosing fewer tasks to reallocate, and also reduced their task load by fewer numbers (due to the increased cost of reallocation). These findings show strong evidence that anger felt when witnessing a stranger be treated unfairly does not elicit altruistic motivation, even if that motivation were to punish the offender. Despite many studies implying that moral outrage promotes costly third-party intervention (e.g., Gummerum et al., 2016; Lotz et al., 2011; Nelissen & Zeelenberg, 2009), these studies often conceptualize cost as an abstract cost of breaking norms (Nelissen & Zeelenberg, 2009) or receiving less of a bonus payout than expected (Gummerum et al., 2016; Lotz et al., 2011). When decision cost can actually harm the individual or cause them to lose resources, intervention is much less likely.

One moderator of whether empathic anger promotes costly punishment or helping is a witness's emotional closeness to the victim (Lotz et al., 2011; Pedersen et al., 2018; Pfattheicher et al., 2019). Though Study 3 was designed to increase the perception that participants were working with real group members, and elicit greater empathic concern for the group partner than the online design of Study 2, participants once again did not report strong concern for the third-

party victim in either Anger scenario condition. Study 3's findings show additional evidence that when witnessing low-level situations of unfairness or harm toward another person, empathic concern and empathic anger are unlikely to be evoked unless the witness knows the victim personally or feels emotional closeness to the victim. Surprisingly, the mere groups effect of participants working with other students from the same university was not enough to elicit this closeness, and in future studies, participants should be given an opportunity to actually meet their partner.

General Discussion

Across three studies, I examined the role of anger in promoting social connection, altruistic and egoistic motivation, and helping or punishment decisions. Substantial research over the past few decades has shown evidence both for and against the hypothesis that empathic anger (or moral outrage) can evoke altruistic motivation similarly to empathic concern. The summarized studies offer strong evidence that empathic anger is not altruistic, nor does it evoke other-oriented cognitions, motivation, or behavior. Although Study 1 suggested that recalling incidents of empathic anger could lead to greater motivation to connect with others, help victims and punish perpetrators, in Studies 2 and 3 witnessing a third party being treated unfairly predominantly motivated punishment motivations rather than helping the third-party victim. Additionally, when the decision to help or punish was made to be costly, participants consistently chose to avoid making a decision, and also weakened their punishments of the unfair task delegator.

The findings of Studies 2 and 3 seem to be at odds with the results of Study 1, in which participants were asked to recall an empathic anger or personal anger event. However, these differences highlight a likely explanatory mechanism behind why empathic anger in the lab did not evoke greater altruistic helping or punishment. Although the findings of Study 1 suggested that feeling empathic anger evoked motivation to harm perpetrators, this relationship between memory type and punishment motivation was better explained by emotions of sadness rather than anger. In addition, when participants were asked to recall empathic anger-evoking memories, they often brought up memories of individuals they were close with, such as friends or family members. The fact that individuals are most likely to consider individuals whom they

are close to, or whom are easy to empathize with, provides circumstantial evidence behind the importance of baseline social connectedness with a victim.

In both Study 2 and 3, participants chose to punish the offender at similar rates when witnessing a third party be treated unfairly compared to when they themselves were treated unfairly, despite the empathic anger condition not evoking salient empathic concern or compassion for the victim. There are a few possible reasons for this finding. At may be that participants felt angry that a general social norm had been violated even in the absence of strong caring for the individual victim (e.g., Lotz et al., 2011). Alternatively, there may have been a confounding effect whereby participants were additionally angered by their own (slightly) unfair allocation in the Empathic Anger condition which prompted motivation to punish the offender. Although not replicated in Study 3, this theory is corroborated by the Study 2 finding that goals to punish the delegator and change the delegator's future behavior were only correlated with state anger in the empathic anger condition, whereas in the personal anger condition these goals were salient regardless of state anger.

These findings indicate mixed support for the empathic anger-altruism hypothesis. In contrast to what would be predicted by the theoretical model, witnessing third-party injustice did not evoke motivation to help the victim. However, the lack of empathic concern felt for the victim means that these results are in line with what the model would predict: a victim who does not evoke empathy would also not evoke altruistic motivation to help. It seems as though the bar for feeling empathy is rather high and requires more interaction and opportunity for social bonding than may have been present in Studies 2 and 3. However given the lack of reported empathy and willingness to help, these studies corroborate accumulating research that empathic anger and moral outrage may be more self-serving than altruistic (Rothschild & Keefer, 2017;

Pedersen et al., 2018). Specifically, the findings of these studies suggest two major points: empathic anger does not promote altruistic motivation, and empathic anger is difficult to evoke when individuals are unmotivated to empathize with the third-party victim. Although these reported studies did not measure closeness to the victim, the low level of empathic concern indicates that participants did not feel particularly close to or compassionate for their group partner even when the partner was treated unfairly. The lack of costly punishment, aligned with the low empathic concern, shows tangential support for the *just deserts theory*, such that low levels of compassion predicted similarly low levels of costly punishment. Aligned with just deserts theory, the combination of personal frustration at having to complete the study task magnified decisions to punish the offender in the non-costly condition, as evidenced by participants reporting similar levels of Justice goals in the Empathic Anger and Personal Anger conditions.

Why might empathic anger be unlikely to occur in the absence of a preexisting social bond? It may be, simply put, because "empathy is hard work" (c.f. Cameron et al., 2019). Engaging in both cognitive perspective-taking and compassionate emotional responding is associated with cognitive depletion, and several studies indicate that when external motivates are not present, individuals often choose to avoid engaging in empathy in order to avoid this expected cognitive drain (Cameron et al., 2019), particularly when the target is stigmatized or perceived to be particularly difficult to empathize with (Cameron & Payne, 2011). If empathic anger is predicated on feeling strong empathic concern, then it follows that feeling empathic anger is easier when the target of empathy is more well-known or evokes closeness and empathy to a more automatic extent. In addition, motivational factors have been shown to moderate empathy avoidance (Cameron et al., 2019, Pedersen et al., 2018; Schumann et al., 2014). For

example, participants who were given feedback to make them perceive empathy as being easier and less effortful were less likely to avoid tasks that required empathy over a long series of trials (Cameron et al., 2019, studies 7-8). When considering how empathic concern might interact with anger, it is important to consider the role of attention and cognitive depletion. Anger is positively correlated with cognitive depletion, as engaging in self-control has been shown to lead to greater anger (DeWall et al., 2007; Osgood & Muraven, 2015); additionally, high state anger hinders effortful perspective taking and empathic responding (Mohr et al., 2007). Empathic anger may be especially depleting due to the interaction between the effortful empathic response and the depleting nature of anger. However, it may also be cognitively less effortful to feel empathic anger on behalf of individuals with whom the witness feels an emotional bond, or whom they are more motivated to take the perspective of. Future research might examine the role of perceived efficacy and cognitive depletion in the context of empathic anger, and test whether the moderating role of social closeness is explained by increased empathic efficacy.

Several characteristics of the studies provide limitations and moderating factors which should be taken into consideration. First is the element of the task being a one-shot task rather than extended task with multiple opportunities for the group members to interact. Not only would the lack of interaction hinder empathic engagement (Eyal et al., 2018), but prior research has suggested that engagement in altruistic punishment may serve a purpose of communicating a group member's trustworthiness to others (Jordan et al., 2016). In a one-shot study design in which participants know they will not see their partners again, participants will not be able to reap future rewards of their costly helping or punishment through increased trust with the group partner. While this conservative design provided a stricter test of the empathic anger altruism hypothesis, it also likely decreased general motivation to engage with group partners.

A factor that introduced some ambiguity into the study design was the lack of clarity about the group delegator's motives when allocating the task among all participants. Although the study included a short messaging system where participants and the group members typed in a short message, the group delegator's message was kept vague in order to reduce potential attribution biases. However, the vague messaging ("Hi. Not sure what this study is all about.") may have introduced some ambiguity about the delegator's intentions, perhaps suggesting they may have made the allocations accidentally or carelessly.

In addition, as noted previously, there is a potential confound wherein participants in the Empathic Anger condition were not totally divorced from the fairness situation. This may have resulted in participants both feeling personal anger when witnessing the third-party unfairness event and also perhaps more guilt than if participants had not been involved in the group task. Second, the nature of the task (through a computer without social cues from which one might develop a rapport with the target) likely blunted feelings of closeness and motivation to empathize with other group members. Future studies should implement a short introduction round or utilize actual players when possible (rather than computerized respondents) to maximize the mundane (and likely experimental) realism of the study. To this point, a final limitation is the use of computerized respondents which may have elicited greater suspicion than was reported in the study.

