

THE EFFECTS OF EMPATHY ON INTERGROUP CONFLICT AND AGGRESSION:  
EXAMINING THE DUAL ROLES OF EMPATHY IN FOSTERING POSITIVE AND  
NEGATIVE INTERGROUP RELATIONS

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## **ABSTRACT**

TAYA R. COHEN: The Effects of Empathy on Intergroup Conflict and Aggression:  
Examining the Dual Roles of Empathy in Fostering  
Positive and Negative Intergroup Relations  
(Under the direction of Dr. Chester A. Insko)

How does feeling empathy for others affect intergroup relations? The present research indicates that the answer to this question is more complex than might be suspected. Two experiments explored how empathic perspective-taking exercises that fostered feelings of concern for either ingroup or outgroup members affected intergroup conflict (Experiment 1) and intergroup aggression (Experiment 2). Results suggest that in the absence of provocation from an outgroup feeling empathy for outgroup members will foster positive intergroup relations, but in the presence of provocation from an outgroup feeling empathy for outgroup members will foster negative intergroup relations. Feeling empathy for ingroup members is likely to foster negative intergroup relations regardless of whether provocation is present. Importantly however, this research revealed that the effects of empathic perspective-taking on intergroup relations were moderated by gender and individual differences in empathic concern and guilt proneness.

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## CHAPTER I

### INTRODUCTION

With wars in the Middle East, Africa, and throughout the world claiming thousands of lives every year, intergroup conflict and aggression are not issues that can be ignored without consequence. The goal of the present research was to examine the dual roles of empathy in inhibiting and promoting intergroup conflict and aggression. While prior research suggests that empathy, or concern for others, may influence intergroup relations, many questions about the effects of empathy on intergroup conflict and aggression remain unanswered.

No prior study has compared how intergroup relations are impacted by group members' concern for ingroup members (*ingroup empathy*) versus their concern for outgroup members (*outgroup empathy*). It is possible that fostering empathy for outgroup members will promote more cooperative and less aggressive intergroup behavior, while fostering empathy for ingroup members will promote less cooperative and more aggressive intergroup behavior, but these hypotheses have yet to be empirically tested. Another unanswered question relates to the relationship between dispositional empathy and situational manipulations of empathy. It is possible that individual differences in empathy may attenuate or amplify the effectiveness of situational manipulations of empathy, but research in this area is sparse (for exceptions, see Davis, 1983b; Graziano, Habashi, Sheese, & Tobin, 2007). It is also possible that situational manipulations of empathy may affect the behavior of male and

female groups differently (cf. Eisenberg & Lennon, 1983). Investigating these latter two issues is important for determining for whom empathy interventions will be most successful. To begin to answer these questions, the current research explored how empathic perspective-taking exercises, that fostered either ingroup empathy or outgroup empathy, interacted with individual differences in empathy to influence conflict and aggression between male and female groups.

### What is Empathy?

Empathy is a multidimensional construct (Davis, 1983a, 1983b), and perhaps as a consequence of this multidimensionality, different researchers use the term somewhat differently (cf. Batson, Polycarpou, Harmon-Jones, Imhoff, Mitchener, Bednar, et al., 1997; Davis, 1983a; 1983b; Eisenberg, 2000; Stephen & Finlay, 1999). I use the term empathy to refer to an other-oriented affective response that is characterized by feelings of warmth, compassion, and concern for others. My usage of the term empathy corresponds to Stephen and Finlay's (1999, p. 730) term "emotional empathy" and Eisenberg's (2000, p. 672) term "sympathy." In the Interpersonal Reactivity Index (IRI; Davis 1980), a widely-used individual difference measure of empathy, this emotional empathy dimension is called empathic concern—"a measure of emotional responsivity" (Davis, 1983a). Thus, empathy, as I use the term, is an other-oriented emotional response.

Perspective taking, on the other hand, is a cognitive response (Davis, 1983a, 1983b; Galinsky, Maddux, Gilin, & White, in press). Perspective taking involves imagining yourself in someone else's shoes (Batson, Lishner, Carpenter, Dulin, Harjusola-Webb, Stocks, et al., 2003) or entertaining the point of view of others (Davis, 1983a, 1983b). Stephen and Finlay (1999, p. 730) refer to this as "cognitive empathy." In the IRI (Davis, 1980) this cognitive

dimension is called perspective taking—the tendency of the respondent to adopt the psychological perspective of other people (Davis, 1983a, 1983b).

Perspective-taking exercises may foster emotional empathy, but as Batson et al. (2003) have shown, not all types of perspective-taking exercises are equally effective at promoting emotional empathy. Whereas asking individuals to imagine how another person feels (“imagine-other perspective”; Batson et al., 2003) does promote concern for others, asking individuals to imagine themselves in the place of another person (“imagine-self perspective”; Batson et al., 2003) does not. In fact, Epley, Caruso, and Bazerman’s (2006) research on reactive egoism suggests that adopting the perspective of another group (as opposed to considering the feelings of another group) leads groups to expect more selfishness from the other group and in turn, leads groups to behave more selfishly toward the other group. Further evidence of the difference between empathy and perspective-taking comes from Galinsky and colleagues (in press), who found that perspective-taking was associated with individuals negotiating larger outcomes for themselves, whereas empathy was associated with individuals negotiating larger outcomes for their interaction partners.

In the present research, I modified Batson et al.’s (2003) imagine other perspective-taking exercise (i.e., an exercise that has participants imagine how others feel) to investigate how emotional empathy affects intergroup conflict (Experiment 1) and intergroup aggression (Experiment 2). The empathic perspective-taking exercise involved having participants imagine either how their fellow ingroup members were feeling about an upcoming intergroup interaction (ingroup empathy exercise) or how the members of the other group were feeling about an upcoming intergroup interaction (outgroup empathy exercise). I also included the empathic concern and perspective taking subscales from the IRI (Davis, 1980) to test whether

individual differences in emotional empathy and cognitive perspective-taking moderate the influence of the empathic perspective-taking exercises (cf. Davis, 1983b).

#### Evidence for the Role of Empathy in Fostering Positive Intergroup Relations

Miller and Eisenberg (1988) conducted a quantitative review of over 50 studies investigating how empathy (i.e., “an emotional response evoked by the affective state or situation of the other person”; p. 325) relates to aggression, antisocial behavior, and physical abuse. They found significant negative correlations with empathy and each of these constructs. In a similar review, Eisenberg and Miller (1987) found significant positive correlations between empathy and prosocial behavior. While these reviews provide strong evidence for the role of empathy in promoting positive relations between individuals, the studies reviewed did not examine how empathy influences intergroup relations.

Stephan and Finlay (1999) reviewed research examining the role of empathy in improving intergroup relations. Their review found that feeling empathy for outgroup members is associated with reductions in prejudice. They point out, for example, that cooperative learning techniques, such as “the jigsaw classroom” (Aronson & Bridgeman, 1979; Aronson & Patnoe, 1997), help reduce prejudice toward outgroups by increasing participants’ feelings of empathy for outgroup members. However, none of the experiments reviewed by Stephen and Finlay (1999) tested whether feeling empathy for outgroup members promotes positive intergroup behavior—the experiments in their review tested for differences in attitudes, not actual behaviors.

While prior experimental research on empathy has been largely limited to investigations of attitudes toward outgroups or interindividual behavior, there are several correlational studies that suggest that feeling empathy for outgroups is associated with

positive intergroup relations. For example, Shechtman and Basheer (2005) found that the more empathy Arab children felt toward Jewish children, the less likely they were to support aggression toward them. Malhotra and Liyanage (2005) found that Tamil and Sinhalese high school students living in Sri Lanka who had participated in a four-day peace workshop were more likely, one year later, to report empathic feelings toward the outgroup and donate money to an outgroup charity than were Tamil and Sinhalese students who had not participated in the workshop. This finding is particularly striking because the hostility between the Tamils (a Hindu group) and the Sinhalese (a Buddhist group) has plagued Sri Lanka with civil warfare for over 20 years. Moreover, after attending the peace workshop, most participants returned to a community in which they had no interactions with the other group for a year, suggesting that empathy promoted by peace workshops can have long-lasting effects.

Pettigrew (1998) suggested that the effectiveness of intergroup contact in improving intergroup relations may stem in part from outgroup empathy or outgroup perspective taking. Malhotra and Liyanage's (2005) findings support this idea, as do findings by Hewstone, Cairns, Voci, Hamberger, & Niens (2006). Hewstone et al. found that intergroup contact between Protestants and Catholics in Northern Ireland was positively related to outgroup perspective-taking, more favorable attitudes and trust of the outgroup, and forgiveness.

#### Evidence for the Role of Empathy in Fostering Negative Intergroup Relations

Most prior research on empathy in intergroup relations has focused on the positive effects of empathy directed at outgroups (Stephan & Finlay, 1999). Unfortunately, there is a dark side to empathy as well. Researchers have suggested that one cause of terrorism is strong concern for one's ingroup (McCauley, 2007; Post, Sprinzak, & Denny, 2003;

Sageman, 2004; Victoroff, 2005). According to Post et al. (2003), terrorists' collective identity often subsumes their individual identity: "This fusion with the group seems to provide the necessary justification for their actions with an attendant loss of felt responsibility" (Post et al., 2003, p. 176). This emerging research on terrorism suggests that extreme ingroup empathy may lead to extreme violence toward outgroups.

Research on "group morality" provides further evidence of the harmful role of ingroup empathy in intergroup relations (T. R. Cohen, Montoya, & Insko, 2006). When group members are focused on their ingroup, moral norms, or group morality, encourage them to do what is best for their own group regardless of the consequences for outgroups (T. R. Cohen et al., 2006; Wildschut & Insko, 2006). In conflict situations, such as the prisoner's dilemma game (Kelley, Holmes, Kerr, Reis, Rusbult, & Van Lange, 2003), doing what is best for one's own group often requires hurting those in other groups. Thus, following the codes of group morality can make groups act less cooperatively (or more competitively) toward outgroups (T. R. Cohen et al., 2006; Pinter, Insko, Wildschut, Montoya, Kirchner, & Wolf, 2007; Wildschut & Insko, 2006).

