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The Interpersonal Effect of Guilt Expressions on Cooperation: The Role of Social Perceptions

by
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Submitted to School of Social Sciences in partial fulfillment of the requirements for the Degree of Master of Philosophy in Psychology

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2018

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Nadhilla Velda Melia

People can make inferences about an individual based on his or her emotional expressions, and these inferences can affect their subsequent behavior. I conducted two experiments to investigate the social perceptions associated with a transgressor's guilt expression after he or she commits a social transgression, and how these would subsequently affect the cooperative behavior of the victims of the transgression. Study 1 demonstrated that there was an indirect effect of a transgressor's guilt expression on a victim's cooperation via the victim's perception of the transgressor's benevolence, but not via the victim's perception of the transgressor's perspective-taking. Study 2 showed partial support for an indirect effect of a transgressor's benevolence, but not a transgressor's perspective-taking, on a victim's cooperation via the victim's perception of the transgressor's guilt emotions. The results also suggest a bidirectional relationship between a victim's perceptions of a transgressor's guilt and benevolence, such that one can be inferred from the other. This research suggests the mechanisms regarding the appeasement function of guilt (i.e. through social perceptions) and illustrates how relationships may be repaired after a social transgression by examining social transgressions from the perspective of the victim, rather than the transgressor.

Keywords: cooperation, guilt expressions, perspective-taking, benevolence

Table of Contents

Acknowledgements

I would like to thank my supervisor, Assistant Professor Tsai Ming-Hong, for his guidance and advice throughout the entire duration of this project. His expertise on research in interpersonal perceptions and cooperation has been extremely helpful in the conception of this project. His patience, support, and kindness have also been invaluable to me throughout this project and beyond.

I would also like to thank my committee members, Associate Professors William Tov and Norman Li, for their feedback and guidance. Their expertise on emotions and evolutionary psychology, respectively, has helped to improve this project tremendously.

I would also like to thank my fellow peers, Indra, Hui Si, Sean, and Rowlin, for being great sounding boards for brainstorming and discussions and who enable me to think more deeply about this project and my research ideas in general. Their diverse perspectives and encouragement have greatly inspired me and allowed me to improve this project.

Finally, I would like to thank my friends and family for their constant support and encouragement throughout this process. Their unwavering belief in me has kept me going throughout the more challenging parts of this project.

Introduction

Social transgressions are inevitable in human relationships. Previous research has investigated social transgressions in a wide variety of domains, such as romantic relationships (Luchies et al., 2013), the workplace (Okimoto & Wenzel, 2014), politics (Gonzales, Kovera, Sullivan, & Chanley, 1995), and child development (Smetana, 1984). Research has also shown the negative consequences of committing a social transgression, such as punishment (Fehr & Gächter, 2002) and the dissolution of the relationship altogether (Fu, Wu, & Wang, 2009). Given the pervasiveness of social transgressions and their consequences in our everyday lives, it is important to understand how human relationships can recover from such transgressions. Certain emotion expressions can play a vital role in this recovery. Going as far back as Darwin (1872), researchers (Schmidt & Cohn, 2001; Shariff & Tracy, 2011) have proposed that emotion expressions first evolved to enable an organism to respond appropriately to environmental stimuli and eventually, as social relationships became more and more essential for survival, these expressions evolved to serve the function of communicating important social information. Van Kleef's (2009) Emotions as Social Information (EASI) model supports this proposed evolutionary function and further suggests that emotional expressions affect others' behavior through inferential processes about the expresser's feelings, attitudes, and intentions. The EASI model provides an important foundation for the study of the interpersonal effects of emotion expressions and their role in the maintenance of human relationships. The present investigation explores the perceptions associated with guilt expressions specifically and their impact on perceivers' cooperative behavior in a social transgression situation.

Guilt refers to an individual's unpleasant emotional state associated with possible objections to his or her behavior (Baumeister, Stillwell, & Heatherton, 1994). Baumeister et al.

1

(1994) propose that guilt is an interpersonal emotion and is fundamentally social in nature. Guilt is usually experienced after an individual commits a social transgression, and this emotion motivates the individual to engage in acts that could make up for the transgression (Tangney, Miller, Flicker, & Barlow, 1996). Guilt is often confused with shame and embarrassment since these emotions may also arise after committing a transgression (Baumeister et al., 1994; Keltner, 1996). However, guilt can be distinguished from shame and embarrassment on the basis of specificity. Guilt is typically focused on the transgression itself (Tangney et al., 1996) and is associated with responses that are aimed at rectifying the damage caused by the transgression (Ketelaar & Au, 2003). On the other hand, shame and embarrassment are typically focused on the entire self as a whole (Lewis, 1971) and lead to negative self-evaluations, such as feelings of inadequacy, inferiority, and worthlessness, as well as withdrawal behaviors (Tangney et al., 1996), although embarrassment is much milder and more transient (Buss, 1980). Thus, guilt has a more specific focus than shame and embarrassment. Although guilt may be an unpleasant and undesirable feeling, several researchers have proposed positive functions of the emotion of guilt. Evolutionary theorists propose that guilt is an adaptation for preventing us from performing acts that may damage our relationships with others, which are vital to survival and reproduction (Trivers, 1985). Baumeister et al. (1994) also propose that guilt expressions have an appeasement function as they may mitigate the severity of any negative reactions from others after a social transgression.

Due to the focus on emotion expressions in this paper, it is important to outline what constitutes a guilt expression. Several emotions, such as anger, sadness, disgust, fear, and happiness, have distinct universal facial expressions associated with them (Ekman & Friesen, 1971). However, Keltner (1996) found that guilt does not seem to have a reliably distinct facial

expression. Rather, guilt seems to be expressed more via verbal expressions of confession and apology and reparative behavior (Aune, Metts, & Ebesu-Hubbard, 1998; Hareli & Eisikovits, 2006). Apologies must both admit responsibility for the transgression and express remorse (Scher & Darley, 1997), both of which are fundamental to the concept of guilt. For example, a study on the experience and expression of guilt in married couples (Guerrero, La Valley, & Farinelli, 2008) and in the workplace (O'Neill, 2009) measured guilt via apology/concession and explanations/justifications items. Researchers also typically manipulate guilt expressions via written statements of guilt (Kamau, Giner-Sorolla, & Zebel, 2013; Van Kleef, De Dreu, & Manstead, 2006). Based on this existing research, this paper will focus on verbal expressions of guilt, such as statements of apology, rather than non-verbal facial expressions.