Future research should not only address these limitations, but also further examine the mechanisms by which empathic anger is difficult and/or self-oriented. One way to examine this might be to manipulate other potential costs and benefits of helping or punishment, such as anticipated positive affect, anticipated affiliation with the victim or offender, and empathic joy shared with the victim of unfairness, to better understand the boundary conditions of empathic

anger. Future research should also more closely examine the fundamental question of whether other-focused empathic anger truly exists. If closeness to the victim is a substantial factor in the extent to which individuals report empathic anger, perhaps the anger felt on behalf of the victim is actually anger felt on behalf of the self. As the world becomes more connected, individuals will encounter ever more opportunities to witness and respond to injustice (whether objectively unjust, or perceived as such). A precise understanding of how individuals perceive and emotionally respond to injustice will be essential to maximize the potential prosocial benefits of empathic anger.

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Tables and Figures

Table 1a

Means and Univariate Omnibus Effects of Condition In Study 1 (Unstandardized)

	PA		EA		CON						
Variables	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*	*df*	Error *df*	Sig.	Partial η^2
Anger	3.93	1.95	4.37	1.45	2.03	1.10	32.72	2	143	< .001	.31
Sadness	3.12	1.94	3.68	1.85	2.64	1.43	3.92	2	143	.022	.052
Fear	3.29	1.88	3.73	1.95	2.57	1.59	16.16	2	143	.009	.064
Happiness	3.99	1.69	3.94	1.14	4.84	1.26	6.51	2	143	.002	.084
Social Connectedness	3.30	1.65	3.70	1.62	2.84	1.48	3.42	2	143	.035	.046
Prosocial Activities	0.10	0.15	0.18	0.20	0.09	0.13	3.89	2	143	.023	.052
Hostile Activities	0.07	0.18	0.11	0.24	0.01	0.04	4.69	2	143	.013	.062
Social Activities	0.20	0.21	0.27	0.27	0.14	0.15	2.35	2	143	.090	.032

Table 1b

Hierarchical Regression Analyses Predicting Interpersonal Motivation

Dependent Variable		Block 1						Block 2					
	Predictor	β	*p*	*F*	*df*	R^2_{adj}	*p*	β	*p*	*F*	*df*	R^2_{adj}	*p*
Social Connectedness	PA Dummy Cond	.11	.22	3.30	2, 147	0.03	.040	.03	.69	18.47	4, 145	0.32	< .001
	EA Dummy Cond	.24	.011					.07	.45				
	State Anger							.07	.43				
	State Sadness							.53	.000				
Social Activities	PA Dummy Cond	.15	.11	5.27	2, 146	0.06	.060	.19	.059	3.14	4, 144	0.06	.016
	EA Dummy Cond	.30	.001					.34	.002				
	State Anger							-.12	.23				
	State Sadness							.11	.22				
Prosocial Activities	PA Dummy Cond	.10	.28	8.67	2, 147	0.09	< .001	.03	.74	5.06	4, 145	0.10	.001
	EA Dummy Cond	.36	<.001					.30	.004				
	State Anger							.16	.11				
	State Sadness							-.10	.26				
Hostile Activities	PA Dummy Cond	.16	.08	4.27	2, 146	0.04	.016	.01	.96	6.03	4, 144	0.12	< .001
	EA Dummy Cond	.27	.004					.10	.33				
	State Anger							.39	.000				
	State Sadness							-.18	.045				

Table 2a

*Pearson Bivariate Correlations among Study 2 Variables (*N = *141)*

	COND	POS	NEG	ANG	POWR	MORL	PRTO	FAIR	PRTS	EMWB	JUST	EDUC	AVD	MAAS	FCJE	FCSC	FCDS	FCST	FCTS	DIST	EMPC	EMPT	EMOS	EMCT	EMRS	TEAS	BAQP	BAQV	BAQA	BAQH	SSIS	NTB
COND	—																														
POS	-0.04	—																													
NEG	-0.04	0.14	—																												
ANG	-0.12	-0.08	0.10	—																											
POWR	-0.01	-0.19*	0.00	0.54***	—																										
MORL	0.04	-0.18*	-0.10	0.26**	0.47***	—																									
PRTO	-0.07	-0.20*	0.02	0.37***	0.43***	0.72***	—																								
FAIR	-0.09	-0.04	0.07	0.51***	0.47***	0.48***	0.59***	—																							
PRTS	-0.10	-0.07	0.10	0.51***	0.52***	0.50***	0.57***	0.85***	—																						
EMWB	-0.04	-0.13	-0.01	0.53***	0.64***	0.57***	0.61***	0.59***	0.67***	—																					
JUST	0.07	-0.11	0.10	0.63***	0.60***	0.27**	0.40***	0.45***	0.45***	0.53***	—																				
EDUC	-0.08	-0.14	0.09	0.63***	0.59***	0.46***	0.68***	0.61***	0.58***	0.65***	0.75***	—																			
AVD	-0.06	-0.12	-0.06	0.32***	0.53***	0.62***	0.48***	0.56***	0.66***	0.61***	0.30***	0.39***	—																		
MAAS	0.06	0.22*	-0.03	-0.12	-0.11	-0.10	-0.14	-0.08	-0.16	-0.12	-0.11	-0.17*	-0.10	—																	
FCJE	-0.05	0.33***	0.13	-0.09	-0.09	-0.20*	-0.18*	-0.15	-0.13	-0.14	-0.10	-0.20*	-0.18*	0.55***	—																
FCSC	-0.02	0.35***	0.10	-0.11	-0.11	-0.21*	-0.23**	-0.16	-0.18*	-0.18*	-0.12	-0.23**	-0.17*	0.70***	0.91***	—															
FCDS	0.02	0.24**	0.10	-0.07	-0.13	-0.15	-0.12	-0.16	-0.14	-0.18*	-0.08	-0.16	-0.18*	0.48***	0.79***	0.78***	—														
FCST	-0.04	0.35***	0.11	-0.10	-0.12	-0.21*	-0.23**	-0.14	-0.18*	-0.18*	-0.12	-0.22**	-0.18*	0.64***	0.92***	0.98***	0.79***	—													
FCTS	0.01	0.31***	0.11	0.01	-0.01	-0.11	-0.08	-0.06	-0.06	-0.06	0.01	-0.09	-0.11	0.40***	0.72***	0.58***	0.50***	0.60***	—												
DIST	-0.12	-0.11	0.10	0.87***	0.55***	0.24**	0.31***	0.44***	0.51***	0.56***	0.63***	0.62***	0.33***	-0.16	-0.14	-0.15	-0.10	-0.15	-0.04	—											
EMPC	0.11	-0.13	-0.05	0.01	0.40***	0.42***	0.32***	0.21*	0.32***	0.30***	0.23**	0.15	0.55***	-0.10	-0.10	-0.13	-0.12	-0.15	-0.11	0.05	—										
EMPT	-0.12	-0.06	0.07	0.54***	0.50***	0.38***	0.49***	0.65***	0.62***	0.60***	0.49***	0.60***	0.40***	-0.10	-0.07	-0.11	-0.16	-0.10	-0.04	0.53***	0.27**	—									
EMOS	-0.10	-0.06	0.02	0.49***	0.40***	0.41***	0.52***	0.67***	0.61***	0.55***	0.39***	0.59***	0.44***	-0.10	-0.11	-0.15	-0.18*	-0.15	-0.08	0.45***	0.20*	0.86***	—								
EMCT	-0.01	-0.13	0.03	0.41***	0.42***	0.47***	0.53***	0.54***	0.57***	0.53***	0.50***	0.55***	0.54***	-0.18*	-0.22**	-0.27**	-0.20*	-0.26**	-0.11	0.47***	0.47***	0.60***	0.59***	—							
EMRS	-0.09	-0.14	0.03	0.43***	0.40***	0.43***	0.56***	0.62***	0.60***	0.53***	0.40***	0.55***	0.43***	-0.21*	-0.26**	-0.31***	-0.26**	-0.31***	-0.20*	0.46***	0.38***	0.75***	0.78***	0.82***	—						
TEAS	-0.17	-0.10	0.12	0.48***	0.42***	0.38***	0.44***	0.58***	0.59***	0.47***	0.46***	0.53***	0.45***	-0.20*	-0.11	-0.16	-0.14	-0.16	-0.08	0.51***	0.34***	0.67***	0.69***	0.73***	0.80***	—					
BAQP	-0.10	0.08	-0.02	0.23**	0.41***	0.22**	0.13	0.23**	0.26**	0.28***	0.33***	0.16	0.39***	-0.01	0.10	0.06	-0.02	0.05	0.10	0.26**	0.54***	0.36***	0.24**	0.38***	0.28***	0.32***	—				
BAQV	-0.09	-0.08	0.01	0.37***	0.49***	0.35***	0.38***	0.31***	0.32***	0.47***	0.39***	0.35***	0.37***	-0.15	-0.05	-0.10	-0.17*	-0.10	-0.06	0.40***	0.45***	0.56***	0.41***	0.48***	0.48***	0.48***	0.63***	—			
BAQA	-0.08	-0.11	0.04	0.25**	0.45***	0.44***	0.32***	0.28***	0.35***	0.40***	0.29***	0.21*	0.49***	-0.16	-0.11	-0.16	-0.17*	-0.18*	-0.09	0.31***	0.64***	0.30***	0.19*	0.58***	0.47***	0.44***	0.60***	0.66***	—		
BAQH	-0.02	-0.12	-0.02	0.30***	0.51***	0.40***	0.34***	0.34***	0.44***	0.40***	0.40***	0.35***	0.58***	-0.12	-0.11	-0.14	-0.17*	-0.15	-0.07	0.35***	0.63***	0.31***	0.27**	0.63***	0.43***	0.45***	0.59***	0.52***	0.68***	—	
SSIS	0.08	-0.09	-0.09	0.22*	0.48***	0.41***	0.28***	0.18*	0.25**	0.31***	0.35***	0.16	0.54***	-0.02	-0.05	-0.05	-0.10	-0.07	0.01	0.25**	0.80***	0.24**	0.13	0.48***	0.30***	0.31***	0.71***	0.58***	0.72***	0.70***	—
NTB	-0.04	-0.12	0.02	0.43***	0.48***	0.50***	0.53***	0.63***	0.63***	0.60***	0.49***	0.53***	0.59***	-0.15	-0.14	-0.20*	-0.23**	-0.21*	-0.09	0.42***	0.48***	0.63***	0.65***	0.78***	0.74***	0.68***	0.38***	0.50***	0.61***	0.62***	0.48***	—