In a previous study (T. R. Cohen et al., 2006, Study 2) I tested whether inducing group members to feel empathy for those in their ingroup would motivate them to act in line with the codes of group morality. Specifically, I tested whether having group members engage in an ingroup empathy perspective-taking exercise would lead them to act less cooperatively (more competitively) toward the outgroup. This study also measured individual differences in guilt proneness (Tangney & Dearing, 2002). Guilt is a moral emotion (Tangney & Dearing, 2002) that motivates individuals to "do the right thing" (i.e., behave in accordance with norms). People feel guilty when they violate moral rules and imperatives. I

hypothesized that group members high in guilt proneness would be most influenced by the ingroup empathy exercise because these group members would be the most likely to conform to the codes of group morality. Consistent with hypotheses, I found an interaction such that the ingroup empathy exercise made participants high, but not low, in guilt proneness less likely to cooperate with the outgroup (more likely to compete) compared to participants in a control condition. These results suggest that among group members concerned with being moral, ingroup empathy is associated with less cooperation (or more competition) with outgroups.

## CHAPTER II

### EXPERIMENT 1: EMPATHY AND INTERGROUP CONFLICT

#### *Empathy and the Prisoner's Dilemma Game*

Experiment 1 used a variation of the prisoner's dilemma game (PDG) to investigate how empathy affects intergroup conflict. The PDG is a commonly used method for modeling conflict in a laboratory setting. The PDG represents a dilemma in which each side can increase its outcomes by always acting competitively instead of cooperatively; but if both sides act competitively, they will both receive lower outcomes than they could have obtained through both acting cooperatively. According to Ridley (1996), "Broadly speaking any situation in which you are tempted to do something, but know it would be a great mistake if everybody did the same thing, is likely to be a prisoner's dilemma."

While thousands of studies have used the PDG to study conflict (e.g., Axelrod, 1984; Kelley et al., 2003; Poundstone, 1992; Wildschut, Pinter, Vevea, Insko, & Schopler, 2003), only three prior studies have investigated how behavior in the PDG is affected by feelings of empathy (Batson & Ahmad, 2001; Batson & Moran, 1999; T. R. Cohen et al., 2006). Batson and colleagues have shown that when women are made to feel empathy for another individual, they are more likely to cooperate with that individual (Batson & Moran, 1999), even after learning that the other individual acted competitively toward them (Batson & Ahmad, 2001). While these two experiments by Batson suggest that feeling empathy for one's interaction partner promotes cooperative behavior toward them, their implications for

intergroup conflict are limited because the studies used only female participants, and did not investigate how empathy affects intergroup behavior.

The only other study to investigate empathy in the PDG was by T. R. Cohen and colleagues (2006, Study 2). As discussed earlier, this experiment found that making participants feel empathy for fellow ingroup members caused participants high in guilt proneness to act competitively (uncooperatively) toward the outgroup. While this experiment found that fostering feelings of empathy for ingroup members lead some groups (i.e., those concerned with behaving in line with moral norms) to behave uncooperatively in the PDG, it did not test whether feeling empathy for outgroup members also influences intergroup cooperation and competition.

#### *PDG-Alt Matrix*

To investigate the effects of empathy on intergroup relations, I compared how feelings of empathy for outgroup members versus ingroup members influenced intergroup conflict using a variation of the traditional PDG—the three-choice PDG-Alt matrix (Figure 1). In a traditional two-choice PDG, each side can either choose to cooperate or compete (Kelley et al., 2003). The PDG-Alt adds a third possible choice, withdrawal, which guarantees intermediate outcomes for both sides (Insko, Kirchner, Pinter, Efav, & Wildschut, 2005; Insko, Schopler, Hoyle, Dardis, & Graetz, 1990). In a two-choice PDG, a competitive choice reflects both motivation to protect oneself from one's opponent (i.e., fear or distrust) and motivation to exploit one's opponent (i.e., greed). If it is known by both sides that there will be only one trial (so that tactical withdrawal is not an option), the PDG-Alt unconfounds fear and greed motivations: Competition reflects greed; withdrawal reflects fear or distrust. Because a withdrawal choice guarantees equal outcomes for both sides,

withdrawal may also be motivated by concerns for fairness. Cooperation can be motivated by concerns for fairness as well, but cooperation is the only choice that can maximally benefit both groups.

In the PDG-Alt, as in many conflict situations, cooperation is inherently risky. Although cooperation yields the highest joint payoff, it can easily be exploited. By testing for differences in cooperation, I could investigate whether outgroup empathy would induce groups to take a risk and cooperate with the outgroup. Analyzing cooperation also allowed me to test whether ingroup empathy would lead groups high in guilt proneness to forgo cooperation in order to benefit their ingroup (T. R. Cohen et al., 2006).

Although both competition and withdrawal may benefit one's ingroup, withdrawal is a "nicer" choice than competition. Competition is a greed-based response, whereas withdrawal is not. Comparing competition and withdrawal allowed me to test whether outgroup empathy would make groups less willing to exploit opponents by acting competitively toward them. Because both withdrawal and competition can benefit one's ingroup, I expected the ingroup empathy exercise to primarily influence cooperation (in a negative direction), as opposed to competition versus withdrawal.

### Method

Participants in the study were 356 students (113 men, 243 women) enrolled in introductory psychology classes. The key independent variable was an empathy manipulation, which took the form of a writing exercise. Other independent variables included gender (a comparison of all male sessions with all female sessions), the empathic concern (EC) and perspective taking (PT) subscales of the IRI (Davis, 1980) and the guilt

and shame subscales of the Test of Self-Conscious Affect (TOSCA; Tangney, Wagner, & Gramzow, 1989).

At the start of each experimental session, participants completed a consent form and two individual difference measures: the IRI (Davis, 1980, 1983a) and the TOSCA (Tangney et al., 1989).

### *Interpersonal Reactivity Index*

The IRI (Davis, 1980, 1983a) asks participants to read a series of statements and rate how well each statement describes them. The EC subscale of the IRI measures the tendency to experience feelings of warmth, compassion, and concern for other people (e.g., “When I see someone being taken advantage of, I feel kind of protective towards them.”), and can be regarded as the affective component of empathy. The PT subscale of the IRI measures the tendency to adopt the point of view of other people (e.g., “When I’m upset at someone, I usually try to ‘put myself in his shoes’ for a while.”), and can be regarded as the cognitive component of empathy.

Ratings were made on a 5-point scale (0 = *does not describe me well*; 4 = *describes me very well*). There are seven items in the EC subscale ( $\alpha = .80$ ), and seven items in the PT subscale ( $\alpha = .82$ ). Appropriate items were reverse-coded, and IRI scores were standardized to  $z$ -scores before conducting analyses. Higher values on the EC and PT scales represent greater empathic concern and greater perspective taking, respectively.

Consistent with previous research on gender differences in empathy (Eisenberg & Lennon, 1983), women scored higher than men on both EC,  $F(1, 354) = 61.35, p < .001$ , and PT,  $F(1, 354) = 10.03, p = .002$ . EC (raw mean scores): women  $M = 3.02$  ( $SD = .54$ ); men  $M$

= 2.51 ( $SD = .66$ ). PT (raw mean scores): women:  $M = 2.53$  ( $SD = .67$ ); men  $M = 2.28$  ( $SD = .74$ ).

### *Test of Self-Conscious Affect*

The TOSCA (Tangney et al., 1989) is a scenario-based guilt and shame measure, in which individuals are asked to imagine a situation (e.g., “While out with a group of friends, you make fun of a friend who’s not there.”), and then rate how likely it is that they would react in certain ways (e.g., “You would apologize and talk about that person’s good points.”). Ratings were made on a 7-point scale (0 = *not at all likely*; 6 = *extremely likely*).

The TOSCA defines guilt and shame in accordance with Lewis’s (1971) conception of the two constructs. According to Lewis (1971), “The experience of shame is directly about the *self*, which is the focus of evaluation. In guilt, the self is not the central object of negative evaluation, but rather the *thing* done or undone is the focus” (p. 30). There are 15 items in the guilt subscale ( $\alpha = .75$ ), and 15 items in the shame subscale ( $\alpha = .79$ ). TOSCA scores were standardized to  $z$ -scores before conducting analyses. Higher values on the guilt and shame scales represent greater guilt proneness and greater shame proneness, respectively.

Women scored higher than men on both guilt,  $F(1, 354) = 77.58, p < .001$ , and shame,  $F(1, 354) = 24.32, p < .001$ . Guilt (raw mean scores): women  $M = 4.45$  ( $SD = .57$ ); men  $M = 3.84$  ( $SD = .69$ ). Shame (raw mean scores): women  $M = 2.90$  ( $SD = .84$ ); men  $M = 2.45$  ( $SD = .73$ ).

### *Procedure*

Participants arrived at the lab in groups of six, and upon arrival, were seated in individual rooms where they completed the personality measures and five copies of a short information sheet (see Appendix) that were to be exchanged prior to the “social interaction

task.” The purpose of the exchange was to support the empathy manipulation by supposedly facilitating acquaintanceship. After completing these measures, participants were assigned to one of two three-person groups (a “bolded group” or an “outlined group”) and given instructions regarding the social interaction task.

Participants were informed that in the social interaction task their group would interact with the other group and each person would have the opportunity to earn money. Each participant was given a copy of the PDG-Alt matrix (Figure 1) with the following instructions.

The interaction between your group and the group with whom you are interacting will be expressed using a matrix. In this matrix, your group has three choices, *X*, *Y*, and *Z*. The group with whom you are interacting has the same matrix and also has the same three choices. The numbers in the diagram below represent the payoffs in pennies for both groups for each of the possible combinations of choices that could occur. In each square of the interaction matrix, the bolded group’s payoff is located in the upper right corner and the outlined group’s payoff is located in the lower left corner. Please note that the amounts in each cell represent the total payoff for the group; the money will be split evenly between the three group members. Each group’s decision will be determined by majority vote. In the event that there is no majority vote (i.e., each group member votes for a different letter), your group will be asked to re-vote.

Following these instructions, participants completed several exercises to ensure understanding of the matrix. Participants were informed that there would be just one interaction in the payoff matrix and following the interaction each person would be dismissed individually (i.e., they would not meet the other participants).

After the matrix training, participants were given an opportunity to “get to know” the other participants. Participants were told the following:

When completing this kind of task, we have found from previous research that participants prefer to have some information about each other before casting their votes. For this reason, we had you complete the information sheets at the beginning of this session. Now each of you will be given a folder containing information about the other participants in today’s study. Please read over this information in order to get to know the other participants.

All participants were given the same five bogus information sheets. The Appendix lists the bogus information in italics. These responses were based on answers given during pilot testing. The bogus information sheets were included because pilot testing revealed that participants found it easier to feel empathy for people whom they had never met if they first were provided with some information about them. The empathy manipulation was implemented after participants were given a few moments to read over the information sheets.