Previous research has suggested that guilt expressions communicate interpersonal sensitivity and a willingness to appreciate another's perspective, as well as signal a concern for another individual (Van Kleef et al., 2006). In turn, these perceptions of a person's willingness to appreciate another's perspective and concern for others have been found to elicit cooperative behavior from perceivers (Gächter, Herrmann, & Thöni, 2004; Goldstein, Vezich, & Shapiro, 2014). Hence, in this paper, I identified perceptions of a transgressor's perspective-taking and benevolence as essential social perceptions that are associated with a transgressor's guilt expression and that can elicit a victim's cooperation. Perspective-taking, or cognitive empathy, is defined as the ability to understand another's point of view (M. H. Davis, 1983). Benevolence is defined as the extent to which an individual is believed to be willing to benefit others (Mayer, Davis, & Schoorman, 1995). In contrast to most of the existing research on social transgressions which focus on the actions of the transgressor and provide abundant support that the experience of guilt causes the transgressor to engage in appeasing behaviors (Ahn, Kim, & Aggarwal, 2014;

Berscheid & Walster, 1967; Cunningham, Steinberg, & Grev, 1980; De Hooge, Zeelenberg, & Breugelmans, 2007; Ketelaar & Au, 2003), this research is one of the few that focuses on the *victim's* own behavior and responses to a transgressor's appeasement attempts. Based on the EASI Model (Van Kleef, 2009), I believe that social perceptions are the key to understanding victims' responses and this investigation serves as the pioneering research that empirically explores the indirect effect of a transgressor's guilt expression on a victim's cooperation via social perceptions.

Perceptions of Perspective-Taking

It has been proposed that an individual feels guilt when he or she recognizes that another is distressed, suggesting that an individual must engage in perspective-taking in order to feel guilty in the first place (Hoffman, 1982). Perspective-taking also serves as an important cue that a relational partner understands and cares about us (Koenig, Willer, & Trees, 2013), which are important qualities for relationship repair (Steiner, 2000). Perspective-taking has also been identified as an essential component of potential responses in interpersonal conflict (M. H. Davis, Capobianco, & Kraus, 2004), which can include situations of social transgressions. For example, in the context of bullying in the workplace, it has been found that perceptions of an offender's perspective-taking positively influenced victims' conciliatory attitudes (Berndsen, Wenzel, Thomas, & Noske, 2017), which can help to resolve the interpersonal conflict. Thus, the perception of a transgressor's perspective-taking is an important construct to consider when investigating how guilt expressions can play a role in relationship repair after a social transgression.

Guilt expressions may signal high levels of perspective-taking. Guilt is associated with several other-focused responses, such as cooperative (De Hooge et al., 2007; Ketelaar & Au,

2003), helping (Ahn et al., 2014; Cunningham et al., 1980), and apology behavior (Howell, Turowski, & Buro, 2012), as well as a willingness to compensate the victim (Berscheid & Walster, 1967). Such appeasement responses are likely to require an understanding of the victim's perspective in two ways. Firstly, the transgressor must be able to understand that his or her transgression has had negative consequences for the victim in order to even realize that amends need to be made (Batson, 1991). Secondly, the transgressor who wishes to make amends must be able to identify what actions he or she can take in order to successfully rectify the situation and restore the victim's positive attitude toward him or herself (Coke, Batson, & McDavis, 1978; Leith & Baumeister, 1998; Stearns & Parrott, 2012). Thus, the guilty transgressor is likely to have higher levels of perspective-taking than the non-guilty transgressor. This is supported by previous research, which found that guilt-prone people (Leith & Baumeister, 1998) and people who were experiencing guilt (Yang, Yang, & Chiou, 2010) were better at perspective taking. Furthermore, Hareli and Eisikovits (2006) suggest that guilt expressions signal awareness of the negative consequences caused by a transgression, which requires perspective-taking. Thus, I propose the following hypothesis:

Hypothesis 1a: A transgressor's guilt expression is positively related to a victim's perception of the transgressor's perspective-taking.

A victim who perceives the transgressor as high in perspective-taking may in turn exhibit cooperation and cooperation-relevant responses towards the transgressor. A victim may perceive a transgressor who has high levels of perspective-taking to be able to understand and prioritize the victim's own needs and wants (Batson, Turk, Shaw, & Klein, 1995; Blumer, 1969; Galinsky, Ku, & Wang, 2005). Since people respond positively when they are understood (Swann, 1987), this may in turn increase the victim's willingness to cooperate with the transgressor. A victim

may also be more likely to cooperate with a transgressor who is perceived as high in perspective-taking because perspective-takers are able to engage in behaviors that can mitigate the threat associated with cooperation (Williams, 2007). Previous research also demonstrated that when an individual perceived that another had taken their perspective, they would offer more help to the perspective taker (Goldstein et al., 2014). A victim's perception of a transgressor's perspective-taking also leads the victim to forgive the transgressor (Berndsen et al., 2017) and facilitates trust repair between the victim and the transgressor (Williams, 2012), leading to greater cooperation in the future (Karremans & Van Lange, 2004; Mayer et al., 1995). Thus, I propose the following hypotheses:

Hypothesis 1b: A victim's perception of a transgressor's perspective-taking is positively related to the victim's cooperation.

Hypothesis 1c: A transgressor's guilt expression is indirectly and positively related to a victim's cooperation via the victim's perception of the transgressor's perspective-taking.

Perceptions of Benevolence

The Stereotype Content Model (Fiske, Cuddy, & Glick, 2007) proposes that all interpersonal perceptions form along the dimensions of warmth and competence. According to the EASI model (Van Kleef, 2009), emotion expressions are likely to provide information for such perceptions to occur. The Stereotype Content Model also highlights the primacy of warmth judgments, suggesting that people are more sensitive to warmth information as compared to competence information. Warmth perceptions are an indication of another person's intent for good (i.e. their benevolence; DeRue, Nahrgang, & Ashford, 2015; Rom, Weiss, & Conway, 2017). Taken together, the Stereotype Content Model and the EASI model suggest that emotion expressions can provide information regarding an expresser's benevolence. For example, it has

been found that a leader's expression of a positive emotion, such as gratitude, positively influenced followers' perceptions of the leader's benevolence (Ritzenhöfer, Brosi, Spörrle, & Welpe, 2017). Wojciszke (2005) further suggests that information regarding an individual's benevolence is more relevant than competence information when interpreting the transgressive acts of others. Thus, it is likely that perceptions of benevolence would be salient following another's expression of guilt after a social transgression. Moreover, following a social transgression, there is an imbalance of esteem within a dyad with the victim having less esteem than the transgressor (Baumeister et al., 1994). Equity theory (Walster, Berscheid, & Walster, 1973) proposes that when the distribution of assets in a relationship (including esteem) is inequitable, individuals will experience distress. The theory proposes that an apology (i.e. a guilt expression) from a transgressor may restore the balance of esteem in a relationship by conveying signals of courtesy, effort, and concern towards the victim (Smith, Bolton, & Wagner, 1999), which are also signals of benevolence. Thus, benevolence seems to be a key perception associated with guilt expressions in social transgression situations.