Note. COND = Anger Condition (0 = EA, 1 = PA). POS = Positive baseline affect. NEG = Negative baseline affect. MAAS = Trait mindful attention and awareness. FCJE = Five-Factor Curiosity Scale (FCS), Joyous Exploration subscale. FCSC = FCS Social Curiosity subscale. FCDS = FCS Deprivation Sensitivity subscale. FCST = FCS Stress Tolerance Subscale. FCTD = FCS Thrill Seeking subscale. ANG = State anger. DIST = state personal distress. EMPC = state empathic concern. POWR = Group-Focused Interpersonal Transgression scale (GFIT) Power subscale. MORL = GFIT Moral subscale. PRTO = GFIT Protect Others subscale. PRTS = GFIT Protect Self subscale. EMWB = GFIT Emotional Wellbeing subscale. JUST = GFIT Justice subscale. EDUC = GFIT Education subscale. AVD = GFIT Avoidance subscale. EMPT = Trait Cognitive and Affective Empathy scale (QCAE), Perspective Taking subscale. EMOS = QCAE Online Simulation subscale. EMCT = QCAE Emotion Contagion subscale. EMRS = QCAE Proximal responsivity subscale. TEAS = Trait empathic anger. BAQP = Trait physical aggression. BAQV = Trait verbal aggression. BAQA = Trait personal anger. BAQH = Trait hostility. SSIS = Trait sadism. NTB= Trait need to belong.
*p < .05, **p < .01, ***p < .001

Table 2b

Means and Standard Deviations of Study 2 Variables within Anger Conditions

	POS		NEG		MAAS		FCJE		FCSC		FCDS		FCST		FCTS		ANG	
	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA
M	1.90	1.82	3.56	3.48	17.83	28.08	21.58	14.26	23.61	19.73	13.19	16.71	22.69	15.57	15.09	16.08	5.01	5.05
SD	1.12	0.99	0.77	0.97	66.02	96.35	85.63	54.02	94.27	79.78	69.42	76.47	94.46	76.72	56.33	47.84	1.97	2.27
Cronbach's α	.82		.92		.88		.70		.71		.79		.74		.23		.96	

	DIST		EMPC		POWR		MORL		PRTO		PRTS		EMWB		JUST		EDUC	
	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA
M	4.70	4.64	2.59	2.16	4.24	4.63	4.26	4.02	4.85	4.69	4.95	4.97	5.08	4.56	4.41	4.51	5.21	5.17
SD	1.88	2.18	1.90	1.96	1.72	2.08	1.79	2.11	1.75	2.06	1.51	1.87	1.38	1.97	2.07	2.38	1.79	1.92
Cronbach's α	.93		.95		.85		.88		.86		.74		.77		.95		.87	

	AVD		EMPT		EMOS		EMCT		EMRS		TEAS		BAQP		BAQV		BAQA	
	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA
M	4.03	3.79	3.16	2.94	3.07	2.92	2.76	2.44	3.03	2.74	3.39	3.08	2.64	2.31	3.02	2.83	2.33	1.91
SD	1.66	1.89	0.54	0.93	0.51	0.92	0.69	0.91	0.61	0.94	0.66	1.18	1.37	1.40	0.92	1.16	0.91	1.09
Cronbach's α	.82		.90		.85		.75		.75		.80		.89		.66		.69	

	BAQH		SSIS		NTB	
	EA	PA	EA	PA	EA	PA
M	2.70	2.47	2.50	2.39	3.12	2.93
SD	1.12	1.34	1.80	1.73	0.63	0.98
Cronbach's α	.83		.96		.74	

Note. COND = Anger Condition (0 = EA, 1 = PA). POS = Positive baseline affect. NEG = Negative baseline affect. MAAS = Trait mindful attention and awareness. FCJE = Five-Factor Curiosity Scale (FCS), Joyous Exploration subscale. FCSC = FCS Social Curiosity subscale. FCDS = FCS Deprivation Sensitivity subscale. FCST = FCS Stress Tolerance Subscale. FCTD = FCS Thrill Seeking subscale. ANG = State anger. DIST = state personal distress. EMPC = state empathic concern. POWR = Group-Focused Interpersonal Transgression scale (GFIT) Power subscale. MORL = GFIT Moral subscale. PRTO = GFIT Protect Others subscale. PRTS = GFIT Protect Self subscale. EMWB = GFIT Emotional Wellbeing subscale. JUST = GFIT Justice subscale. EDUC = GFIT Education subscale. AVD = GFIT Avoidance subscale. EMPT = Trait Cognitive and Affective Empathy scale (QCAE), Perspective Taking subscale. EMOS = QCAE Online Simulation subscale. EMCT = QCAE Emotion Contagion subscale. EMRS = QCAE Proximal responsivity subscale. TEAS = Trait empathic anger. BAQP = Trait physical aggression. BAQV = Trait verbal aggression. BAQA = Trait personal anger. BAQH = Trait hostility. SSIS = Trait sadism. NTB= Trait need to belong.