The empathy manipulation involved a writing exercise adapted from a procedure used by Batson and colleagues (Batson et al., 2003; Batson & Ahmad, 2001; Batson & Moran, 1999; see also T. R. Cohen et al., 2006). All participants read: “You have been randomly selected to complete a thought exercise. The other participants in today’s session will complete additional measures of personality instead of this exercise.” After this statement, participants in the outgroup empathy condition read the following instructions:

In this exercise we would like for you to *imagine how the members of the other group feel*. That is, imagine how the members of the other group are likely to feel while considering their votes. Imagine also the members of the other group will likely feel when they learn each group’s decision. *Take about one minute* for this imagination exercise, getting as clear a sense as possible of *how the members of the other group likely feel*. Then, at the end of the minute, *write down what you imagined*. We have found that carefully following this procedure can ensure understanding of the upcoming interaction.

Participants in the ingroup empathy condition received identical instructions except the phrase “your own group” was substituted for “the other group.” Participants in the objective condition received instructions that asked them to remain objective:

In this exercise, we would like for you to think about the upcoming interaction. While thinking about the upcoming interaction, try to *take an objective perspective*. That is, try not to get caught up in how the other participants in today’s experiment feel; just remain objective and detached. *Take about one minute* for this thought exercise, getting as clear a sense as possible of the upcoming interaction. Then, at the end of

the minute, *write down what you thought about*. We have found that carefully following this procedure can ensure understanding of the upcoming interaction. Participants were given approximately 10 minutes to work on the writing exercise.

Following the exercise, participants were reminded that there would be just one interaction and they would not meet any other participant. Then they were asked to circle their vote, *X*, *Y*, or *Z*. After votes were collected, participants completed open- and closed-ended assessments of reasons for their PDG-Alt vote, were given their money, debriefed, and dismissed.

### *Dependent Variables*

*PDG-Alt choice.* The main dependent variable was participants' vote in the PDG-Alt matrix (Figure 1): *X* represents cooperation, *Y* represents withdrawal, and *Z* represents competition. For statistical analyses, PDG-Alt choices were partitioned into two planned orthogonal contrasts: (a) cooperation versus competition and withdrawal combined; and (b) competition versus withdrawal. Given the forced-choice dependency, the first contrast is equivalent to looking at cooperation alone. The second contrast only includes participants who did not cooperate.

*Reasons for PDG-Alt choice.* Reasons for the PDG-Alt choice were assessed first, with an open-ended question and, second, with closed-ended ratings. The open-ended question was as follows: "If you chose '*X*' ('*Y*', '*Z*' respectively), what was your reason (or reasons) for doing so?" Two judges coded these responses for the presence of five possible reasons: (a) concern for maximizing own outcomes (e.g., "I wanted my group to earn as much as possible"), max own ( $\kappa = .89$ ); (b) concern for maximizing relative outcomes (e.g., "I wanted my group to earn more than the other group"), max rel ( $\kappa = .87$ ); (c) concern for maximizing joint outcomes (e.g., "I wanted both groups to earn as much as possible

together”), max joint ( $\kappa = .88$ ); (d) concern for minimizing the differences between the two groups (e.g., “I wanted both groups to earn an equal amount”), min dif ( $\kappa = .86$ ); and (e) distrust (e.g., “I wanted to defend my group against the actions of the other group”;  $\kappa = .98$ ). After responding to the open-ended question, participants completed closed-ended ratings of the five reasons. Ratings were made on 7-point scales (1 = *not at all*, 7 = *very much*). Higher scores indicate greater endorsement of the reason.

Because separate analyses of the open- and closed-ended assessments yielded similar results and because the two types of assessments were correlated, *z*-transformed composites were formed for each of the five reasons. Composites were created by first standardizing and then averaging open- and closed-ended assessments of the same reason. Reliability coefficients for these composites were: .73 for max own; .61 for max rel; .71 for max joint; .70 for min dif; and .57 for distrust.

*Empathy manipulation check.* The content of the writing exercise was coded to assess the validity of the empathy manipulation. Two raters coded for whether the participant thought about either group (ingroup thoughts,  $\kappa = .74$ ; outgroup thoughts,  $\kappa = .78$ ), and whether the participant discussed the feelings of either group (ingroup feelings,  $\kappa = .81$ ; outgroup feelings,  $\kappa = .78$ ). The judges’ ratings were averaged to form indices of these manipulation checks. Each index ranged from 0 (*did not mention thoughts / feelings*) to 1 (*mentioned thoughts / feelings*).

### *Data Analysis*

Logistic regression was used to investigate how the empathy manipulation, gender, and the individual difference variables (e.g., empathic concern, guilt) influenced (a) cooperation and (b) competition versus withdrawal. The empathy manipulation was

partitioned into two planned orthogonal contrasts: (a) outgroup empathy (coded 1) versus objective (coded -1); (b) ingroup empathy (coded 1) versus outgroup empathy and objective combined (each coded -.5). Gender was coded 0 for men and 1 for women. Because participants were seated in individual rooms and never met or interacted with the other participants, the unit of analysis was the individual group member.

The logistic regression analyses were conducted in two steps. The first step contained the empathy manipulation contrasts, gender, and the empathy manipulation by gender interactions. In the second step, EC, guilt, and the corresponding interaction terms were added. In preliminary analyses, I also included PT and shame, but there were no significant main effects or interactions for these variables. Because I did not have hypotheses regarding the PT and shame assessments, I do not discuss them further.

## Results

### *Empathy Manipulation Check*

Table 1 shows the results for the empathy manipulation check. As expected, participants in the ingroup empathy condition thought about and discussed the feelings of their ingroup more than participants in the other conditions. Likewise, participants in the outgroup empathy condition thought about and discussed the feelings of the outgroup more than participants in the other conditions. Unexpectedly, in the outgroup empathy condition, women were more likely than men to discuss the feelings of the outgroup.

### *Step 1: PDG-Alt Choice as a Function of the Empathy Condition and Gender*

Table 2 presents the PDG-Alt means by empathy condition and gender. Table 3 presents logistic regression results of the step 1 models.

*Cooperation.* For cooperation, there was a significant main effect for the outgroup empathy versus objective contrast,  $B = .64$ ,  $SE = .30$ ,  $p = .03$ , that was qualified by a significant Gender X Outgroup Empathy interaction,  $B = -.73$ ,  $SE = .36$ ,  $p = .04$  (see Table 3). The outgroup empathy manipulation caused significant increases in cooperation for men,  $B = .64$ ,  $SE = .30$ ,  $p = .03$ , but not for women,  $B = -.09$ ,  $SE = 1.00$ ,  $p = .93$ . This interaction is interesting in light of the Gender X Outgroup Empathy interaction for the outgroup feelings manipulation check. As shown in Table 1, the outgroup empathy manipulation was relatively more effective for women. So, even though the outgroup empathy manipulation appeared to work better for women, men were more affected by it.

*Competition versus withdrawal.* Neither the empathy manipulation nor gender significantly influenced competition versus withdrawal in the step 1 model (see Table 3).

*Step 2: PDG-Alt Choice as a Function of EC, Guilt, Empathy Condition, and Gender*

Table 4 presents the PDG-Alt choice means by EC, guilt, empathy condition, and gender. Table 5 presents logistic regression results for the step 2 models.

For cooperation, there were two significant interactions: (a) EC X Outgroup Empathy and (b) Guilt X Ingroup Empathy. For competition versus withdrawal, there was a significant EC X Outgroup Empathy interaction, which was qualified by a significant Gender X EC X Outgroup Empathy interaction. These interactions are depicted in Figures 2, 3, and 4, and are described in greater detail below.

*Cooperation regressed on EC X Outgroup Empathy.* Figure 2 shows the significant interaction between EC and the outgroup empathy contrast,  $B = -.56$ ,  $SE = .23$ ,  $p = .02$ . Probing the interaction (Preacher, Curran, & Bauer, 2006) revealed differences primarily among those low in EC. Low-EC participants (1 *SD* below the mean) in the outgroup

empathy condition were more cooperative than low-EC participants in the objective condition,  $t(342) = 2.71, p = .007$ . The difference between the outgroup empathy and objective conditions was nonsignificant for participants with average EC scores,  $t(342) = 1.48, p = .14$ , and high EC scores,  $t(342) = -.17, p = .86$ . Greater EC was associated with greater cooperation in the objective condition,  $B = .95, SE = .44, p = .03$ , but not in the outgroup empathy condition,  $B = -.16, SE = .36, p = .65$ .

*Cooperation regressed on Guilt X Ingroup Empathy.* Figure 3 shows the significant interaction between guilt and the ingroup empathy contrast,  $B = -.59, SE = .29, p = .04$ . Probing the guilt by ingroup empathy interaction revealed differences primarily among those high in guilt. High-guilt participants (1 *SD* above the mean) in the ingroup empathy condition were less cooperative than high-guilt participants in the other conditions,  $t(342) = -1.98, p = .049$ . The difference between the ingroup empathy condition and the other conditions was nonsignificant for participants with average guilt scores,  $t(342) = -1.41, p = .16$ , and low guilt scores,  $t(342) = -.05, p = .96$ . Greater guilt proneness was associated with less cooperation in the ingroup empathy condition,  $B = -.92, SE = .47, p = .04$ , but not in the other conditions,  $B = -.04, SE = .33, p = .92$ .

*Competition versus Withdrawal regressed on Gender X EC X Outgroup Empathy.* Figure 4 shows the significant three-way interaction between gender, EC, and the outgroup empathy contrast for competition versus withdrawal,  $B = 1.36, SE = .59, p = .02$ . Breaking down the Gender X EC X Outgroup Empathy interaction by gender revealed a significant EC X Outgroup Empathy interaction for men,  $B = -1.25, SE = .53, p = .02$ , but not for women,  $B = .11, SE = .26, p = .68$ . Whereas the outgroup empathy exercise made men low in EC significantly more likely to compete than withdraw,  $t(273) = 1.98, p = .048$ , the outgroup

empathy exercise made men high in EC marginally more likely to withdraw than compete,  $t(273) = -1.79, p = .07$ .

Analyzing competition and withdrawal separately revealed approximately symmetric effects. For men in the outgroup empathy condition, greater EC was associated with significantly less competition,  $B = -1.48, SE = .58, p = .01$ , and significantly more withdrawal,  $B = 1.49, SE = .50, p = .004$ . For men in the objective condition, neither the relationship between EC and competition,  $B = .31, SE = .42, p = .46$ , nor EC and withdrawal,  $B = -.74, SE = .41, p = .08$ , was significant (although the relationship between EC and withdrawal was marginal).