Given the proactive nature and prosocial responses associated with feelings of guilt, an expression of guilt may indicate to others, especially the victim of the transgression, that the transgressor is committed to making amends to rectify the situation (Baumeister et al., 1994). Thus, the victim is more likely to trust that a guilty transgressor will treat them better in the future compared to a non-guilty transgressor. This is supported by Levine, Bitterly, Cohen, and Schweitzer (2018), who found that guilt-proneness predicts benevolence-based trustworthiness. Furthermore, previous research found that a leader's apology (i.e. a guilt expression) is effective for re-establishing trust, including benevolence-based trust, among followers (Haesevoets et al., 2016) and that organizations which make use of affective recovery efforts, such as apologies,

improve perceptions of their benevolence (Xie & Peng, 2009). Apologies also signal ethical conduct and a concern for others (Byrne, Barling, & Dupré, 2014), which would indicate high benevolence. Thus, I propose the following hypothesis:

Hypothesis 2a: A transgressor's guilt expression is positively related to a victim's perception of the transgressor's benevolence.

An individual's perception of an actor's benevolence may be positively associated with the individual's willingness to cooperate with the actor. For example, previous research found that strong perceptions of trust, such as benevolence-based trust, positively influence cooperative behavior in social dilemmas (De Cremer, Snyder, & Dewitte, 2001). An individual's belief in others' benevolence is also positively correlated to the individual's cooperative behavior with others (Gächter et al., 2004). Relatedly, affect-based trust toward a peer (i.e., a belief that an individual is benevolent), rather than cognition-based trust, is more likely to increase cooperation (Ng & Chua, 2006) and is positively related to the amount of interpersonal helping behavior directed toward the peer (McAllister, 1995). Perceptions of benevolence can also influence cooperation in tasks. For example, perceptions of others' benevolence are positively associated with idea sharing (Chua, Morris, & Mor, 2012) and knowledge sharing (Usoro, Sharratt, Tsui, & Shekhar, 2007). Thus, I propose the following hypotheses:

Hypothesis 2b: A victim's perception of a transgressor's benevolence is positively related to the victim's cooperation.

Hypothesis 2c: A transgressor's guilt expression is indirectly and positively related to a victim's cooperation via the victim's perception of the transgressor's benevolence.

The Present Research

In order to test the relationships between a transgressor's guilt expression, a victim's perception of the transgressor's perspective-taking, a victim's perception of the transgressor's benevolence, and a victim's cooperation, two studies were conducted. The first study was an experimental study aimed at investigating the indirect effect of a transgressor's guilt expression on a victim's cooperative behavior towards the transgressor via the victim's perceptions of the transgressor's perspective-taking and benevolence. In this study, the transgressor's guilt or neutral expression was manipulated in the context of an allocation game and participants were the victims of a social transgression. The second study was an experimental study aimed at investigating the indirect effect of a transgressor's perspective-taking, as well as a transgressor's benevolence, on a victim's cooperation via the victim's perception of the transgressor's guilt. The purpose of this study was to test for the possibility that guilt is inferred from perspective-taking and benevolence, rather than perspective-taking and benevolence being inferred from guilt expressions, and that it is the perception of a transgressor's guilt that will lead to a victim's cooperative behavior towards the transgressor. In this study, the transgressor's perspective-taking and benevolence were manipulated in a scenario-based study and participants were asked to imagine themselves as victims of a transgression. These two studies together will help to clarify the exact nature of the relationship between a transgressor's guilt expression and perceptions of the transgressor's perspective-taking and benevolence, and their subsequent relation to a victim's cooperative behavior. I predetermined the minimum sample size based on available resources and the most recent and relevant research (e.g. Shore & Parkinson, 2017). I stopped gathering data within one academic semester for both studies. I performed data analyses only after stopping data collection.

9

Study 1

Participants

I recruited 222 university student participants (72.5% female; age: $M = 21.13$, $SD = 1.64$; number of years of working experience: $M = 1.31$, $SD = 1.35$) in Singapore. Students were awarded course credit for their participation and participants were given a chance to earn an extra $2.50 Singapore Dollars if they were one of the top 3 participants who earned the most points in the allocation game.

Procedure and Measures

Participants entered the lab and were seated at individual cubicles. Participants were informed that they would be playing the Dictator Game online with a randomly assigned counterpart for an unknown number of rounds. In the Dictator Game developed by Kahneman, Knetsch, and Thaler (1986), there are two players – the Dictator and the Recipient. The Dictator is given 100 points that he or she can split in any way he or she chooses with the Recipient whereas the Recipient simply receives the amount of points that the Dictator assigns to him or her. Participants were given instructions on how to play the Dictator Game and they also read that the role of Dictator and Recipient would be randomly assigned in each round. Participants were also informed that the top three participants with the highest total number of points would receive an extra $2.50. They also read that they may exchange messages with their counterpart after each round. After reading the instructions, participants answered some questions and received feedback on their answers to ensure that they understood the rules of the game.

After inputting their initials, participants were shown a page with a loading animation while they were informed that they were randomly being assigned to a counterpart. The loading animation was used to enhance the believability that they were indeed being paired with a real

person when in fact their counterpart was actually a computer simulation. Participants were then

informed that "SM" (the initials of the paired counterpart) had been randomly assigned to be

their counterpart. All of SM's responses were pre-programmed. They also read that for the first

round, they had been randomly selected to be the Recipient whereas SM had been randomly

selected to be the Dictator. They were then presented with another loading animation while SM

allocated the points. All participants were informed that SM had decided to give them zero

points. Participants were then informed that SM was writing them a message while being

presented with another loading animation. Participants in the guilt expression condition received

the message: "Hi [Participant's initials]. I feel guilty about my actions in the previous round. I

feel very sorry and regret my actions." Participants in the neutral expression condition received

the message: "Hi [Participant's initials]." These manipulations followed the work of Kamau et

al. (2013) and Van Kleef et al. (2006). Participants were also given a chance to send their own

message to SM if they wished.

As a manipulation check, participants were then asked to rate how much they thought SM

was feeling certain emotions "right now" using the 20-item positive affect and negative affect

scale (PANAS) (Watson, Clark, & Tellegen, 1988) on a scale of 1 (not at all) to 5 (a great deal).

The item of interest was the 'Guilty' item. Participants were also asked to rate their perceptions

of SM's feelings "right now" using the Guilt subscale of the State Shame and Guilt Scale (SSGS)

(Marschall, Sanftner, & Tangney, 1994). This subscale consisted of 5 items ($\alpha = 0.95$) on a 5-

point scale (1 = not at all, 5 = a great deal) and sample items included: "SM feels remorse,

regret," "SM feels tension about what s/he did," and "SM cannot stop thinking about the bad

thing s/he did."