Figure 2a

Study 2 Reallocation Choice Frequency

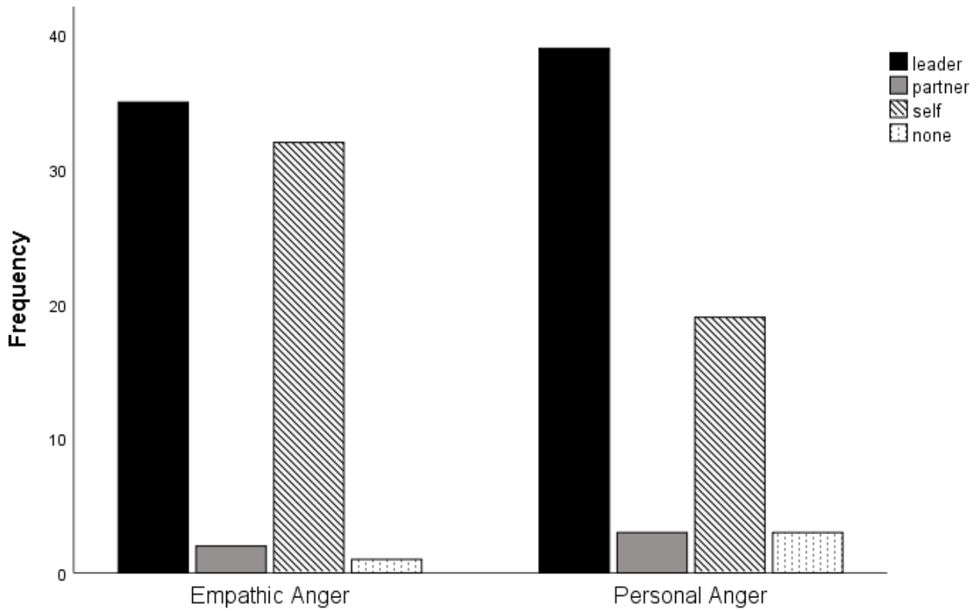


Figure 2b

Study 2 Frequency of Reallocation Decisions Across Personal and Empathic Anger Scenarios

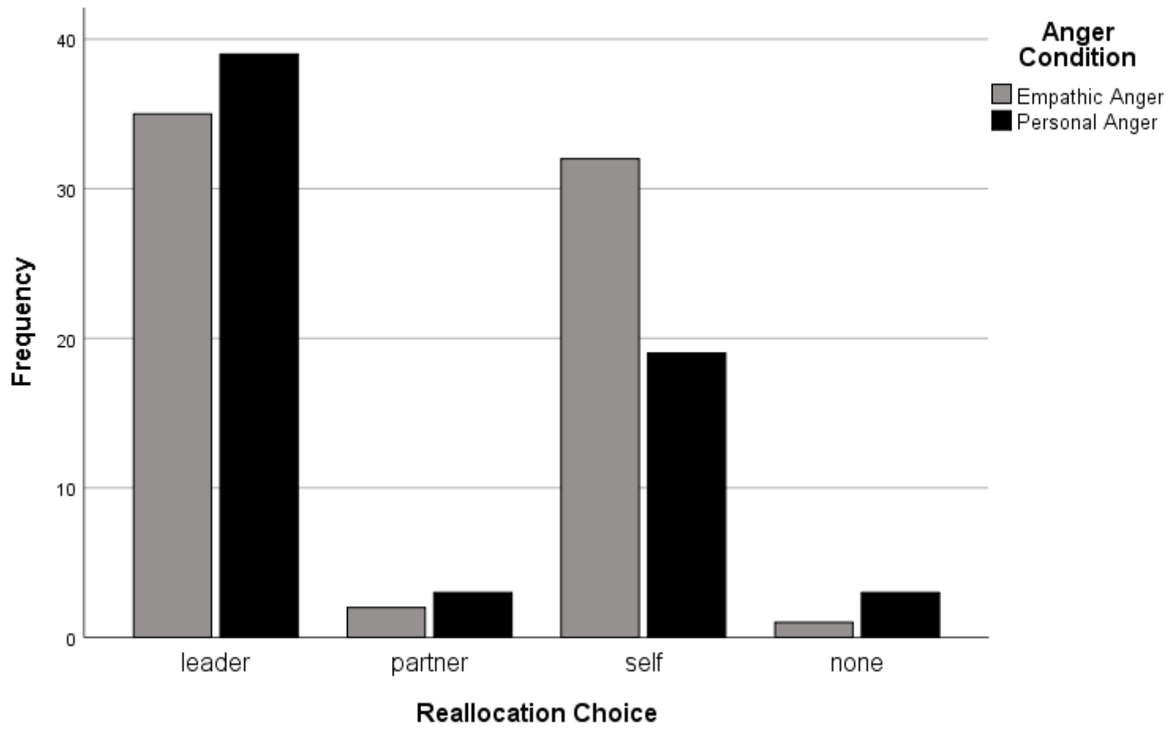
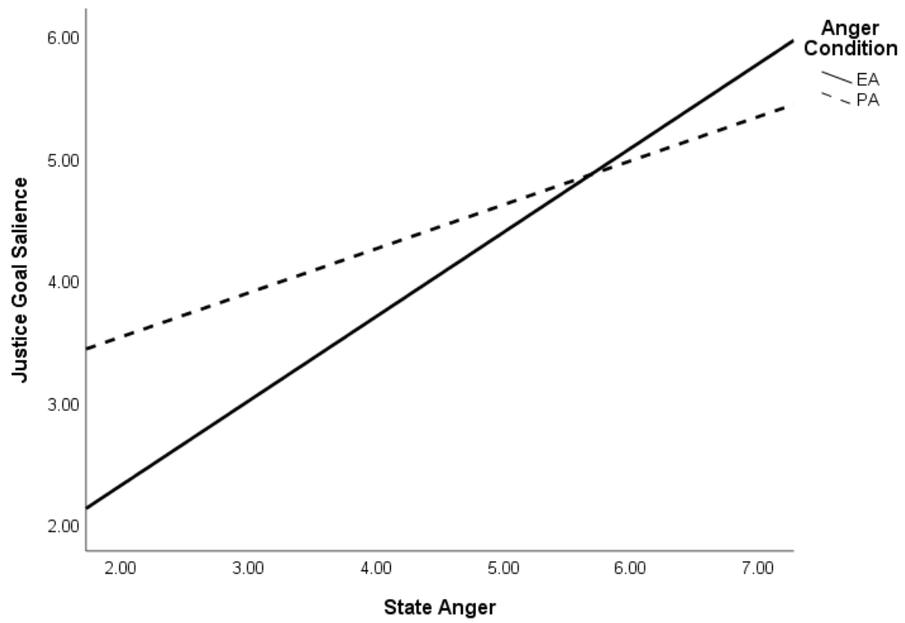


Figure 2c

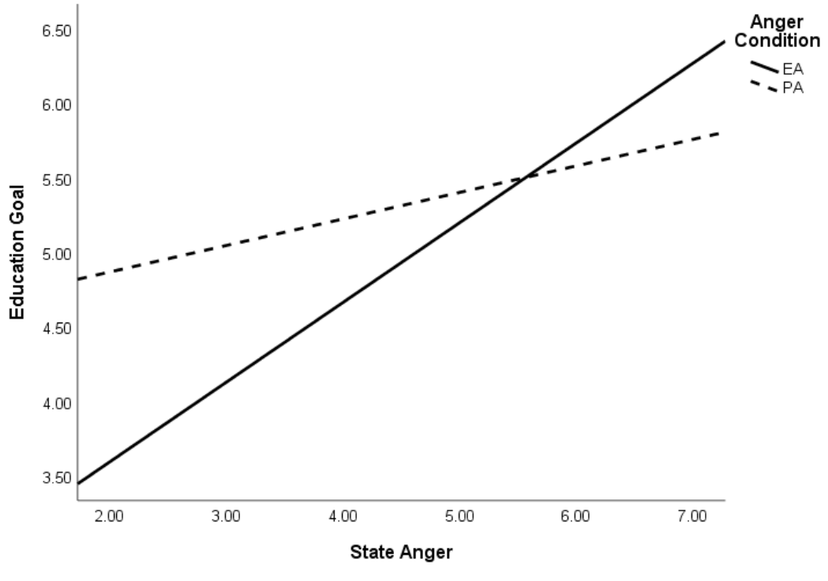
Moderation Effect of Anger Condition on State Anger – Justice Goal Relationship.



Note. EA = Empathic Anger condition. PA = Personal Anger condition.

Figure 2d

Moderation Effect of Anger Condition on State Anger – Education Goal Relationship.



Note. EA = Empathic Anger condition. PA = Personal Anger condition.