#### *Potential Mediation of PDG-Alt Choice by Reasons Assessments*

Potential mediation by the choice reasons (i.e., max own, max rel, max joint, min dif, and distrust) was assessed using MacKinnon, Lockwood, Hoffman, West, and Sheets' (2002) mediation procedure. Mediation is established when (a) the independent variable significantly influences the mediating variable, (b) the influence of the proposed mediator is significant when including the proposed mediator and the independent variable as predictors of the dependent variable, and (c) the indirect effect of the mediating variable is significant. According to MacKinnon et al. (2002), the critical  $z'$  values for testing mediation are .97 for  $\alpha = .05$  and 1.10 for  $\alpha = .01$ . Except for the difference in critical values, the Mackinnon  $z'$  test is equivalent to Sobel's (1982) test for mediation.

*Cooperation mediation.* The Gender X Outgroup Empathy interaction that significantly predicted cooperation in the first PDG-Alt model did not significantly predict any of the reasons.

Neither of the two interactions that significantly predicted cooperation in the second PDG-Alt model (EC X Outgroup Empathy; Guilt X Ingroup Empathy) significantly predicted any of the reasons. However, there was a marginal effect of EC X Outgroup Empathy on distrust,  $B = .12$ ,  $SE = .07$ ,  $p = .08$ . When distrust was included as a covariate in the cooperation model, distrust was significant,  $B = -2.32$ ,  $SE = .36$ ,  $p < .001$ , while the EC X Outgroup Empathy interaction was not,  $B = -.41$ ,  $SE = .27$ ,  $p = .14$ . EC X Outgroup Empathy did not interact with distrust,  $B = -.29$ ,  $SE = .43$ ,  $p = .50$ , which supports the assumption of homogeneity of regression. Although the effect of EC X Outgroup Empathy on distrust was marginal, a MacKinnon  $z'$  test revealed a significant mediating effect of distrust on cooperation,  $z' = 1.66$ ,  $p < .01$ . The MacKinnon  $z'$  test suggests that distrust may mediate the effect of EC X Outgroup Empathy on cooperation.

*Competition versus withdrawal mediation.* Gender X EC X Outgroup Empathy significantly predicted max own,  $B = .31$ ,  $SE = .15$ ,  $p = .04$  and max rel,  $B = .41$ ,  $SE = .14$ ,  $p = .004$ . When max own and max rel were entered into the competition versus withdrawal model, max own,  $B = 2.25$ ,  $SE = .35$ ,  $p < .001$ , and max rel,  $B = 2.05$ ,  $SE = .44$ ,  $p < .001$ , were each significant, while Gender X EC X Outgroup Empathy was not,  $B = 1.57$ ,  $SE = 1.31$ ,  $p = .23$ . Max own and max rel were each associated with more competition (max own  $B = 2.12$ ,  $SE = .32$ ,  $p < .001$ ; max rel  $B = 2.10$ ,  $SE = .41$ ,  $p < .001$ ) and less withdrawal (max own  $B = -.92$ ,  $SE = .18$ ,  $p < .001$ ; max rel  $B = -.71$ ,  $SE = .24$ ,  $p = .003$ ). Gender X EC X Outgroup Empathy did not interact with max own,  $B = -1.77$ ,  $SE = 1.43$ ,  $p = .22$ , or max rel,  $B = 1.76$ ,  $SE = 1.68$ ,  $p = .30$ , which supports the assumption of homogeneity of regression.

A MacKinnon  $z'$  test revealed significant mediating effects of max own ( $z' = 2.00$ ,  $p < .01$ ) and max rel ( $z' = 2.46$ ,  $p < .01$ ) on competition versus withdrawal. These results are

consistent with the possibility that max own and max rel fully mediate the effect of Gender X EC X Outgroup Empathy on competition versus withdrawal.

It should be noted that assumptions regarding mediation may be violated. First, because the reasons assessments contained measurement error, the relationships between the reasons and PDG-Alt choice could be spurious. Second, because the reasons assessments took place after the assessment of PDG-Alt choice, it could be that the reasons participants gave for their choices were consequences of the choice, as opposed to causes. Therefore, although the mediational analyses are consistent with the possibility of full mediation by distrust for cooperation, and max own and max rel for competition versus withdrawal, they do not provide definitive evidence for such mediation.

## Discussion

In Experiment 1, I manipulated both ingroup empathy (i.e., consideration of the feelings of ingroup members) and outgroup empathy (i.e., consideration of the feelings of outgroup members) in order to investigate the dual roles of empathy in increasing and decreasing intergroup conflict.

### *The Role of Empathy in Increasing Intergroup Conflict*

The first question I sought to answer in Experiment 1 was whether ingroup empathy leads groups to forgo cooperation in order to benefit their ingroup. Consistent with prior research (T. R. Cohen et al., 2006), and as shown in Figure 3, the ingroup empathy exercise decreased cooperation among group members high in guilt proneness (and by implication increased competition and withdrawal). Group morality norms discourage cooperation with outgroups because behaving cooperatively puts one's ingroup at risk of being exploited. The Experiment 1 results showed that it was primarily group members who were high in guilt

proneness that were influenced by the ingroup empathy exercise (see also T. R. Cohen, 2006). Guilt is a moral emotion (Tangney & Dearing, 2002), and the fact that the ingroup empathy exercises reduced cooperation among guilt-prone group members supports the idea that moral imperatives discourage cooperation with outgroups. The current results extend prior research on group morality (T. R. Cohen et al., 2006; Pinter, et al., 2007; Wildschut & Insko, 2006) by showing that group morality does not necessarily require competition with outgroups: Withdrawal is an acceptable option as well. What group morality does discourage is putting one's ingroup at risk by cooperating with outgroups.

#### *The Role of Empathy in Decreasing Intergroup Conflict*

The second question I sought to answer was whether outgroup empathy is an effective tool for promoting cooperation between groups. The short answer is yes, but perhaps not for everyone. As shown in Figure 2, the outgroup empathy perspective-taking exercise promoted cooperation among group members who were low, but not high, in empathic concern. It is possible that high EC participants were already inclined to act cooperatively toward the outgroup and did not require instructions to be empathic toward them (cf. Graziano et al., 2007). Mediation analyses suggested that the increase in cooperation caused by the outgroup empathy exercise may have occurred because of corresponding reductions in distrust. These findings are encouraging because they show that group members who are not dispositionally inclined to feel empathic concern for others can be made to trust outgroups and act cooperatively toward them by simply being asked to think for a few moments about their feelings.

An advantage of the PDG-Alt matrix is that it allows for separate assessments of cooperation, withdrawal, and competition. Through my use of this matrix, I was able to show

that outgroup empathy exercise affected not only cooperation, but also competition versus withdrawal. As shown in Figure 4, the outgroup empathy exercise worked in combination with high dispositional empathic concern to make male groups less likely to compete and more likely to withdraw from conflict. The mediation results suggest that this occurred because of reductions in greed motivation (i.e., reductions in the desire to maximize absolute and relative ingroup outcomes).

*Individual differences in empathy.* It is possible that a stronger manipulation of outgroup empathy would have increased cooperation among all group members, not just those low in empathic concern. Likewise, a stronger manipulation of outgroup empathy might also have decreased competition among all group members, not just among men high in empathic concern. Few studies have investigated both situational manipulations of empathy along with dispositional assessments of empathy. Davis' (1983b) study with individuals is a notable exception. He found that the EC subscale of the IRI moderated the impact of an empathy manipulation on interindividual helping. Davis' (1983b) empathy manipulation was very similar to the one used here. Participants in his study received a message from fictional woman in which she asked participants to help her by baby-sitting, doing chores, and providing transportation. Participants were randomly assigned to either imagine this woman's feelings (empathy condition) or not (control condition). Consistent with the cooperation results of the present study, Davis (1983b) found a significant interaction between EC and the empathy manipulation, such that EC was positively related to helping in the control condition, but was unrelated to helping in the empathy condition. Like the results of the current study, Davis' (1983b) results suggest that individual differences in empathic concern moderate the impact of empathic perspective-taking instructions.

Compatible results were also obtained by Graziano and colleagues (2007) using a measure of agreeableness. Agreeableness and empathic concern are highly correlated (e.g., Graziano et al. found a correlation of .53). Graziano et al. (2007) offered a Person X Situation perspective on agreeableness, empathy, and helping. Across several studies, they found that empathic perspective-taking instructions increased interindividual helping among participants who were low, but not high in agreeableness. Graziano et al.'s findings correspond with the present finding that the outgroup empathy perspective-taking exercise increased cooperation among participants who were low, but not high in empathic concern. Thus, the current results, like those of Davis (1983b) and Graziano et al. (2007), give credence to the Lewinian idea that behavior can best be understood by examining both the person and the situation.

*Gender differences in empathy.* While the step 1 cooperation model revealed that the outgroup empathy exercise increased intergroup cooperation among male groups only, this gender difference was eliminated in step 2 when EC and EC interactions were included in the model. This suggests that although more men than women tend to be low in empathic concern, the outgroup empathy exercise was just as likely to increase cooperation among low-EC women as low-EC men. Conversely, an unexpected gender interaction did remain for competition versus withdrawal. The outgroup empathy exercise made male group members who were high in EC more likely to withdraw and less likely to compete with the outgroup (the reverse was true for men low in EC). It is unclear why the outgroup empathy manipulation was more influential for men than women. In fact, the manipulation checks revealed that women in the outgroup empathy condition were more likely than men to consider the outgroup's feelings before making their PDG-Alt choices. However, such

consideration did not appear to influence women's actual behavior. Thus, although women were quite capable of empathizing with the outgroup, outgroup empathy did not make them more likely to withdraw than compete. These findings indicate that the relationship between empathy and gender is more complex than has been described by previous research (cf. Eisenberg & Lennon, 1983), and points to the importance of the distinction among cooperative, withdrawal, and competitive responses for delineating the role of empathy in modifying intergroup conflict.

The gender difference observed for competition versus withdrawal is particularly interesting in light of a prior finding by Davis (1983b). Davis (1983b) found that empathic perspective-taking instructions similar to the outgroup empathy exercise used in Experiment 1 made women, but not men, more likely to help another individual. Together with the current results, this suggests that women might be more influenced by empathic feelings in interindividual contexts, but men might be more influenced by empathic feelings in intergroup contexts. It is possible that gender roles (Eagly & Crowley, 1986; Eagly & Steffen, 1986) compel women to act on their feelings of empathy in interindividual interactions, but do not require such actions in intergroup interactions. Why men would be more influenced by empathic perspective-taking in intergroup contexts is less clear. Perhaps female gender roles (Eagly & Crowley, 1986; Eagly & Steffen, 1986) encourage a relatively stronger orientation toward the ingroup than male gender roles, making them less responsive to empathic feelings toward the outgroup. In noncorrespondent situations like the PDG-Alt matrix (Kelley & Thibaut, 1978), women's primary concern may be to help their ingroup, and this concern for the ingroup may override their feelings of concern for the outgroup. As I

did not have a priori predictions regarding gender differences in competition and withdrawal, the reliability of this difference should be verified by future research.