Participants were then asked to rate their perceptions of SM's perspective-taking using 4 items ($\alpha = 0.92$) adapted from the Perspective-taking subscale of the State Empathy scale (Shen, 2010). Sample items included: "SM can see my point of view," "SM can recognize my situation," and "SM can understand what I am going through." These items were rated on a 5-point scale (1 = not at all, 5 = completely). Participants also rated their perceptions of SM's benevolence using 3 items ($\alpha = 0.94$) adapted from Levin and Cross (2004). The items included: "SM would now look out for my interests," "SM would now go out of his or her way to make sure I am not damaged or harmed," and "SM would now care what happens to me." These items were rated on a 7-point scale (1 = strongly disagree, 7 = strongly agree). The order in which these two scales were presented to participants were randomized in order to reduce common method bias by controlling for possible priming effects, induced mood states, and other biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

After completing these scales, participants were told that it was time for the second round of the Dictator Game. In this round, they were told that they had been randomly selected to be the Dictator whereas SM had been randomly selected to be the Recipient. They then entered the number of points they wished to give to SM out of a total of 100. The higher the number of points they allocated to SM, the higher their level of cooperation (Brosig, 2002). After inputting the number of points, participants were told that the Dictator Game had come to an end. Participants were then probed for suspicion. None of the participants could guess the hypothesis or suspected that SM was not a real person. Participants were then asked to fill in some demographics such as their age, gender, and number of years of work experience. Finally, participants were thanked and debriefed.

Results

Descriptive statistics and correlations for the focal variables are presented in Table 1.

Manipulation check. The results demonstrated the effectiveness of the manipulations. The *t*-test results demonstrated significant differences in perceptions regarding a transgressor's guilt expression, SSGS: $t(220) = -7.49$, $p < .001$, Cohen's $d = 0.99$; PANAS: $t(220) = -6.18$, $p < .001$, Cohen's $d = 0.82$. Specifically, participants in the guilt expression condition (SSGS: $M = 2.58$, $SD = 1.13$; PANAS: $M = 2.94$, $SD = 1.39$) perceived the transgressor as feeling more guilty than those in the neutral expression condition (SSGS: $M = 1.61$, $SD = 0.79$; PANAS: $M = 1.93$, $SD = 1.04$).

The effects of a transgressor's guilt expression. I conducted ANOVAs to examine the effects of a transgressor's guilt expression. Participants' cooperative behavior did not significantly differ between the guilt expression condition ($M = 30.07$, $SD = 27.35$) and the neutral expression condition ($M = 34.54$, $SD = 30.11$), $F(1, 220) = 1.34$, $p = .249$, $\eta_p^2 = .01$. However, the effect of a transgressor's guilt expression on perceptions of the transgressor's perspective-taking was significant, with participants in the guilt expression condition ($M = 2.94$, $SD = 1.16$) perceiving the transgressor as higher in perspective-taking than those in the neutral expression condition ($M = 2.36$, $SD = 1.10$), $F(1, 220) = 14.73$, $p < .001$, $\eta_p^2 = .06$, which supported Hypothesis 1a. The effect of a transgressor's guilt expression on perceptions of the transgressor's benevolence was also significant, with participants in the guilt expression condition ($M = 3.35$, $SD = 1.53$) perceiving the transgressor as higher in benevolence than those in the neutral expression condition ($M = 2.67$, $SD = 1.33$), $F(1, 220) = 12.67$, $p < .001$, $\eta_p^2 = .05$, which supported Hypothesis 2a.

The effects of a transgressor's guilt expression via social perceptions. I used ordinary

least squares (OLS) regression analyses and bootstrapping to examine indirect effects of a

transgressor's guilt expression on participants' cooperation via the participants' perceptions of

the transgressor's perspective-taking and benevolence. The results are presented in Table 2.

The results of Model 1 demonstrated that a transgressor's guilt versus neutral expression

was not significantly associated with participants' cooperation (B = -4.47, S_E = 3.87, p = .249).

Models 2 and 3 demonstrated that a transgressor's guilt versus neutral expression was

significantly positively associated with perceptions of the transgressor's perspective-taking (B =

0.58, S_E = 0.15, p < .001) and benevolence (B = 0.69, S_E = 0.19, p < .001), which supported

Hypotheses 1a and 2a. The results of Model 4 demonstrated that when controlling for a

transgressor's emotion expression, perceptions of the transgressor's benevolence was

significantly positively associated with participants' cooperation (B = 3.74, S_E = 1.37, p = .007),

which supported Hypothesis 2b. However, perceptions of the transgressor's perspective-taking

was not significantly associated with participants' cooperation (B = -1.27, S_E = 1.73, p = .466),

which did not support Hypothesis 1b.

The indirect effect of a transgressor's guilt expression on participants' cooperation via

perceptions of the transgressor's perspective-taking and benevolence were tested simultaneously

using the bootstrapping method with 5000 repetitions. The results demonstrated significant

indirect effects of a transgressor's guilt versus neutral expression on participants' cooperation via

perceptions of the transgressor's benevolence (B = 2.56, SE = 1.32, 0.43 < 95% CI < 5.57),

which supported Hypothesis 2c. However, the results demonstrated non-significant indirect

effects of a transgressor's guilt versus neutral expression on participants' cooperation via

perceptions of the transgressor's perspective-taking (B = -0.74, SE = 1.05, -2.78 < 95% CI < 1.45), which did not support Hypothesis 1c.

Discussion

The results of Study 1 supported the hypothesis that a transgressor's guilt expression is indirectly and positively related to a victim's cooperation via the victim's perception of the transgressor's benevolence. However, the hypothesis that a transgressor's guilt expression is indirectly and positively related to a victim's cooperation via the victim's perception of the transgressor's perspective-taking was not supported.

Study 2

In this study, a transgressor's perspective-taking and benevolence were manipulated in a scenario-based study. The purpose of this study was to test for the possibility that guilt is inferred from perspective-taking and benevolence rather than perspective-taking and benevolence being inferred from guilt expressions, and that the perception of a transgressor's guilt will lead to a victim's cooperative behavior towards the transgressor. People have prototypes of emotions and these can be used to infer others' emotional states even if the emotion is not explicitly expressed (Oatley, 1999). For example, trait anger has been found to be inferred from a target's formidability and malevolence (Galperin, Fessler, Johnson, & Haselton, 2013). Infants also exhibited prosocial responses toward an experimenter who was transgressed against, suggesting that infants were able to infer the experimenter's distress from being the victim of a transgression (Vaish, Carpenter, & Tomasello, 2009). The prototype of the emotion of guilt may include perspective-taking and benevolence behaviors (Baumeister et al., 1994; Hoffman, 1982). For example, people can infer an offender's felt remorse from the offender's ability to perspective-

15

take (Berndsen et al., 2017). Hence, people may attribute guilt to those demonstrating perspective-taking and benevolence in a social transgression situation. In this scenario study, a transgressor's perspective-taking and benevolence were manipulated and participants' perception of the transgressor's guilt was measured. The emotion of guilt usually arises in a social transgression situation therefore the scenario asked participants to imagine themselves in a situation where someone transgressed against them. The study followed a 2 (perspective-taking: high vs low) x 2 (benevolence: high vs low) between-subjects design.