Table 3a

Pearson Bivariate Correlations among Study 2 Variables (N = 219)

	ANGCOND	COSTCOND	POS	NEG	MAAS	FCJE	FCDS	FCST	FCSC	FCTS	ANG	EMPC	DIST	HAPPY	POR	MORL	TRTFAIR	SPFUT	EMWB	JUST	EDUC	AVD	PRTO	EMPT	EMOS	EMCT	EMRS	TEAS	BAQP	BAQV	BAQA	BAQH	SSIS	NTB
ANGCOND	—																																	
COSTCOND	0.00	—																																
POS	-0.06	0.03	—																															
NEG	-0.09	0.01	0.20**	—																														
MAAS	-0.07	-0.01	-0.27***	0.13	—																													
FCJE	-0.01	0.04	-0.14*	0.44***	0.04	—																												
FCDS	-0.04	-0.08	0.02	0.22**	-0.21**	0.46***	—																											
FCST	-0.03	-0.01	0.29***	-0.05	-0.38***	-0.20**	0.12	—																										
FCSC	0.05	0.09	0.18**	0.12	-0.30***	0.22**	0.30***	0.21**	—																									
FCTS	-0.04	-0.05	-0.06	0.15*	-0.03	0.38***	0.22**	-0.22**	0.13	—																								
ANG	0.11	-0.03	0.13	0.12	-0.07	-0.02	0.05	0.13	0.02	0.01	—																							
EMPC	-0.17*	-0.00	0.10	0.16*	0.11	0.13	0.12	0.02	0.03	0.03	-0.07	—																						
DIST	0.10	-0.00	0.20**	0.22**	-0.02	0.05	0.14*	0.16*	0.03	0.03	0.76***	0.11	—																					
HAPPY	-0.17*	-0.07	-0.03	0.11	0.17*	0.09	0.07	-0.11	-0.06	0.12	-0.41***	0.35***	-0.33***	—																				
POR	0.05	-0.13*	-0.01	0.08	-0.02	0.04	0.14*	-0.01	0.03	0.25***	0.34***	-0.01	0.36***	0.01	—																			
MORL	-0.10	-0.10	-0.04	0.21**	0.08	0.07	0.18**	0.01	-0.01	0.08	0.04	0.16*	0.14*	0.09	0.30***	—																		
TRTFAIR	0.04	-0.08	-0.09	0.12	0.01	0.02	0.17*	0.02	0.08	0.03	0.15*	0.02	0.21**	-0.01	0.32***	0.53***	—																	
SPFUT	-0.04	0.23***	0.05	0.09	-0.02	0.15*	0.09	0.05	0.08	0.14*	0.15*	-0.02	0.23***	-0.05	0.20**	0.12	0.16*	—																
EMWB	-0.12	-0.02	-0.04	0.16*	-0.01	0.13	0.22**	0.14*	0.12	0.15*	0.20**	0.10	0.28***	0.10	0.44***	0.58***	0.44***	0.32***	—															
JUST	0.05	-0.08	0.08	0.14*	-0.04	0.07	0.18**	0.04	0.09	0.15*	0.48***	-0.04	0.45***	-0.12	0.52***	0.17*	0.40***	0.22***	0.29***	—														
EDUC	0.05	-0.11	0.00	0.13	-0.00	0.03	0.14*	0.07	0.08	0.07	0.41***	0.00	0.38***	-0.15*	0.42***	0.34***	0.52***	0.12	0.30***	0.78***	—													
AVD	-0.06	0.07	0.12	0.10	-0.08	0.19**	0.21**	0.12	0.19**	0.14*	0.02	0.16*	0.09	0.08	0.18**	0.33***	0.19**	0.32***	0.38***	0.04	0.01	—												
PRTO	-0.07	-0.16*	-0.00	0.13	-0.02	-0.01	0.13	0.06	0.01	0.08	0.15*	0.13	0.12	0.06	0.29***	0.67***	0.63***	0.01	0.41***	0.35***	0.53***	0.08	—											
EMPT	0.04	-0.01	-0.18*	0.15*	0.12	0.32***	0.18**	-0.07	0.22**	0.13	-0.06	-0.01	-0.02	-0.03	0.00	0.06	0.08	0.17*	0.07	0.03	0.04	0.07	-0.02	—										
EMOS	-0.04	-0.03	-0.17*	0.21**	0.15*	0.35***	0.15*	-0.17*	0.11	0.12	-0.10	0.15*	-0.06	0.19**	0.01	0.21**	0.13	0.07	0.17*	-0.10	-0.03	0.15*	0.16*	0.34***	—									
EMCT	0.10	0.09	0.20**	0.00	-0.31***	-0.08	0.07	0.43***	0.29***	-0.02	0.06	0.05	0.11	-0.01	-0.00	0.02	0.08	0.05	0.12	-0.03	0.01	0.11	0.11	0.03	0.09	—								
EMRS	0.08	0.06	0.10	0.15*	-0.20**	0.19**	0.17*	0.21**	0.16*	0.10	0.01	0.08	0.04	0.03	0.03	0.09	0.11	0.05	0.13	0.04	0.06	0.08	0.15*	0.14	0.30***	0.50***	—							
TEAS	0.12	0.01	0.12	0.11	-0.21**	0.07	0.10	0.15*	0.28***	0.15*	0.17*	-0.01	0.16*	-0.09	0.12	0.12	0.15*	0.03	0.18*	0.20**	0.22**	0.13	0.21**	0.03	0.19**	0.30***	0.41***	—						
BAQP	-0.03	-0.12	-0.01	-0.07	0.01	-0.06	0.08	0.03	-0.07	0.07	0.18*	0.00	0.13	0.04	0.26***	0.02	0.12	0.10	0.05	0.26***	0.22**	-0.06	0.09	0.01	-0.18**	-0.15*	-0.17*	0.01	—					
BAQV	0.01	-0.19**	-0.09	-0.03	-0.01	0.04	-0.00	-0.09	0.03	0.10	0.14*	-0.13	0.05	-0.08	0.18**	0.06	0.16*	-0.04	0.00	0.26***	0.29***	-0.17*	0.12	0.14*	-0.08	-0.16*	-0.02	0.12	0.44***	—				
BAQA	0.04	-0.09	0.20**	-0.03	-0.28***	-0.14*	-0.01	0.22**	0.16*	0.03	0.14*	-0.09	0.12	-0.03	0.11	-0.05	-0.07	0.01	-0.13	0.06	0.02	-0.05	-0.04	-0.09	-0.35***	0.10	0.01	-0.04	0.35***	0.32***	—			
BAQH	0.05	-0.17*	0.26***	0.00	-0.31***	-0.08	0.16*	0.38***	0.30***	0.20**	0.26***	0.01	0.25***	-0.09	0.21**	0.10	0.08	0.14*	0.20**	0.24***	0.20**	0.11	0.16*	-0.07	-0.11	0.18*	0.08	0.21**	0.26***	0.27***	0.29***	—		
SSIS	0.00	-0.13	0.07	-0.07	-0.29***	-0.07	0.12	0.13	0.12	0.01	0.08	0.02	0.10	0.05	0.21**	0.03	0.03	0.00	0.11	0.13	0.10	0.02	0.07	-0.11	-0.19**	0.02	-0.10	0.07	0.39***	0.27***	0.31***	0.34***	—	
NTB	0.05	0.04	0.14*	-0.03	-0.23***	-0.05	0.03	0.32***	0.25***	0.19**	0.13	0.11	0.15*	-0.09	0.14*	0.10	0.06	0.12	0.25***	0.12	0.11	0.16*	0.14	-0.05	0.05	0.46***	0.29***	0.38***	-0.11	-0.07	-0.01	0.31***	0.05	—

Note. ANGCOND = Anger Condition (0 = EA, 1 = PA). COSTCOND = Cost condition (0 = Low Cost, 1 = High Cost). POS = Positive baseline affect. NEG = Negative baseline affect. MAAS = Trait mindful attention and awareness. FCJE = Five-Factor Curiosity Scale (FCS), Joyous Exploration subscale. FCSC = FCS Social Curiosity subscale. FCDS = FCS Deprivation Sensitivity subscale. FCST = FCS Stress Tolerance Subscale. FCTD = FCS Thrill Seeking subscale. ANG = State anger. DIST = state personal distress. EMPC = state empathic concern. POWR = Group-Focused Interpersonal Transgression scale (GFIT) Power subscale. MORL = GFIT Moral subscale. PRTO = GFIT Protect Others subscale. PRTS = GFIT Protect Self subscale. EMWB = GFIT Emotional Wellbeing subscale. JUST = GFIT Justice subscale. EDUC = GFIT Education subscale. AVD = GFIT Avoidance subscale. EMPT = Trait Cognitive and Affective Empathy scale (QCAE), Perspective Taking subscale. EMOS = QCAE Online Simulation subscale. EMCT = QCAE Emotion Contagion subscale. EMRS = QCAE Proximal responsivity subscale. TEAS = Trait empathic anger. BAQP = Trait physical aggression. BAQV = Trait verbal aggression. BAQA = Trait personal anger. BAQH = Trait hostility. SSIS = Trait sadism. NTB= Trait need to belong.
*$p < .05$, **$p < .01$, ***$p < .001$