## CHAPTER III

### EXPERIMENT 2: EMPATHY AND INTERGROUP AGGRESSION

In Experiment 2, I used the same empathy manipulation as in Experiment 1 in order to investigate similarities and differences in how empathy affects intergroup aggression versus intergroup conflict. Intergroup aggression refers to behaviors meant to harm another group (Meier & Hinsz, 2004; Struch & Schwartz, 1989). In Experiment 2, intergroup aggression was measured with the hot sauce paradigm (Lieberman, Solomon, Greenberg, & McGregor, 1999; McGregor, Lieberman, Greenberg, Solomon, Arndt, Simon, & Pyszczynski, 1998; Meier & Hinsz, 2004). The hot sauce paradigm requires provoking or angering participants and then providing them with an opportunity to aggress against a target by allocating spicy hot sauce to them (Lieberman et al., 1999). In some experiments, the provocation involves having participants drink a noxious juice sample purportedly prepared by the target (e.g., McGregor et al., 1998); in other experiments, the provocation involves showing participants a large amount of hot sauce (approximately 50 grams) and telling participants it was allocated to them by the target (Meier & Hinsz, 2004). Lieberman et al. (1999) argued for the ecological validity of using hot sauce to measure aggression by noting that spicy food has been used in both aggressive “real world acts” (e.g., by a cook at a Denny’s restaurant in New Hampshire) and media portrayals (e.g., by Robin Williams’ character in the film “Mrs. Doubtfire”).

Few studies have compared intergroup conflict with intergroup aggression. Meier and Hinsz (2004) indirectly investigated this issue by extending research on interindividual-

intergroup discontinuity to the realm of aggression. Interindividual-intergroup discontinuity refers to the finding that groups are more competitive than individuals in mixed-motive situations like the PDG (Wildschut et al., 2003). Meier and Hinz (2004) found that groups are also more aggressive than individuals. Meier and Hinz (2004) used the hot sauce paradigm (Lieberman et al., 1999; McGregor et al., 1998) to test whether groups would force other groups and individuals to eat more hot sauce than would individuals. They found that following a mild provocation (a) groups allocated more hot sauce than individuals; (b) more hot sauce was allocated to groups than to individuals; and (c) more hot sauce was allocated in intergroup interactions (i.e., group vs. group) than in interindividual interactions (i.e., individual vs. individual). In addition, they found that group-on-group interactions exhibited the most aggression, while one-on-one interactions exhibited the least aggression; group-on-one and one-on-group interactions exhibited moderate aggression, and did not differ from each other.

Wildschut, Insko, and Pinter (2007) found a similar pattern of results using the PDG. Wildschut et al. (2007) found that group-on-group interactions exhibited the most competition, while one-on-one interactions exhibited the least competition; group-on-one and one-on-group interactions exhibited moderate competition, and did not differ from each other. The compatibility of Meier and Hinz's (2004) aggression findings with Wildschut et al.'s (2007) competition findings might suggest that the same factors that affect conflict in prisoner's dilemma situations might also affect aggression. However, there are important differences between conflict (i.e., competition versus cooperation) and aggression that call this assumption into question.

First, intergroup conflict, as modeled by the PDG is an interdependent situation in which outcomes for both sides are determined by the *combination* of decisions made by the two sides (Kelley et al., 2003; Kelley & Thibaut, 1978). Intergroup aggression, on the other hand, is a situation in which the outcomes for one side are unilaterally determined by the other side. Behaving aggressively toward another group will not influence one's own group's outcomes, unless, of course, there are multiple interactions between the two groups. Thus, intergroup aggression might be characterized as situation of "mutual partner control" (Kelley et al., 2003) or "mutual fate control" (Kelley & Thibaut, 1978) because each side's own fate is completely determined by the other side. On the other hand, in prisoner's dilemma situations each side has a degree of "actor control" (Kelley et al., 2003) or "reflexive control" (Kelley & Thibaut, 1978) over its own outcomes. Schopler and colleagues (Schopler, Insko, Wieselquist, Pemberton, Witcher, Kozar et al., 2001) did not find evidence of interindividual-intergroup discontinuity with a mutual fate control (MFC) matrix—neither groups nor individuals acted competitively in an MFC matrix. However, as discussed earlier, Meier and Hinsz (2004) did find evidence of interindividual-intergroup discontinuity using the hot sauce paradigm. The inconsistency between these two studies might be due to another important difference between conflict and aggression—the presence of provocation.

As defined by Anderson and Bushman (1997, p. 29), provocation refers to "acts of harm committed by the target against the person whose aggressive behavior is eventually assessed." Provocation is an important issue to consider because most research on conflict (e.g., research using the PDG; Wildschut et al., 2003) does not include provocation from the target whereas most research on aggression does (Anderson & Bushman, 1997; Berkowitz, 1989; Bettencourt & Miller, 1996; Meier & Hinsz, 2004). Comparing Meier and Hinsz's

(2004) aggression results to Schopler et al.'s (2001) MFC results raises the possibility that provocation might exacerbate the tendency for groups to be more aggressive than individuals. This possibility is not directly examined in the present research, but the question of how provocation affects intergroup relations is an important one that merits further investigation.

To be consistent with prior research on intergroup aggression (Meier & Hinsz, 2004), the Experiment 2 procedure included provocation in order to investigate how empathy affects intergroup aggression. Specifically, Experiment 2 employed the procedure used by Meier and Hinsz (2004), in which, before making their hot sauce allocations, groups were shown a large amount of hot sauce (48.18 grams) and were told that this amount was allocated to them by the other group. As Experiment 1 did not include a provocation from the outgroup but Experiment 2 did, potential differences between the two studies might be due to the presence of a provocation from the target.

In sum, while both intergroup conflict and intergroup aggression are similar in that they require groups to decide whether to act in ways that could potentially harm the outgroup, there are also important differences between conflict and aggression. These differences raise the question of whether empathy will affect intergroup aggression in Experiment 2 in a way similar to how it affected intergroup conflict in Experiment 1.

#### Method

Participants were 288 students (132 men, 156 women) enrolled in introductory psychology classes at the University of North Carolina at Chapel Hill. The independent variables in this experiment were identical to those used in Experiment 1 except for two small changes. The wording of the empathy manipulation was modified to be consistent with

the hot sauce procedure, and a more recent version of the Test of Self-Conscious Affect was used (TOSCA-3; Tangney, Dearing, Wagner & Gramzow, 2000).

### *Procedure*

Participants arrived at the laboratory in groups of six (all women or all men), and on arrival, were randomly assigned an identification number (1-6). Participants 1, 2, and 5 were escorted to a room on the left side of the suite, and participants 3, 4, and 6 were escorted to a room on the right side of the suite.

Participants were informed that the experiment was an investigation of personality, taste preference, and interactions between groups. During the experiment they would fill out several personality questionnaires and would taste and give their impressions of a food sample. Participants were told that different foods were being examined, and that, in this experiment, they would taste and rate hot sauce. They were further instructed that the experimenters needed to remain blind to the specifics of the sample type and therefore they would be asked to select samples of hot sauce for others to consume.

After receiving these instructions, participants completed a consent form, the IRI, and the TOSCA-3. To support the cover story that the study was about taste preferences, participants also filled out a general taste preference questionnaire (Lieberman et al., 1999; McGregor et al., 1998) in which they indicated how much they like foods that are sweet, crisp, creamy, salty, spicy, and tart (-3 = *dislike extremely*, 3 = *like extremely*). In addition, participants completed one copy of the information sheet used in Experiment 1 (see Appendix).

Next, to support the provocation cover story that the other group had allocated a lot of hot sauce for their group to consume, the groups engaged in a short creativity task in which

they competed against each other. The task involved listing creative uses for a paperclip (Guilford, 1967). Groups had four minutes to complete this task. Following its completion, each side was told that they won and each person received a piece of candy as a prize. Telling each group that they had won the paperclip task introduced the possibility that the members of the other group were sore losers that would retaliate by allocating a large portion of hot sauce.

*Hot sauce allocation task.* Following the paperclip task, all participants were asked to consume a small portion of hot sauce, so that they understood that the sauce they would be allocating was hot and potentially painful. For the hot sauce tasting, the experimenter gave each participant a popsicle stick and brought a cup with hot sauce to each group's room. The experimenter recited the following instructions:

We would now like everyone to sample a small portion of the hot sauce so that you understand what it tastes like. I would like each of you to take one of these sticks and dip it into the cup of hot sauce so you can sample it. Please dip your stick into the hot sauce until it touches the bottom of the cup. This is just so everyone tastes the same amount. Water is available for each of you if you desire.

The hot sauce was made following Lieberman et al.'s (1999) instructions, which required mixing five parts Heinz chili sauce with three parts Tapatio salsa picante to make a sufficiently hot and evenly consistent sauce. After tasting the hot sauce, all participants were asked several questions about the hot sauce: (a) How hot was the sauce you just tasted? (0 = *not at all hot*; 6 = *extremely hot*); (b) How painful do you think it would be to eat a tablespoon of this sauce? (0 = *not at all painful*; 6 = *extremely painful*); (c) How much did you like the sauce that you just tasted? (-3 = *extremely dislike*; 3 = *extremely like*); (d) How much do you like hot sauce in general? (-3 = *extremely dislike*; 3 = *extremely like*).

After answering these questions, participants were instructed that to make the experiment run faster, and because the experimenters needed to remain blind to certain specifics about the food type, each group would be asked to select the amount of hot sauce for the other group to consume. The experimenter then handed each participant a written copy of the following instructions, and read these instructions aloud:

In a few moments, each group will be asked to allocate a portion of hot sauce for the other group to consume. To allocate the hot sauce, your group will take a container of hot sauce and use a plastic spoon to put a portion of hot sauce into a plastic cup that I will hand out in a few moments. You can take as much time as needed and you can give as little or as much hot sauce as you see fit, but remember that all the hot sauce you allocate will be consumed by the other group. Also, please make sure that the members of your group agree about the amount of hot sauce to allocate. The amount of hot sauce that you allocate should reflect your group's collective opinion. The amount of hot sauce that you allocate will be the amount each individual group member must consume.

We realize that this is a lot of information. To be sure that you fully understand the hot sauce allocation procedure, we would like for each of you to engage in a brief writing exercise. This writing exercise is to be completed by each of you individually, and should take approximately 10 minutes to complete. Please do not discuss the contents of this writing exercise with the other members of your group. Following this writing exercise, I will give each group a plastic cup in order to allocate the hot sauce.