Participants

I recruited 205 university student participants (69.8% female; age: $M = 21.78$, $SD = 1.66$; number of years of working experience: $M = 1.67$, $SD = 1.81$) in Singapore. Participants were randomly assigned to the following four conditions: high perspective-taking and high benevolence ($N = 52$), high perspective-taking and low benevolence ($N = 53$), low perspective-taking and high benevolence ($N = 51$), and low perspective-taking and low benevolence ($N = 49$).

Procedure and Measures

Participants read a scenario and were asked to imagine themselves in the scenario. The transgression scenario with the manipulations of high [low] perspective-taking and high [low] benevolence read as follows:

> Imagine that you have an individual project for one of your classes. Your classmate is also in this class with you and is struggling to think of any ideas. Your classmate asks you for advice and you give some suggestions using your own idea as an example. The time for the presentation arrives. Your classmate's presentation is in the week before yours. As you watch

your classmate's presentation, you realize that your classmate completely stole your idea and is passing off your idea as their own. Knowing that you are watching the presentation, your classmate is able to understand your responses from your point of view. He or she can recognize your current situation and understand what you are going through. [Although you are watching the presentation, your classmate is not able to understand your responses from your point of view. He or she cannot recognize your current situation or understand what you are going through.] After the presentation, your classmate looks out for your interests. He or she goes out of his or her way to make sure you are not harmed. He or she also cares about what happens to you. [After the presentation, your classmate does not look out for your interests. He or she does not go out of his or her way to make sure you are not harmed. He or she also does not care about what happens to you.]

After reading the scenario, participants rated how much they thought the classmate was feeling certain emotions "right now" using the 20-item PANAS scale and the Guilt subscale of the SSGS ($\alpha = 0.94$) as in Study 1.

Then, participants were presented with two measures of cooperation, whose order of presentation was randomized. First, cooperation was measured with a modified version of the Everyday Cooperation Scale (ECS) (De Hooge et al., 2007) which consisted of 9 items ($\alpha = 0.88$) on an 11-point scale (1 = not at all, 11 = very much). Sample items included: "I would like to help my classmate while others are looking at me," "I would like to help my classmate when s/he does not know who is helping," and "I would like to comfort my classmate if s/he is

emotionally very upset." Second, cooperation was also measured with a modified version of the

Social Value Orientation (SVO) scale (Van Lange, 1999). Participants were asked to imagine

that that they would be allocating points for themselves and the classmate. There were 9 items (α

= 0.98) and 3 possible responses for each item. The cooperative response was the one where the

participant maximized the combined payoff for the self and the other. The individualistic

response was the one where the participant maximized the payoff for the self and disregarded the

payoff for the other. The competitive response was the one where the participant maximized the

difference between the payoff for the self and the other. The number of cooperative responses

was the dependent variable.

As a manipulation check, participants also rated their perceptions of the classmate's

perspective-taking and benevolence using the scales in Study 1. Finally, participants filled in

some demographics as in Study 1, and were thanked and debriefed.

Results

Descriptive statistics and correlations for the focal variables are presented in Table 3.

Manipulation check. The results demonstrated the effectiveness of the manipulations.

The *t*-test results demonstrated significant differences in perceptions regarding a transgressor's

perspective-taking, $t(203) = -4.19$, $p < .001$, Cohen's $d = 0.58$. Specifically, participants in the

high perspective-taking condition ($M = 3.32$, $SD = 0.92$) perceived the transgressor as higher in

perspective-taking than those in the low perspective-taking condition ($M = 2.74$, $SD = 1.07$). The

t-test results also demonstrated significant differences in perceptions regarding a transgressor's

benevolence, $t(203) = -6.79$, $p < .001$, Cohen's $d = 0.95$. Specifically, participants in the high

benevolence condition ($M = 4.53$, $SD = 1.43$) perceived the transgressor as higher in benevolence

than those in the low benevolence condition ($M = 3.13$, $SD = 1.51$).

The effects of a transgressor's perspective-taking and benevolence. I conducted two-way ANOVAs to examine the effects of a transgressor's perspective-taking and benevolence. Participants' cooperative behavior did not significantly differ between the low perspective-taking condition (ECS: $M = 4.78$, $SD = 0.20$; SVO: $M = 3.59$, $SD = 0.39$) and the high perspective-taking condition (ECS: $M = 4.81$, $SD = 0.19$; SVO: $M = 3.20$, $SD = 0.38$), ECS: $F(1, 201) = 0.01$, $p = .919$, $\eta_p^2 = .00$; SVO: $F(1, 201) = 0.51$, $p = .475$, $\eta_p^2 = .00$. Participants' cooperative behavior also did not significantly differ between the low benevolence condition (ECS: $M = 4.57$, $SD = 0.20$; SVO: $M = 3.34$, $SD = 0.39$) and the high benevolence condition (ECS: $M = 5.02$, $SD = 0.20$; SVO: $M = 3.46$, $SD = 0.39$), ECS: $F(1, 201) = 2.65$, $p = .105$, $\eta_p^2 = .01$; SVO: $F(1, 201) = 0.05$, $p = .833$, $\eta_p^2 = .00$. The interaction effect between perspective-taking and benevolence on cooperation was also not significant, ECS: $F(1, 201) = 0.21$, $p = .650$, $\eta_p^2 = .001$; SVO: $F(1, 201) = 0.77$, $p = .381$, $\eta_p^2 = .00$.

Participants' perceptions of the transgressor's guilt emotions also did not significantly differ between the low perspective-taking condition (PANAS: $M = 2.75$, $SD = 0.14$; SSGS: $M = 2.44$, $SD = 0.10$) and the high perspective-taking condition (PANAS: $M = 2.87$, $SD = 0.13$; SSGS: $M = 2.65$, $SD = 0.09$), PANAS: $F(1, 201) = 0.39$, $p = .532$, $\eta_p^2 = .002$; SSGS: $F(1, 201) = 2.50$, $p = .115$, $\eta_p^2 = .01$. However, the effect of a transgressor's benevolence on perceptions of a transgressor's guilt emotions was significant, with participants in the low benevolence condition (PANAS: $M = 2.34$, $SD = 0.14$; SSGS: $M = 2.06$, $SD = 0.10$) perceiving the transgressor as feeling less guilt than those in the high benevolence condition (PANAS: $M = 3.28$, $SD = 1.14$; SSGS: $M = 3.02$, $SD = 0.10$), PANAS: $F(1, 201) = 23.92$, $p < .001$, $\eta_p^2 = .11$; SSGS: $F(1, 201) = 51.68$, $p < .001$, $\eta_p^2 = .21$. The interaction effect between perspective-taking and benevolence on

perceptions of guilt was not significant, PANAS: $F(1, 201) = 0.21$, $p = .647$, $\eta_p^2 = .001$; SSGS: $F(1, 201) = 0.39$, $p = .535$, $\eta_p^2 = .002$.