Table 3b

Means and Standard Deviations of Study 2 Variables within Anger Conditions

	POS		NEG		MAAS		FCJE		FCDS		FCST		FCSC		FCTS		ANG	
	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA
M	1.51	1.44	3.21	3.05	3.95	3.85	5.24	5.21	4.47	4.36	3.54	3.47	4.96	5.10	4.36	4.26	3.57	4.02
SD	0.63	0.49	0.89	0.85	0.70	0.82	1.12	1.13	1.35	1.29	1.41	1.37	1.24	1.30	1.48	1.47	1.94	2.05
Cronbach's α	0.84		0.84		0.87		0.85		0.84		0.87		0.81		0.86		0.92	

	EMPC		DIST		HAPPY		POWR		MORL		TRTFAIR		SPFUT		EMWB		JUST	
	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA
M	1.83	1.49	2.78	3.11	2.04	1.61	2.63	2.82	4.63	4.31	5.15	5.31	4.21	4.05	4.35	3.96	2.98	3.18
SD	1.11	0.87	1.52	1.63	1.41	1.05	1.64	1.75	1.64	1.67	1.99	1.98	2.13	2.34	1.72	1.60	1.69	1.99
Cronbach's α	0.75		0.85		0.71		0.83		0.77		-		-		0.71		0.84	

	EDUC		AVD		PRTO		EMPT		EMOS		EMCT		EMRS		TEAS		BAQP	
	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA
M	4.18	4.35	3.84	3.64	4.72	4.46	3.15	3.20	3.26	3.22	2.82	2.94	3.08	3.16	3.56	3.74	2.13	2.07
SD	1.82	1.90	1.59	1.43	1.95	1.91	0.50	0.50	0.49	0.52	0.60	0.63	0.56	0.52	0.74	0.78	1.19	1.06
Cronbach's α	0.78		0.54		0.85		0.86		0.82		0.8		0.82		0.81		0.83	

	BAQV		BAQA		BAQH		SSIS		NTB	
	EA	PA	EA	PA	EA	PA	EA	PA	EA	PA
M	3.05	3.08	2.05	2.11	2.44	2.55	1.44	1.44	3.28	3.34
SD	0.93	1.08	0.84	0.83	0.98	1.06	0.49	0.51	0.58	0.64
Cronbach's α	0.79		0.83		0.89		0.74		0.71	

Note. COND = Anger Condition (0 = EA, 1 = PA). POS = Positive baseline affect. NEG = Negative baseline affect. MAAS = Trait mindful attention and awareness. FCJE = Five-Factor Curiosity Scale (FCS), Joyous Exploration subscale. FCSC = FCS Social Curiosity subscale. FCDS = FCS Deprivation Sensitivity subscale. FCST = FCS Stress Tolerance Subscale. FCTD = FCS Thrill Seeking subscale. ANG = State anger. DIST = state personal distress. EMPC = state empathic concern. POWR = Group-Focused Interpersonal Transgression scale (GFIT) Power subscale. MORL = GFIT Moral subscale. TRTFAIR = Self-Protect GFIT of fair treatment. SPFUT = Self-protect GFIT item of future self-protection. EMWB = GFIT Emotional Wellbeing subscale. JUST = GFIT Justice subscale. EDUC = GFIT Education subscale. AVD = GFIT Avoidance subscale. PRTO = GFIT Protect Others subscale. EMPT = Trait Cognitive and Affective Empathy scale (QCAE), Perspective Taking subscale. EMOS = QCAE Online Simulation subscale. EMCT = QCAE Emotion Contagion subscale. EMRS = QCAE Proximal responsivity subscale. TEAS = Trait empathic anger. BAQP = Trait physical aggression. BAQV = Trait verbal aggression. BAQA = Trait personal anger. BAQH = Trait hostility. SSIS = Trait sadism. NTB = Trait need to belong.