Participants were informed that both groups would get chips to eat with the hot sauce, and to support this cover story, a bag of tortilla chips was placed on the table in each group's room.

Before completing the writing exercise, participants were given an opportunity to get to know the members of the other group. The experimenter gave each group a folder containing the information sheets ostensibly completed by the other group. The purpose of including these information sheets was two-fold. First, as in Experiment 1, the information sheets supported the empathy manipulation by facilitating acquaintanceship among the participants. Second, the information sheets supported the provocation cover story that the

other group had allocated a lot of hot sauce for their group to consume. The bogus information sheets used in Experiment 2 were different than those used previously. In Experiment 2, participants read that one member of the other group was competitive and enjoyed poker, and another member was intense and enjoyed martial arts (see Appendix). In pilot testing, participants did not complete nor receive these information sheets. However, in these pilot sessions, there was a high degree of suspicion regarding whether the other group had actually allocated such a large amount of hot sauce for them to consume. Including these sheets seemed to allay some of the suspicion associated with the provocation cover story.

After giving each group a moment to read over the information sheets, the experimenter had participants move to individual rooms in the suite, and handed each participant an empathy writing exercise.

*Empathy manipulation.* As in Experiment 1, the empathy manipulation was based on instructions used by Batson and colleagues (Batson et al., 2003; Batson & Ahmad, 2001; Batson & Moran, 1999; see also T. R. Cohen, et al., 2006). Participants in the outgroup empathy condition received these instructions.

In this exercise we would like for you to *imagine how the members of the other group feel about the hot sauce allocation task*. That is, imagine how the members of the other group are likely to feel while considering how much hot sauce to allocate. Imagine also how the members of the other group will feel while waiting to find out how much hot sauce their group must consume. Imagine how the members of the other group will feel when they receive the hot sauce. *Take about one minute* for this imagination exercise, getting as clear a sense as possible of *how the members of the other group likely feel*. Then, at the end of the minute, *write down what you imagined*. We have found that carefully following this procedure can ensure understanding of the upcoming task.

Participants in the ingroup empathy condition received the same instructions except the phrase “your own group” was substituted for the phrase “the other group.” Participants in the objective condition received instructions that asked them to remain objective:

In this exercise we would like for you to think about the upcoming hot sauce allocation task. While thinking about the upcoming task, try to *take an objective perspective*. That is, try not to get caught up in how the other participants in today's study feel; just remain objective and detached. *Take about one minute* for this thought exercise, getting as clear a sense as possible of the upcoming hot sauce allocation task. Then, at the end of the minute, *write down what you thought about*. We have found that carefully following this procedure can ensure understanding of the upcoming task.

*Hot sauce allocation and provocation.* Participants were given approximately 10 minutes to work on the empathy writing exercise. Following completion of the exercise, the experimenter collected the exercises and had participants return to their group's home room. The experimenter then stated that one group would be randomly chosen to allocate first, and one would allocate second. The experimenter asked each group to draw a piece of paper to determine the order. Each group drew a piece of paper that stated, "Your group will allocate second." At this time, the experiment asked each group to close the door to their room and await further instructions.

The experimenter waited for three minutes so participants believed the experimenter was entering the other group's room and collecting the hot sauce that they allocated. After three minutes, the experimenter entered each group's room and placed a nine-ounce cup containing 48.18g of hot sauce (1 *SD* above the mean amount allocated in McGregor et al., 1998; cf. Meier & Hinsz, 2004) onto the table and told the group:

The other group allocated first. They allocated this much hot sauce for each of you to consume. You will receive chips to eat with the hot sauce. At this time, I would like your group to allocate a portion of hot sauce for the other group to consume. The amount of hot sauce that you allocate will be the amount each individual group member must consume. I will take the cup of hot sauce with the amount that each of you will consume out of the room so it does not get spilled. After you are done with your allocation, I will bring your group three cups of this amount of hot sauce with some chips. When you are finished with your allocation, please slide this blue sheet of paper under the door and wait for me to return.

At this point, the experimenter left the room and waited for each group to place the blue sheet under the door. The bogus amount of hot sauce was shown to the participants to induce mild provocation (Meier & Hinsz, 2004). After the hot sauce allocations were collected, each participant was given a questionnaire with supplementary dependent measures and questions designed to probe for suspicion. Following the completion of the questionnaires, participants were fully debriefed and dismissed. No participant was forced to consume hot sauce.

### *Dependent Variables*

*Hot Sauce.* The key dependent variable was how much hot sauce groups allocated. Hot allocation was measured in grams (.01 increments) using a *Mettler Toledo* digital scale (model number PL601-S).

*Empathy manipulation check.* As in Experiment 1, the content of the writing exercise was coded to assess the effectiveness of the empathy manipulation. Two independent raters coded for whether the participant thought about either group (ingroup thoughts,  $\kappa = .94$ ; outgroup thoughts,  $\kappa = .95$ ), and whether the participant discussed the feelings of either group (ingroup feelings,  $\kappa = .95$ ; outgroup feelings,  $\kappa = .99$ ). The judges' ratings were averaged to form indices of these manipulation checks. Each index ranged from 0 (*did not mention thoughts / feelings*) to 1 (*mentioned thoughts / feelings*).

### *Probing for Suspicion by Analyzing Reasons for Hot Sauce Allocation*

Following the hot sauce allocation, each group member was asked why their group allocated the amount that they did: "Your group was given the opportunity to allocate hot sauce for the other group to consume. Think about how much your group allocated and tell us why your group allocated that amount." I probed for suspicion about the procedure by

examining responses to this question. Most group members gave responses that matched their allocations and did not indicate suspicion about the hot sauce procedure. For example, a group that allocated 138 grams of hot sauce answered:

We allocated a lot of hot sauce to each of them because we were going second and they had just allocated a lot to us (way more than we wanted). So we got to allocate a disgusting amount without worrying what they would do to us.

A group that only allocated 27 grams of hot sauce responded, “We allocated two spoonfuls since it was a little less than what the other group allocated to us. We didn't want to ‘torture’ them with too much, so we tried to give a very small amount.”

Three groups responded to the question by expressing a high degree of suspicion about the experiment. These groups explicitly stated that they did not believe that the other group would have to eat the hot sauce allocated to them. For example, one suspicious group member wrote:

Honestly, because I do not for a second believe that the other group will receive the amount that will be allocated by us. I suspect that most of the procedure in this lab have been manipulations of me and in turn, have manipulated my reactions.

Each of the suspicious groups filled their entire cup (approximately 200g). These groups were excluded from all analyses. After excluding the three suspicious groups, the final sample contained 93 three-person groups (279 participants).

### *Data Analysis*

Linear regression was used to investigate how the empathy manipulation, gender, EC, and guilt influenced the amount of hot sauce allocated. As in Experiment 1, the empathy manipulation was partitioned into two planned orthogonal contrasts: (a) outgroup empathy versus objective; (b) ingroup empathy versus outgroup empathy and objective combined. The

unit of analysis was the group. Group members' responses were averaged to form group-level data.

The analyses were conducted in two steps. The first step included the empathy manipulation contrasts and gender. In the second step, I added EC and guilt, along with the two- and three-way interactions. As in Experiment 1, in preliminary analyses, I also included PT and shame in the model, but there were no significant effects for these variables so I do not discuss them further.

## Results

### *Hot Sauce Ratings*

If hot sauce allocations are to be used as a measure of aggression, it is imperative that participants think the hot sauce is painful. An inspection of the mean hot sauce ratings revealed that male groups liked the hot sauce and did not think it was very painful (see Table 6). While female groups did not think the hot sauce was extremely painful, their average pain rating was slightly above the midpoint of the scale, indicating that they felt it would be at least moderately painful to eat a tablespoon of the hot sauce. The hot sauce recipe used in Experiment 2 was identical to the recipe used by Lieberman et al. (1999). Lieberman et al. indicate that their participants (undergraduates at the University of Arizona) found the sauce to be quite hot and painful. It is possible that undergraduates at the University of North Carolina had different thresholds for the painfulness of hot sauce than undergraduates at the University of Arizona. Alternatively, it is also possible that the relatively low ratings of hotness and painfulness observed in the current study were due to the fact that the hot sauce rating scale used in Experiment 2 differed from Lieberman et al.'s (1999) rating scale.

To account for the fact that the hot sauce was not as painful as intended (especially for male groups), the pain rating (“How painful do you think it would be to eat a tablespoon of this sauce?”) was mean centered and included as a covariate in all statistical analyses. Interactions with the pain rating were also included in the analyses.

#### *Empathy Manipulation Check*

Table 7 shows the results for the empathy manipulation check. As expected, participants in the ingroup empathy condition thought about and discussed the feelings of their ingroup more than participants in the other conditions. Likewise, participants in the outgroup empathy condition thought about and discussed the feelings of the outgroup more than participants in the other conditions.

#### *Hot Sauce Allocations*

Table 8 presents the hot sauce allocations by the empathy manipulation and gender. Male groups in the objective condition allocated, on average, 84.30 grams of hot sauce, which is very similar to the average allocation of 92.87 grams made by male groups in Meier and Hinz (2004) study (Meier and Hinz’s study did not include female participants). Thus the allocations made by male groups in the control condition of Experiment 2 replicate prior results and offer support for the reliability of the hot sauce procedure for measuring intergroup aggression.

Differences between the empathy conditions were investigated with linear regression. Table 9 presents the linear regression results of the step 1 model. As shown in Table 9, there were two significant effects: (a) Gender X Ingroup Empathy, and (b) Pain Rating X Outgroup Empathy.

*Gender X Ingroup Empathy.* The Gender X Ingroup Empathy interaction was significant,  $B = 36.62$ ,  $SE = 12.28$ ,  $p = .004$ . Probing this interaction (Preacher et al., 2006) revealed that female groups in the ingroup empathy condition allocated significantly more hot sauce than female groups in the other conditions,  $t(81) = 2.90$ ,  $p = .005$  (see Table 8); male groups in the ingroup empathy condition did not significantly differ from those in the other conditions,  $t(81) = -1.41$ ,  $p = .16$ .

*Pain Rating X Outgroup Empathy.* The interaction between the pain rating and the outgroup empathy manipulation was significant,  $B = 19.54$ ,  $SE = 9.51$ ,  $p = .04$ , and is shown in Figure 5. Whereas greater pain ratings were associated with marginally more aggression in the outgroup empathy condition,  $B = 19.57$ ,  $SE = 11.20$ ,  $p = .08$ , there was a nonsignificant tendency for greater pain ratings to be associated with less aggression in the objective condition,  $B = -19.49$ ,  $SE = 12.99$ ,  $p = .14$ . Probing this interaction (Preacher et al., 2006) revealed that groups in the outgroup empathy condition gave less than those in the objective condition if they did not think the hot sauce was at all painful  $t(81) = -2.22$ ,  $p = .03$ , but gave marginally more than those in the objective condition if they thought the hot sauce was extremely painful,  $t(81) = 1.82$ ,  $p = .07$ .