The effects of a transgressor's perspective-taking and benevolence via perceptions of guilt. I used ordinary least squares (OLS) regression and bootstrapping to examine indirect effects of a transgressor's perspective-taking and benevolence on participants' cooperation via the participants' perceptions of the transgressor's guilt emotions. The results are presented in Tables 4 and 5.

The results of Models 1 and 2 demonstrated that a transgressor's perspective-taking (ECS: $B = 0.45$, $S_E = 0.28$, $p = .107$; SVO: $B = -0.39$, $S_E = 0.55$, $p = .477$) and benevolence (ECS: $B = 0.03$, $S_E = 0.28$, $p = .920$; SVO: $B = 0.13$, $S_E = 0.55$, $p = .816$) was not significantly associated with participants' cooperation.

PANAS measure of guilt. Model 3 demonstrated that a transgressor's benevolence was significantly positively associated with perceptions of the transgressor's guilt ($B = 0.94$, $S_E = 0.19$, $p < .001$), but the transgressor's perspective-taking was not ($B = 0.12$, $S_E = 0.19$, $p = .530$). The results of Models 4 and 5 demonstrated that when controlling for a transgressor's perspective-taking and benevolence, perceptions of the transgressor's guilt was not significantly associated with participants' cooperation (ECS: $B = 0.17$, $S_E = 0.10$, $p = .095$; SVO: $B = 0.07$, $S_E = 0.20$, $p = .725$).

The indirect effect of a transgressor's benevolence, as well as a transgressor's perspective-taking, on participants' cooperation via perceptions of the transgressor's guilt were tested using the same bootstrapping method as in Study 1. The results demonstrated non-significant indirect effects of a transgressor's benevolence (ECS: $B = 0.16$, $SE = 0.10$, $-0.02 < 95\%$ $CI < 0.38$; SVO: $B = 0.06$, $S_E = 0.19$, $-0.31 < 95\%$ $CI < 0.44$) and a transgressor's

perspective-taking (ECS: $B = 0.02$, $SE = 0.05$, $-0.07 < 95\%$ $CI < 0.13$; SVO: $B = 0.01$, $S_E = 0.05$, $-0.08 < 95\%$ $CI < 0.12$) on participants' cooperation via perceptions of the transgressor's guilt.

SSGS measure of guilt. Model 3 demonstrated that a transgressor's benevolence was significantly positively associated with perceptions of the transgressor's guilt ($B = 0.96$, $S_E = 0.13$, $p < .001$), but the transgressor's perspective-taking was not ($B = 0.21$, $S_E = 0.13$, $p = .114$). The results of Models 4 and 5 demonstrated that when controlling for a transgressor's perspective-taking and benevolence, perceptions of the transgressor's guilt was significantly but inconsistently positively associated with participants' cooperation (ECS: $B = 0.49$, $S_E = 0.14$, $p = .001$; SVO: $B = 0.26$, $S_E = 0.29$, $p = .366$).

The indirect effects of a transgressor's benevolence, as well as a transgressor's perspective-taking, on participants' cooperation via perceptions of the transgressor's guilt were tested using the same bootstrapping method as in Study 1. The results demonstrated significant but inconsistent indirect effects of a transgressor's benevolence on participants' cooperation via perceptions of the transgressor's guilt (ECS: $B = 0.47$, $SE = 0.15$, $0.19 < 95\%$ $CI < 0.79$; SVO: $B = 0.23$, $S_E = 0.29$, $-0.33 < 95\%$ $CI < 0.80$). However, the results demonstrated non-significant indirect effects of a transgressor's perspective-taking on participants' cooperation via perceptions of the transgressor's guilt (ECS: $B = 0.10$, $SE = 0.08$, $-0.05 < 95\%$ $CI < 0.28$; SVO: $B = 0.05$, $S_E = 0.07$, $-0.06 < 95\%$ $CI < 0.23$).

Discussion

This study found partial support for an indirect effect of a transgressor's benevolence, but not a transgressor's perspective-taking, on a victim's cooperation via perceptions of the transgressor's guilt. Together with the results of Study 1, the results of Study 2 also suggest that there is a bidirectional relationship between a victim's perceptions of a transgressor's guilt and

benevolence, such that one can be inferred from the other. Although a significant indirect effect was found for the relationship between a transgressor's benevolence and a victim's cooperation via perceptions of the transgressor's guilt, it was only found for the SSGS measure of guilt and the ECS measure of cooperation. It is possible that these significant results are due to common method bias. Common method bias refers to the spurious variance that can be attributed to the use of similar measurement methods rather than to the constructs that are assumed to be measured (Podsakoff et al., 2003; Richardson, Simmering, & Sturman, 2009). The SSGS measure of guilt and the ECS measure of cooperation have similar scale formats (i.e. Likert-type scale measures) whose responses come from the same rater (i.e. the participant), and these are potential sources of common method biases (Podsakoff et al., 2003). This would help to explain why the association between perceptions of a transgressor's guilt and a victim's cooperation is not significant with the SVO measure of cooperation. The SVO cooperation measure takes the form of a point allocation game, which has a different scale format and involves different cognitive processes in responding from a Likert-type scale that measures a participant's perceptions. Hence, the significant findings in this study could simply be an artifact of the measurement methods used.

General Discussion

The findings of the studies supported the prediction that a transgressor's guilt expression elicited cooperative behavior from victims after a social transgression indirectly through perceptions of the transgressor's benevolence. However, although a transgressor's guilt expression was positively associated with perceptions of both the transgressor's benevolence and perspective-taking, the findings did not support the prediction that a transgressor's guilt expression elicited cooperative behavior from victims indirectly through perceptions of the

transgressor's perspective-taking. This indicates that although guilt expressions can elicit perceptions of benevolence and perspective-taking, it is the perception of a transgressor's willingness to benefit others, rather than the perception of the transgressor's ability to understand the point of view of the victim, that elicits cooperation in a social transgression setting.