Figure 3a

Study 3 Reallocation Decision by Anger and Cost Condition

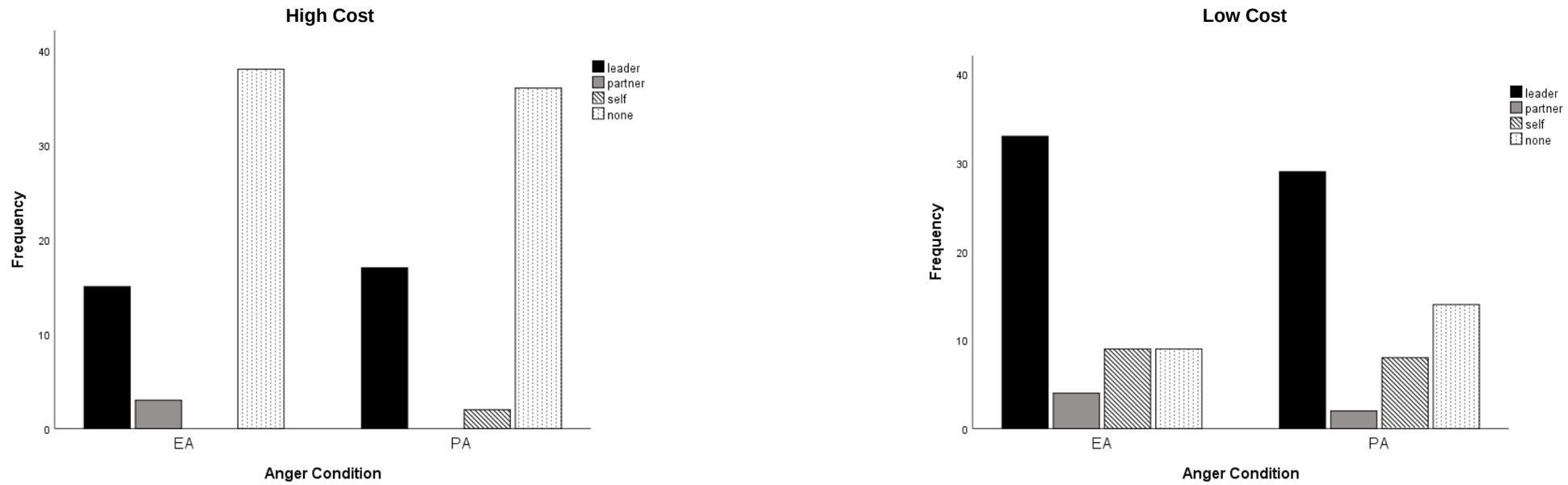


Figure 3b

Study 3 Reallocation Amount to Group Delegator

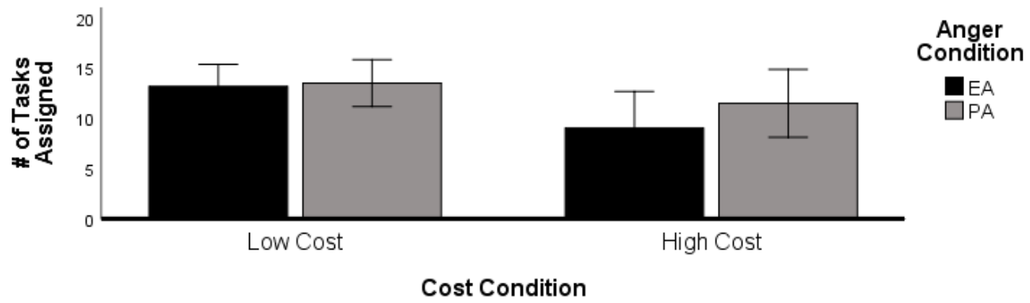
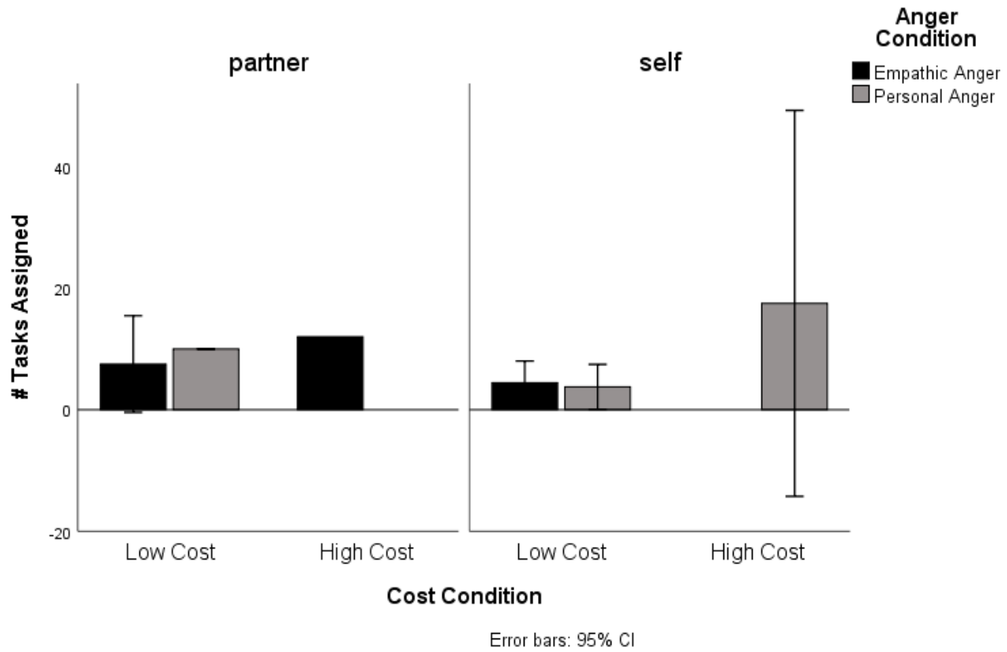


Figure 3c.

Study 3 Reallocation Amount to Group Partner and Self.



Appendix A

Emotion Manipulation Prompts (Study 1)

Personal anger

1) What are the three to five things **that have happened to you to make you most angry**? Please write a sentence or two about each thing that makes you angry. (Examples of things you might write about include: being treated unfairly by someone, being insulted or offended, etc.)

2) Now we'd like you to describe in more detail the one situation that makes you (or has made you) most angry. This could be something you are presently experiencing or something from the past. Remember **this should be something that happens (or has happened) to you personally, not to someone else**. Begin by writing down what you remember of the anger-inducing event and continue by writing as detailed a description of the event as is possible.

If you can, please write your description so that someone reading this might even get angry just from learning about the situation. What is it like to be in this situation? Why does it make you so angry?

(Please write for at least 2-3 minutes)

Empathic Anger

1) What are the three to five things that have **happened to someone else or a group of people to make you most angr**y? Please write a sentence or two about each thing that makes you angry. (Examples of things you might write about include: a group of people being treated unfairly, a friend being insulted or offended, etc.)

2) Now we'd like you to describe in more detail the one situation that happened to another person/people that makes you (or has made you) most angry. This could be something the other person/people are currently experiencing or something from the past. Remember **this should be something that happens (or has happened) to someone else, not you personally**. Begin by writing down what you remember of the anger-inducing event and continue by writing as detailed a description of the event as is possible.

If you can, please write your description so that someone reading this might even get angry just from learning about the situation. What is it like for the other person/people to be in this situation? Why does it make you so angry?

(Please write for at least 2-3 minutes)

Neutral Emotion

1) What are the three to five things **that you like to buy at the grocery store**? Please write a sentence or two about each thing that you tend to buy. (Examples of things you might write about include: what brands you enjoy, what store sections you like best, etc.)

2) Now we'd like you to describe in more detail a normal time you went to the grocery store. This could be a time you went recently, or sometime in the past. Remember **this should be a time you went to the store that was relatively uneventful**. Begin by writing down what you remember of the store trip and continue by writing as detailed a description of what you bought and did at the store as is possible.

If you can, please write your description so that someone reading this might be able to visualize the store and your cart just from your description. What is the store look and feel like? What groceries were in your cart?

(Please write for at least 2-3 minutes)

Appendix B

Discrete Emotions Questionnaire (Modified)

Instructions: rate how strongly you feel each emotion *right now*.

Happy	1 Not at all	2	3	4 A moderate amount	5	6	7 A great deal
Angry	1 Not at all	2	3	4 A moderate amount	5	6	7 A great deal
Lonely	1 Not at all	2	3	4 A moderate amount	5	6	7 A great deal
Calm	1 Not at all	2	3	4 A moderate amount	5	6	7 A great deal
Pissed off	1 Not at all	2	3	4 A moderate amount	5	6	7 A great deal
Panicked	1 Not at all	2	3	4 A moderate amount	5	6	7 A great deal
In a rage	1 Not at all	2	3	4 A moderate amount	5	6	7 A great deal
Worried	1 Not at all	2	3	4 A moderate amount	5	6	7 A great deal
Mad	1 Not at all	2	3	4 A moderate amount	5	6	7 A great deal
Sad	1 Not at all	2	3	4 A moderate amount	5	6	7 A great deal
Empty	1	2	3	4	5	6	7

Not at all	A moderate amount	A great deal

Appendix C

Behavioral Motivation Test and Examples of Behaviors Coded

Instructions:

In the box below, list all of the things you would like to do right now if you were able to do them. Please list at least five things you would like to do.

Appendix D

Social Connectedness Scale (Lee & Robbins, 1995)

Instructions: Rate how much you agree with each statement below.

I feel disconnected from the world around me.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6	7

Even around people I know, I don't feel that I really belong.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6	7

I feel so distant from people.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6	7

I have no sense of togetherness with my peers.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6	7

I don't feel related to anyone.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6	7

I catch myself losing all sense of connectedness with society.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6	7

Even among my friends, there is no sense of brother/sisterhood.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6	7

I don't feel that I participate with anyone from my group.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6	7

Appendix E

Positive and Negative Affect Schedule – Short Form

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Interested	1	2	3	4	5
Distressed	1	2	3	4	5
Upset	1	2	3	4	5
Strong	1	2	3	4	5
Guilty	1	2	3	4	5
Scared	1	2	3	4	5
Hostile	1	2	3	4	5
Enthusiastic	1	2	3	4	5
Proud	1	2	3	4	5
Irritable	1	2	3	4	5
Alert	1	2	3	4	5
Inspired	1	2	3	4	5
Nervous	1	2	3	4	5
Determined	1	2	3	4	5
Attentive	1	2	3	4	5
Jittery	1	2	3	4	5
Active	1	2	3	4	5
Afraid	1	2	3	4	5

Appendix F

State Empathic Responding (Batson Empathic Adjectives Scale and State Empathic Anger Scale)

Instructions: Report the extent to which you felt each of the following emotions when you saw the task directions for you and your partner.

Sympathetic	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Warm	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Soft-hearted	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Moved	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Compassionate	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Tender	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Alarmed	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Upset	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Disturbed	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Distressed	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Worried	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Perturbed	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Grieved	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Troubled	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Mad	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Angry	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Furious	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Resentful	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Irritated	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Enraged	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Aggravated	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Outraged	1 (Not at all)	2	3	4	5	6	7 (Extremely)

Appendix G

Trait Empathic Anger (Vitaglione & Barnett, 2003)

Instructions: Indicate the extent to which each of these statements describes you.

If I see that someone is feeling mad because he or she was mistreated, then I feel mad too.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
When I see someone feeling sad because he or she was hurt by another person, I feel angry.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
I feel angry for other people when they have been victimized by others.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
I feel angry for a person when his or her feelings have been hurt by someone else.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
I get angry when a friend of mine is hurt by someone else.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
When someone I know gets angry at someone else, I feel angry at that person too.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
When I see others being taken advantage of, I don't feel mad for them.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)

Appendix H

Brief Aggression Questionnaire (Webster et al., 2015)

Instructions: Indicate the extent to which each of these statements describes you.