The step 2 model that included EC, guilt, and the corresponding interaction terms did not reveal any significant effects beyond those that were significant in step 1. Both the Gender X Ingroup Empathy interaction and the Pain Rating X Outgroup Empathy interaction remained significant after EC and guilt and the EC and guilt interactions were entered into the regression model.

## Discussion

The goal of Experiment 2 was to investigate how ingroup and outgroup empathy affect intergroup aggression. Hot sauce allocations were used to measure intergroup aggression (Lieberman et al., 1999; McGregor et al., 1998; Meier & Hinsz, 2004). I found a significant interaction between the hot sauce painfulness rating and the outgroup empathy versus objective contrast. As shown in Figure 5, groups in the outgroup empathy condition who thought the hot sauce was painful allocated more than those in the objective condition, but groups in the outgroup empathy condition who did not think the sauce was painful allocated less than those in the objective condition. Thus, the same empathic perspective-taking exercise that caused group members low in empathic concern to cooperate in the PDG-Alt matrix (Experiment 1) caused groups who thought the hot sauce was painful to be aggressive in the hot sauce allocation task (Experiment 2). Why did the same instructions yield such different effects in the two experiments? The significant interaction between the outgroup empathy instructions and the pain rating points to the important role of provocation in determining whether outgroup empathy will foster positive versus negative intergroup relations.

Groups who did not think the hot sauce was painful would not have felt provoked by receiving a large amount to eat. Accordingly, among these groups the outgroup empathy exercise decreased aggression (i.e., made groups allocate less hot sauce). Reasons given by these groups suggest that in the absence of a perceived provocation, considering the feelings of outgroup members might motivate fairness and reciprocity. For example, a participant in the outgroup empathy condition who did not think the hot sauce was painful wrote: “We

allocated the same amount as them. It seemed fair.” This group allocated 47 grams of hot sauce.

On the contrary, receiving a large amount of hot sauce would have been regarded as very provocative by groups who thought the sauce was painful. For these groups, the outgroup empathy exercise increased aggression (i.e., made them allocate more hot sauce). Reasons given by these groups suggest that the outgroup empathy exercise may have increased their desire for retaliation against the outgroup. For example, a participant in the outgroup empathy condition who thought the hot sauce was quite painful wrote: “We gave the other group more because they gave us quite a bit to begin with. We decided to ‘punish’ them for giving us so much; so we gave them more.” This group allocated 113 grams of hot sauce.

While provocation from an outgroup seems to undermine the effectiveness of outgroup empathy in fostering positive intergroup relations, provocation does not seem to influence how ingroup empathy affects intergroup relations. Regardless of the perceived painfulness of the hot sauce, female groups in the ingroup empathy condition allocated significantly more than female groups in the other conditions (see Table 8). Thus, the same exercise that caused guilt-prone group members to act uncooperatively in the PDG-Alt matrix also caused female groups to act aggressively in the hot sauce allocation task. Reasons provided by the female groups suggest that a desire for retaliation may have motivated their aggression. For example, a woman in the ingroup empathy condition indicated that her group allocated a lot of hot sauce in order to “fight back”: “We allocated a pretty large amount because the other group gave us so much. We were a little surprised at how much they gave us and decided to ‘fight back.’” This woman’s group allocated 112 grams. Compare this

response to one given by a woman in the objective condition, whose group only allocated 20 grams: “We didn't want the other group to have to eat as much hot sauce, so we gave them less than they gave us. We decided to be nice rather than seek revenge and give them more.”

It is interesting that considering the feelings of ingroup members made female groups behave aggressively, but did not do so for male groups. One possible explanation for this finding relates to gender differences in social roles (Eagly & Crowley, 1986; Eagly & Steffen, 1986). As discussed earlier, female gender roles may encourage a relatively stronger orientation toward the ingroup than male gender roles. This greater orientation toward the ingroup might compel women to act on their empathic feelings for ingroup members and retaliate against outgroups who harm their group.

Another possible explanation for the observed Gender X Ingroup Empathy interaction relates to gender differences in moral orientation (Gilligan, 1982; Jaffee & Hyde, 2000). Gilligan (1982) proposed that when considering the appropriateness of a given behavior, women tend to be more “care oriented” (i.e., focused on maintaining relationships and responding to the needs of others), while men tend to be more “justice oriented” (i.e., focused on principles of equity and fairness). While Gilligan and others (e.g., Jaffee & Hyde, 2000) acknowledge that men and women use both care and justice reasoning, meta-analytic evidence suggests that there is a small tendency for women to be relatively more care oriented than men (Jaffee & Hyde, 2000). If women's moral reasoning is relatively more focused on maintaining relationships and responding to the needs of others, it follows that they might be more likely to behave aggressively toward an outgroup that has hurt their group if they are asked to explicitly consider the feelings of those in their ingroup. Thus, the

ingroup empathy exercise may have amplified women's care orientations (Gilligan, 1982), making them more likely to act aggressively in response to provocation from the outgroup.

Unlike in Experiment 1, empathic concern and guilt did not moderate the effects of the empathy manipulation in Experiment 2. One key difference between the experiments was that in Experiment 2, group members were seated in the same room and made a collective group decision based on group discussion. In Experiment 1, group members were seated in their own rooms and did not communicate with fellow ingroup members. Instead, participants in Experiment 1 cast an anonymous vote for the decision they wanted their group to make. Personality characteristics of individual group members might be less likely to influence intergroup interactions when group decisions are made collectively through discussion. A similar idea was proposed by Meier, Hinsz, and Heimerdinger (2007) in their review of aggression involving groups. They suggested that "strong group situations may overwhelm the influence of individual differences" (Meier et al., 2007, p. 308). There were, of course, a number of other differences between Experiments 1 and 2, so this interpretation of the present results should be regarded as tentative. Nonetheless, the idea that personality characteristics are more or less influential in different contexts is an interesting possibility that should be explored by future research.

## CHAPTER IV

### GENERAL DISCUSSION

How does feeling empathy or concern for others affect intergroup relations? The present research indicates that the answer is more complex than many might suspect. While it has been suggested that feeling empathy for outgroup members fosters positive intergroup relations (Stephan & Finlay, 1999), the current findings revealed that this statement does not universally hold true. The presence of provocation from an outgroup might represent an important boundary condition regarding when the consideration of outgroup members' feelings will promote positive versus negative intergroup relations. In Experiment 1, I found that the consideration of outgroup members' feelings caused groups composed of individuals low in dispositional empathic concern to behave cooperatively, but in Experiment 2, I found a very different pattern of results. In Experiment 2, I found that the consideration of outgroup members' feelings caused groups who thought the hot sauce was painful to act aggressively, but caused groups who did not think the hot sauce was painful to act benevolently. Taken together, the results of the two studies suggest that in the absence of provocation from an outgroup, feeling empathy for outgroup members will promote positive intergroup relations (e.g., more cooperative, less aggressive behavior), but in the presence of provocation from an outgroup, feeling empathy for outgroup members will promote negative intergroup relations (e.g., less cooperative, more aggressive behavior). Note, however, that provocation was not directly manipulated in either study; so while the results are consistent with this conclusion,

they do not provide definitive evidence that provocation accounted for the differences between how outgroup empathy affected cooperation and aggression.

Knowing that provocation from an outgroup may cause outgroup empathy interventions to exacerbate instead of attenuate intergroup hostilities has important implications for intergroup relations programs. As pointed out by Stephan and Finlay (1999), many intergroup relations programs attempt to promote positive intergroup relations by fostering empathy between rival groups. Often, however, these programs are ineffective because they are created without full understanding of the complexity of the relationship between empathy and intergroup behavior. Stephan and Finlay (1999) provided several recommendations for the use of empathy in intergroup relations programs, but their suggestions did not include a discussion of provocation. Thus, the present findings suggest an important addendum to Stephan and Finlay's (1999) guidelines: Intergroup relations trainers, facilitators, and educators should be aware that fostering empathy for outgroups can backfire if the outgroup acts in a hostile manner. In the context of a hostile provocation, outgroup empathy interventions are likely to increase retaliation rather than forgiveness.

Feeling empathy for ingroup members is likely to foster negative intergroup relations regardless of whether provocation is present. In Experiment 1, I found that the consideration of ingroup members' feelings caused groups high in guilt proneness to behave uncooperatively toward the outgroup, and in Experiment 2, I found that consideration of ingroup members' feelings caused female groups to behave aggressively toward the outgroup. While these results do not indicate that ingroup empathy will foster negative intergroup relations among all group members, they do suggest that, at least for some

individuals, feeling concern and compassion for those in their ingroup will lead to negative behaviors toward outgroups.

The present research builds on and extends the work of Davis (1983b) and Graziano et al. (2007) by exploring when personality will interact with situational manipulations of empathy to influence behavior. While unanswered questions remain regarding exactly when gender and individual differences will moderate the impact of empathic perspective-taking instructions, the current research represents an important step forward in the exploration of this issue. Future research should continue to investigate when gender and personality factors (e.g., empathic concern, guilt proneness) will be influential in determining how empathy affects intergroup relations. Investigating this issue is important for determining when and for whom empathy interventions will be most successful.

Future research should also continue to investigate how provocation affects intergroup relations. Whereas the current results suggest that provocation may hinder the effectiveness of outgroup empathy in fostering positive intergroup relations, the present research did not test this proposition directly. Future studies should manipulate provocation to determine whether it does, in fact, explain the observed differences in how outgroup empathy affected behavior in the PDG-Alt versus the hot sauce task.

### Conclusion

Philosophers, scientists, and scholars have long argued for the importance of empathy in promoting moral behavior. While empathy may, indeed, promote moral behavior in certain circumstances, the present research suggests that this might not always be the case. Those who wish to use empathy to improve intergroup relations should be mindful of the important

role of provocation in determining whether fostering empathy for outgroup members will promote positive versus negative intergroup relations.