The results also showed support for a bidirectional relationship between perceptions of a transgressor's guilt and benevolence, and partial support for the indirect effect of a transgressor's benevolence on a victim's cooperation via perceptions of the transgressor's guilt. This suggests that not only do people perceive those who express guilt after a social transgression as higher in benevolence; they also perceive that those who act benevolently after a social transgression experience guilt. This has important implications for research on inferring others' emotional states, especially for emotions that do not have any distinct facial expressions associated with them such as guilt (Keltner, 1996). Such emotions may instead be inferred by looking at others' behavior rather than others' facial expressions. Previous research has assumed that guilt can be inferred from the mere commitment of a transgression (Cialdini, Darby, & Vincent, 1973; Cunningham et al., 1980). However, my results demonstrate that the commitment of a transgression is not sufficient information for inferring others' guilt. Instead, people seem to infer others' guilt emotions from benevolence cues. In turn, these benevolence cues elicit cooperation from others via inferences of guilt emotions. A caveat is that this indirect effect was only significant for a specific measure of guilt and cooperation (i.e. SSGS and ECS). Thus, this indirect effect may be attributed to common method bias due to the similarity between these two measures.

This research contributes to existing research on the relationship between guilt expressions and other's cooperative behavior by investigating the possible underlying

mechanisms through which this relationship occurs. For example, research demonstrated that communicated guilt mitigated the negative effects of transgressions on investment behaviors in a trust game (Shore & Parkinson, 2017). Building off of the EASI model, my investigation contributes to such findings by explaining *why* communicated guilt has this effect (i.e. through social perceptions). This investigation serves as one of the pioneering studies that empirically examined the social perceptions that arise from guilt expressions and that can elicit cooperation, that is, the perception of the transgressor's benevolence rather than the perception of the transgressor's perspective-taking. Thus, the perception that a past transgressor now intends to do good may explain why communicated guilt could decrease the negative effects of transgressions on investment behaviors in a trust game.

This investigation also adds to previous research on the social perceptions associated with guilt expressions. For example, past research found that people who expressed guilt were rated as having higher levels of morality and liking than those who did not express guilt after a social transgression (Stearns & Parrott, 2012). Stearns and Parrott's (2012) studies made use of autobiographical vignettes for the investigation on social perceptions whereas Study 1 made use of actual behavioral transgressions by a transgressor. Researchers have argued that the use of experimental vignettes does not necessarily demonstrate outcomes that can generalize to natural settings (Hughes & Huby, 2002). Hence, by directly making participants the victim of a transgression in Study 1, I was able to increase the realism of the experimental situation and demonstrate the real life social perceptions that may arise from guilt expressions.

This investigation also illuminates the relationship between perspective-taking and cooperation. My results found that perceptions of a transgressor's perspective-taking were less influential in eliciting cooperation; however, previous research has shown that a transgressor's

guilt expressions, such as apologies and expressions of remorse, result in a *victim's* increased

empathy (including perspective-taking) towards the transgressor (J. R. Davis & Gold, 2011;

Gold & Davis, 2005). An individual's empathy towards others can also motivate the individual

to cooperate with others (Batson, 1987; Xu, Kou, & Zhong, 2012). Thus, future research could

examine whether a transgressor's guilt expressions could elicit a victim's cooperative behavior

via the victim's increased empathy toward the transgressor, rather than via perceptions of the

transgressor's empathy.

A perception of perspective-taking may also be more relevant for other relationship-

repairing outcomes other than cooperation. For example, an inadequate perception of a spouse's

perspective-taking has been found to be predictive of a propensity to divorce (Long, 1994),

leading to relationship dissolution. Relationship dissolution can also be investigated in the

context of the Dictator Game in Study 1. If participants were given the option to switch their

Dictator Game partner, a perception of perspective-taking may be negatively associated with a

willingness to switch partners (and subsequent relationship dissolution). A measure of

willingness to switch partners would allow for a greater range of relationship-repair behavior

because participants can not only choose to allocate points to the transgressor from a range of 0-

100, they can also choose to refuse to play with the transgressor altogether. This greater range in

measurement may be better able to pick up the nuanced effects that a perception of perspective-

taking may have on relationship repair behaviors. A perception of a partner's perspective-taking

has also been found to be positively related to recovery after relational stress in marriages

(Koenig et al., 2013). Thus, although a perception of perspective-taking was not found to be

related to cooperation in my studies, it is possible that a perception of perspective-taking leads to

other relationship repair behaviors and is therefore still important in social transgression situations.

Previous research has demonstrated that expressions of guilt cause victims to concede less in negotiations (Van Kleef et al., 2006), which implies a negative association between guilt expressions and cooperation. Van Kleef et al. (2006) argue that the victim may concede less because they expect that the transgressor will make concessions in order to compensate for his or her transgression. This suggests that victims perceive that expressers of guilt will be benevolent and make concessions, which is in line with my findings regarding the social perception of benevolence that would arise from guilt expressions. However, the participants in Van Kleef et al.'s (2006) studies may have cooperated less as a result of this perception of benevolence, rather than more as was found in my studies, because participants in a negotiation task focus on a maximization of their own benefits (Straus, 1999) and therefore perceptions of a transgressor's benevolence would elicit their competitive responses. In contrast, the sequential Dictator Game in my studies offered an opportunity for participants to benefit each other and therefore perceptions of a transgressor's benevolence might motivate participants to cooperate with the transgressor. Hence, my investigation further contributes to existing research on social perceptions associated with guilt expressions, as well as subsequent cooperative behavior, by using a different task type that may involve different cooperation dynamics. Future research could further investigate the moderating effects of task types on a victim's willingness to cooperate with a transgressor who is expressing guilt and who is perceived to be benevolent.

One possible limitation of my studies could be that the guilt expression was perceived as strategically regulated as this expression involved messages intended to be read by the participant, which may reduce the positive impact of guilt expressions on cooperation. Shore and

Parkinson (2017) found that the positive effects of communicated guilt on trust toward the communicator became diminished when the communicated guilt was perceived as strategically regulated. Thus, when guilt expressions are perceived to be strategically regulated, they may be less effective in eliciting cooperation, which may explain why the guilt expressions in my studies had no significant total effect on a perceiver's cooperation. Future research could investigate the effects of a perception of strategic regulation on the association between guilt expressions and cooperation. In addition, future research could improve upon my studies by increasing the genuineness of the guilt expressions. For instance, participants could be shown the transgressor's guilt emotion ratings and be informed that the transgressor was unaware that the participant would read his or her ratings (Shore & Parkinson, 2017). This would reduce the perception of a guilt expresser's strategic regulation and increase the genuineness of the guilt expression, which may be more effective in eliciting cooperation from perceivers.