Given enough provocation, I may hit another person.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
If I have to resort to violence to protect my rights, I will.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
There are people who pushed me so far that we came to blows.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
I tell my friends openly when I disagree with them.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
When people annoy me, I may tell them what I think of them.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
My friends say that I'm somewhat argumentative.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
I am an even-tempered person.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
Sometimes I fly off the handle for no good reason.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
I have trouble controlling my temper.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
Other people always seem to get the breaks.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
I sometimes feel that people are laughing at me behind my back.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)
When people are especially nice, I wonder what they want.	1 (Does not describe me at all)	2	3	4	5 (Describes me very well)

Appendix I

Short Sadistic Impulse Scale (O'Meara et al., 2011)

Rate how well each statement below describes you:

Hurting people would be exciting.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I have hurt people because I could.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wouldn't intentionally hurt anyone.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I have hurt people for my own enjoyment.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I have humiliated others to keep them in line	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I would enjoy hurting someone physically, sexually or emotionally.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I enjoy seeing people hurt.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I have fantasies which involve hurting people	1 (Not at all)	2	3	4	5	6	7 (Extremely)
Sometimes I get so angry I want to hurt people	1 (Not at all)	2	3	4	5	6	7 (Extremely)
People would enjoy hurting others if they gave it a go.	1 (Not at all)	2	3	4	5	6	7 (Extremely)

Appendix J

Need to Belong Scale (Leary, Kelly, Cottrell, & Schreindorfer, 2005)

Instructions: For each of the statements below, indicate the degree to which you agree or disagree with the statement by writing a number in the space beside the question using the scale below:

1 = Strongly disagree
2 = Moderately disagree
3 = Neither agree nor disagree
4 = Moderately agree
5 = Strongly agree

_____ 1. If other people don't seem to accept me, I don't let it bother me.

_____ 2. I try hard not to do things that will make other people avoid or reject me.

_____ 3. I seldom worry about whether other people care about me.

_____ 4. I need to feel that there are people I can turn to in times of need.

_____ 5. I want other people to accept me.

_____ 6. I do not like being alone.

_____ 7. Being apart from my friends for long periods of time does not bother me.

_____ 8. I have a strong need to belong.

_____ 9. It bothers me a great deal when I am not included in other people's plans.

____ 10. My feelings are easily hurt when I feel that others do not accept me.

Appendix K

Decisional Goals (Study 2-3)

Think back to your photo task allocation decision (where you chose whether to add or take away tasks from yourself or the other group members). Why did you make that decision? Please indicate the extent to which you were motivated to act by each of the following:

I wanted to maintain control over the situation.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to make it clear that I was in control	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted one or both of the other group members to know they had no power over me.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to do the right thing.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to take the moral high ground.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to act appropriately and constructively.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to keep the group leader from being unfair to anyone.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to make sure group members were treated fairly.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to protect the other group member who was involved in the situation.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to be treated fairly.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to make sure I experienced as few negative consequences as possible.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to keep myself away from a potentially destructive situation.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to be happy about how everything in this study turned out.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to feel good about the situation.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to avoid feeling a sense of regret.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to punish the group delegator.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted justice to be done.	1 (Not at all)	2	3	4	5	6	7 (Extremely)

I wanted the group leader to be hurt as much as I was.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted the group delegator to realize they had made an unfair decision.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted the group delegator to learn from the consequences of their decision.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to teach the group delegator the proper way to behave in a group.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to avoid looking bad to those around me.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted others to respect me.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to avoid looking bad to the other group member(s).	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to avoid a confrontation.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to move on with my life as soon as possible.	1 (Not at all)	2	3	4	5	6	7 (Extremely)
I wanted to avoid making a big deal about it.	1 (Not at all)	2	3	4	5	6	7 (Extremely)

Appendix L

Questionnaire Measure of Cognitive and Affective Empathy (Reniers et al., 2011)

(Excluding peripheral responsivity subscale)

	Strongly disagree	Slightly disagree	Slightly agree	Strongly agree
I sometimes find it difficult to see things from the "other guy's" point of view	1	2	3	4
I try to look at everybody's side of a disagreement before I make my decision	1	2	3	4
I sometimes try to understand my friends better by imagining how things look from their perspective	1	2	3	4
When I am upset at someone, I usually try to "put myself in his shoes" for a while	1	2	3	4
Before criticizing somebody, I try to imagine how I would feel if I was in their place	1	2	3	4
I often get emotionally involved with my friends' problems	1	2	3	4
I am inclined to get nervous when others around me seem to be nervous	1	2	3	4
People I am with have a strong influence on my mood	1	2	3	4
It affects me very much when one of my friends seems upset	1	2	3	4
I get very upset when I see someone cry	1	2	3	4
I am happy when I am with a cheerful group and sad when the others are glum	1	2	3	4
It worries me when others are worrying and panicky	1	2	3	4
I can easily tell if someone else wants to enter a conversation	1	2	3	4
I can pick up quickly if someone says one thing but means another	1	2	3	4
I find it easy to put myself in somebody else's shoes	1	2	3	4
I am good at predicting how someone will feel	1	2	3	4
I am quick to spot when someone in a group is feeling awkward or uncomfortable	1	2	3	4
Other people tell me I am good at understanding how they are feeling and what they are thinking	1	2	3	4
I can easily tell if someone else is interested or bored with what I am saying	1	2	3	4
Friends talk to me about their problems as they say that I am very understanding	1	2	3	4
I can sense if I am intruding, even if the other person does not tell me	1	2	3	4
I can easily work out what another person might want to talk about	1	2	3	4
I can tell if someone is masking their true emotion	1	2	3	4
I am good at predicting what someone will do	1	2	3	4
I can usually appreciate the other person's viewpoint, even if I do not agree with it	1	2	3	4
I always try to consider the other person's feelings before I	1	2	3	4

do something				
Before I do something, I try to consider how my friends will react to it	1	2	3	4

Appendix M

Five-Factor Curiosity Scale (Kashdan et al., 2018)

Items scored on a 1 (Does not describe me at all) to 7 (Describes me completely) scale

Joyous Exploration
I view challenging situations as an opportunity to grow and learn.
I am always looking for experiences that challenge how I think about myself and the world.
I seek out situations where it is likely that I will have to think in depth about something.
I enjoy learning about subjects that are unfamiliar to me.
I find it fascinating to learn new information.

Deprivation sensitivity:
I like to try to solve problems that puzzle me.
Thinking about solutions to difficult conceptual problems can keep me awake at night.
I can spend hours on a single problem because I just can't rest without knowing the answer.
I feel frustrated if I can't figure out the solution to a problem, so I work even harder to solve it.
I work relentlessly at problems that I feel must be solved.

Stress tolerance: (entire subscale reverse-scored)
The smallest doubt can stop me from seeking out new experiences.
I cannot handle the stress that comes from entering uncertain situations.
I find it hard to explore new places when I lack confidence in my abilities.
I cannot function well if I am unsure whether a new experience is safe.
It is difficult to concentrate when there is a possibility that I will be taken by surprise.

Social curiosity:
I like to learn about the habits of others.
I like finding out why people behave the way they do.
When other people are having a conversation, I like to find out what it's about.
When around other people, I like listening to their conversations.
When people quarrel, I like to know what's going on.

Thrill seeking:
The anxiety of doing something new makes me feel excited and alive.
Risk-taking is exciting to me.
I would like to explore a strange city or section of town, even if it means getting lost.
When I have free time, I want to do things that are a little scary.
Creating an adventure as I go is much more appealing than a planned adventure.

Appendix N

Manipulation Check Demographics, and Deception Check Questions

Manipulation Check:

How fair did you think the photo rating task allocation was? (1 = *Not at all fair*, 7 = *Extremely fair*)

[In Study 2] How important was it to you that you got the maximum number of SONA credits [raffle entries] as you could? (1 = *Not at all important*, 7 = *Extremely important*)

Are you acquainted with either of your group members? Yes No Unsure

Have you ever completed any tasks similar to the photo reallocation task before (in a research study or class)? Yes No Unsure

Demographics:

Age: _____

Sex: Male Female Other_____

Race: _____

Deception Check Questions (Sunami et al., 2018)

1) During the study, did you wonder about the purpose of the study or procedures? If so, what did you think the study was about?"
2) "During the study, did any of the procedures or activities seem odd or surprising to you?"
3) "During the study, did you ever think that you were being given false information?"

Participants were asked to give free response answers if applicable to the first two questions, and two respond "Yes" or "No" to the third question. If participants responded "Yes" to question 3, they were additionally asked:

4a) "What information do you think was false?"

4b) “What made you believe that the information was false?”

4c) “At what point in the study did you start to think the information was false?”

4d) “On a scale of 0 (completely guessing) to 100 (completely certain), how certain are you that this info was false?”