Another possible limitation could be the wording of the perspective-taking and benevolence scales. The benevolence scale included the word "now" which provided a reference point for participants to rate the transgressor's level of benevolence after the transgression rather than the level of benevolence before the transgression. However, the perspective-taking scale did not include the word "now" which may have confused participants and led some of them to rate the transgressor's level of perspective-taking before the transgression and others to rate the level of perspective-taking after the transgression. This may explain why we did not find any significant findings regarding a perception of perspective-taking as these ratings may have canceled each other out. Hence, future research should take care to specify the exact reference point for which participants are supposed to make their ratings.

Another limitation of this research could be the use of a scenario study in Study 2. This study differed from Study 1 as it made use of scenarios and asked participants to imagine themselves as victims of a social transgression, rather than actually making them victims of a social transgression. Some researchers have argued that people's inferences and actions in real life are not comparable to their inferences and actions when making sense of a story or a scenario (Parkinson & Manstead, 1993). This would suggest that the outcomes found in scenario studies may not necessarily generalize to real-life natural settings. However, other researchers have argued that scenario studies can enhance external validity if the scenarios are realistic enough (Aguinis & Bradley, 2014). Thus, to circumvent the possible limitations of scenario studies, future research could enhance the experimental realism of scenario studies by creating more realistic scenarios. For example, the manipulations of perspective-taking and benevolence in Study 2 could have been made more realistic by giving specific examples of how the transgressor demonstrated these constructs, such as the transgressor offering to help the victim with their own project as a demonstration of benevolence. Future research should also make use of triangulation and conduct additional research in more naturalistic settings as in Study 1.

Conclusion

I conducted two experiments to investigate the perceptions associated with a transgressor's guilt expression and how they can subsequently influence a victim's cooperative behavior toward a transgressor. I found an indirect effect of a transgressor's guilt expression on a victim's cooperation via the victim's perception of the transgressor's benevolence, rather than the perception of the transgressor's perspective-taking. The results suggest that a display of concern for another's best interests is more important for cooperation and relationship repair after a transgression than a display of empathy for another's perspective. Thus, a demonstration

of a willingness to benefit others is an effective way to elicit cooperation from the victim of a social transgression and to repair the relationship between the victim and the transgressor. This investigation has important implications for social transgression research and highlights the essential role that guilt expressions play in cooperative processes and human relationships.

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Tables

Table 1

Means, Standard Deviations, and Correlations of All Focal Variables in Study 1

Variables	Mean	SD	1.	2.	3.
1. Emotion expression	0.49	0.50			
2. Perceived Perspective-Taking	2.64	1.17	0.25***		
3. Perceived Benevolence	3.00	1.47	0.23***	0.26***	
4. Cooperation	32.37	28.83	-0.08	-0.03	0.15*

Note: * $p < 0.05$; *** $p < 0.001$. Emotion expression: 1 = guilt, 0 = neutral.

Table 2

Ordinary Least Squares Regression Analyses in Study 1

Variables	Model 1 DV: Cooperation	Model 2 DV: Perceived Perspective-Taking	Model 3 DV: Perceived Benevolence	Model 4 DV: Cooperation
Emotion Expression	-4.47	0.58***	0.69***	-6.29
	(3.87)	(0.15)	(0.19)	(4.01)
Perceived Perspective-Taking				-1.27
				(1.73)
Perceived Benevolence				3.74**
				(1.37)
Adjusted R^2	0.00	0.06	0.05	0.03
F-value	1.34	14.73***	12.67***	2.95*

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Emotion expression: 1 = guilt, 0 = neutral. All regression coefficients are unstandardized. The numbers in the parentheses represent standard errors.

Table 3

Means, Standard Deviations, and Correlations of All Focal Variables in Study 2

Variables	Mean	SD	1.	2.	3.	4.	5.
1. Transgressor's Perspective-Taking	0.51	0.50					
2. Transgressor's Benevolence	0.50	0.50	-0.02				
3. Perceived Guilt (PANAS)	2.81	1.44	0.04	0.33***			
4. Perceived Guilt (SSGS)	2.55	1.07	0.09	0.45***	0.60***		
5. Cooperation (ECS)	4.79	1.98	0.01	0.11	0.15*	0.26***	
6. Cooperation (SVO)	3.39	3.89	-0.05	0.02	0.03	0.06	0.30***

Note: * $p < 0.05$; *** $p < 0.001$. Transgressor's Perspective-Taking: 1 = High perspective-taking, 0 = Low perspective-taking. Transgressor's Benevolence: 1 = High benevolence, 0 = Low benevolence.

Table 4

Ordinary Least Squares Regression Analyses in Study 2 with PANAS measure

Variables	Model 1 DV: Cooperation (ECS)	Model 2 DV: Cooperation (SVO)	Model 3 DV: Perceived Guilt (PANAS)	Model 4 DV: Cooperation (ECS)	Model 5 DV: Cooperation (SVO)
Transgressor's Perspective-Taking	0.03 (0.28)	-0.39 (0.55)	0.12 (0.19)	0.01 (0.28)	-0.40 (0.55)
Transgressor's Benevolence	0.45 (0.28)	0.13 (0.55)	0.94*** (0.19)	0.29 (0.29)	0.06 (0.58)
Perceived Guilt (PANAS)				0.17 (0.10)	0.07 (0.20)
Adjusted R^2	0.00	-0.01	0.10	0.01	-0.01
F-value	1.32	0.28	12.22***	1.82	0.23

Note: *** $p < 0.001$. All regression coefficients are unstandardized. The numbers in the parentheses represent standard errors. Transgressor's Perspective-Taking: 1 = High perspective-taking, 0 = Low perspective-taking. Transgressor's Benevolence: 1 = High benevolence, 0 = Low benevolence.

Table 5

Ordinary Least Squares Regression Analyses in Study 2 with SSGS measure

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
	DV: Cooperation (ECS)	DV: Cooperation (SVO)	DV: Perceived Guilt	DV: Cooperation (ECS)	DV: Cooperation (SVO)
Transgressor's Perspective-Taking	0.03 (0.28)	-0.39 (0.55)	0.21 (0.13)	-0.08 (0.27)	-0.44 (0.55)
Transgressor's Benevolence	0.45 (0.28)	0.13 (0.55)	0.96*** (0.13)	-0.02 (0.30)	-0.12 (0.61)
Perceived Guilt (SSGS)				0.49** (0.14)	0.26 (0.29)
Adjusted R^2	0.00	-0.01	0.20	0.05	-0.01
F-value	1.32	0.28	27.14***	4.88**	0.46

Note: ** $p < 0.01$; *** $p < 0.001$. All regression coefficients are unstandardized. The numbers in the parentheses represent standard errors. Transgressor's Perspective-Taking: 1 = High perspective-taking, 0 = Low perspective-taking. Transgressor's Benevolence: 1 = High benevolence, 0 = Low benevolence.