## APPENDIX

### Information Sheet – Experiment 1

*Bogus information given in italics.*

**Participant #** \_\_\_\_ 1, 2, 3, 4, or 5 (*assume actual participant is 6*)

**What is your favorite color?** 1) *Blue*; 2) *Red*; 3) *Green*; 4) *Navy Blue*; 5) *Yellow*

**List two adjectives that describe you.**

- 1) *Friendly & Energetic*; 2) *Intelligent & Outgoing*; 3) *Spontaneous & Athletic*;  
4) *Funny & Nice*; 5) *Happy & Easygoing*

**What is your favorite food?**

- 1) *Pizza*; 2) *Ice Cream*; 3) *Sushi*; 4) *Grilled Chicken*; 5) *Lasagna*

**List two hobbies or interests.**

- 1) *Music & Traveling*; 2) *Movies & Concerts*; 3) *Basketball & Reading*;  
4) *Swimming & Art*; 5) *Tennis & Sleeping*

**What is your favorite season?** 1) *Fall*; 2) *Summer*; 3) *Winter*; 4) *Summer*; 5) *Spring*

### Information Sheet – Experiment 2

*Bogus information given in italics.*

**Participant #** \_\_\_\_ 1, 2, 5 (*assume actual participant is in Group B: 3, 4, or 6*)

**What is your favorite color?** 1) *Red*; 2) *Green*; 5) *Blue*

**List two adjectives that describe you.**

- 1) *Competitive & Athletic*; 2) *Determined & Intense*; 5) *Confident & Outgoing*

**What is your favorite food?** 1) *Pizza*; 2) *Grilled Chicken*; 5) *Ice Cream*

**List two hobbies or interests.**

- 1) *Poker & Basketball*; 2) *Martial Arts & Fencing*; 5) *Traveling & Concerts*

**What is your favorite season?** 1) *Fall*; 2) *Spring*; 5) *Summer*

Table 1

*Experiment 1: Empathy Manipulation Check*

		Ingroup Empathy	Outgroup Empathy	Objective Perspective
Ingroup Thoughts <sup>1,2</sup>	Men	1.00 (.00)	.14 (.28)	.23 (.36)
	Women	.99 (.08)	.23 (.37)	.21 (.35)
Ingroup Feelings <sup>3,4</sup>	Men	.76 (.35)	.04 (.18)	.01 (.08)
	Women	.83 (.33)	.11 (.28)	.02 (.13)
Outgroup Thoughts <sup>5,6</sup>	Men	.10 (.23)	1.00 (.00)	.18 (.35)
	Women	.13 (.27)	.98 (.11)	.14 (.30)
Outgroup Feelings <sup>7,8,9</sup>	Men	.03 (.17)	.58 (.42)	.01 (.08)
	Women	.03 (.14)	.91 (.25)	.02 (.13)

*Note.*  $N = 356$ . The table presents means (with standard deviations) of raters' codings (1 = mentioned thoughts / feelings; 0 = did not mention thoughts / feelings).

<sup>1</sup> Ingroup Empathy vs. Other Conditions:  $F(1, 350) = 513.16, p < .001$

<sup>2</sup> Outgroup Empathy vs. Objective:  $F(1, 350) = .82, p = .37$

<sup>3</sup> Ingroup Empathy vs. Other Conditions:  $F(1, 350) = 587.85, p < .001$

<sup>4</sup> Outgroup Empathy vs. Objective:  $F(1, 350) = 3.09, p = .08$

<sup>5</sup> Outgroup Empathy vs. Other Conditions:  $F(1, 350) = 824.22, p < .001$

<sup>6</sup> Ingroup Empathy vs. Objective:  $F(1, 350) = 2.02, p = .16$ .

<sup>7</sup> Outgroup Empathy vs. Other Conditions:  $F(1, 350) = 804.37, p < .001$

<sup>8</sup> Ingroup Empathy vs. Objective:  $F(1, 350) = .20, p = .65$

<sup>9</sup> Gender:  $F(1, 350) = 21.87, p < .001$

<sup>10</sup> Gender X Outgroup Empathy vs. Other Conditions:  $F(1, 350) = 39.64, p < .001$

Table 2

*Experiment 1: PDG-Alt Choice Means by Empathy Manipulation and Gender*

Empathy Condition		Cooperation (X)	Withdrawal (Y)	Competition (Z)
Outgroup Empathy	Men	.33 (.48)	.39 (.49)	.28 (.45)
	Women	.18 (.39)	.54 (.50)	.28 (.45)
Ingroup Empathy	Men	.14 (.35)	.53 (.51)	.33 (.48)
	Women	.14 (.35)	.58 (.50)	.28 (.45)
Objective Perspective	Men	.12 (.33)	.59 (.50)	.29 (.46)
	Women	.21 (.41)	.56 (.50)	.23 (.43)

*Note.*  $N = 356$ . Values represent choice means (with standard deviations). Means for each row total 1.00. Choice means are equivalent to the proportion of participants in each cell making that PDG-Alt choice.

Table 3

*Experiment 1: Logistic Regression of PDG-Alt Choice as a Function of Empathy Manipulation and Gender*

Variable	Cooperation	Competition vs. Withdrawal
Outgroup Empathy vs. Objective	.64 (.30)*	.18 (.27)
Ingroup Empathy vs. Other Conditions	-.33 (.38)	.04 (.31)
Gender	-.05 (.31)	-.26 (.27)
Gender X Outgroup Empathy	-.73 (.36)*	-.08 (.33)
Gender X Ingroup Empathy	.09 (.45)	-.01 (.37)

*Note.*  $N = 356$ . Unstandardized regression coefficients (with standard errors) from logistic regression analyses are presented. All tests have 1 *df*.

\*  $p < .05$

Table 4

*Experiment 1: PDG-Alt Choice Means by Empathy Manipulation, Gender, Empathic Concern, and Guilt*

		Cooperation (X)		Withdrawal (Y)		Competition (Z)	
		Men	Women	Men	Women	Men	Women
Outgroup Empathy	Low EC	.36	.19	.28	.46	.36	.35
	High EC	.27	.17	.64	.61	.09	.22
	Low Guilt	.30	.15	.41	.53	.30	.32
	High Guilt	.44	.20	.33	.55	.22	.25
Ingroup Empathy	Low EC	.16	.12	.52	.59	.32	.29
	High EC	.09	.16	.55	.57	.36	.27
	Low Guilt	.17	.19	.52	.59	.30	.22
	High Guilt	.08	.11	.54	.57	.38	.33
Objective Perspective	Low EC	.10	.19	.65	.42	.26	.38
	High EC	.20	.22	.40	.63	.40	.16
	Low Guilt	.14	.19	.60	.54	.26	.27
	High Guilt	.00	.23	.50	.58	.50	.20

*Note.*  $N = 356$ . Values represent choice means (or proportion of participants making that choice). While regression analyses used continuous EC and Guilt assessments, for illustrative purposes, EC and Guilt were dichotomized here. Participants with EC scores at the median or below were categorized as Low EC, while those with scores above the median were categorized as High EC. Participants with Guilt scores at the median or below were categorized as Low Guilt, while those with scores above the median were categorized as High Guilt.

Table 5

*Experiment 1: Logistic Regression of PDG-Alt Choice as a Function of Empathy Manipulation, Gender, Empathic Concern, and Guilt*

Variable	Cooperation	Competition vs. Withdrawal
Outgroup Empathy vs. Objective	.49 (.33)	-.03 (.40)
Ingroup Empathy vs. Other Conditions	-.61 (.43)	.04 (.39)
Gender	-.16 (.37)	-.10 (.35)
Empathic Concern (EC)	.39 (.33)	-.70 (.38)
Guilt	-.33 (.32)	.51 (.40)
Gender X Outgroup Empathy	-.42 (.43)	.10 (.45)
Gender X Ingroup Empathy	.49 (.53)	-.12 (.45)
EC X Outgroup Empathy	-.56 (.23)*	-1.25 (.53)*
EC X Ingroup Empathy	.24 (.29)	.14 (.46)
EC X Gender	-.06 (.40)	.40 (.43)
Guilt X Outgroup Empathy	.19 (.22)	.82 (.55)
Guilt X Ingroup Empathy	-.59 (.29)*	.02 (.49)
Guilt X Gender	.23 (.40)	-.57 (.45)
Gender X EC X Outgroup Empathy		1.36 (.59)*
Gender X EC X Ingroup Empathy		.38 (.54)
Gender X Guilt X Outgroup Empathy		-.69 (.60)
Gender X Guilt X Ingroup Empathy		.01 (.57)

*Note.*  $N = 356$ . Unstandardized regression coefficients (with standard errors) from logistic regression analyses are presented. All tests have 1 *df*. For cooperation, three-way interactions were also tested, but none were significant, so they were trimmed from the cooperation model (cf. J. Cohen, Cohen, Aiken, & West, 2003).

\*  $p < .05$

Table 6

*Experiment 2: Means of Hot Sauce Ratings*

Question	Men	Women
How hot was the sauce you just tasted? <sup>1</sup> (0 = not at all hot; 6 = extremely hot)	2.92 (.70)	3.55 (.93)
How painful do you think it would be to eat a tablespoon of this sauce? <sup>2</sup> (0 = not at all painful; 6 = extremely painful)	2.82 (.81)	3.65 (1.05)
How much did you like the sauce that you just tasted? <sup>3</sup> (-3 = dislike extremely; 3 = like extremely)	1.12 (.72)	.31 (1.15)
How much do you like hot sauce in general? <sup>4</sup> (-3 = dislike extremely; 3 = like extremely)	1.19 (.87)	.31 (1.19)
How much do you like foods that are spicy? <sup>5</sup> (-3 = dislike extremely; 3 = like extremely)	1.51 (.82)	.62 (1.04)

*Note.*  $N = 93$  groups. Values represent the means for the hot sauce ratings (with standard deviations).

<sup>1</sup> Women vs. Men:  $F(1, 91) = 13.08, p < .001$

<sup>2</sup> Women vs. Men:  $F(1, 91) = 17.81, p < .001$

<sup>3</sup> Women vs. Men:  $F(1, 91) = 15.64, p < .001$

<sup>4</sup> Women vs. Men:  $F(1, 91) = 16.07, p < .001$

<sup>5</sup> Women vs. Men:  $F(1, 91) = 20.48, p < .001$

Table 7

*Experiment 2: Empathy Manipulation Check*

		Ingroup Empathy	Outgroup Empathy	Objective Perspective
Ingroup Thoughts <sup>1,2</sup>	Men	.99 (.05)	.25 (.35)	.31 (.33)
	Women	.98 (.09)	.11 (.15)	.28 (.33)
Ingroup Feelings <sup>3,4</sup>	Men	.93 (.17)	.13 (.20)	.04 (.07)
	Women	.96 (.12)	.04 (.11)	.00 (.00)
Outgroup Thoughts <sup>5,6</sup>	Men	.32 (.29)	.98 (.08)	.48 (.36)
	Women	.36 (.34)	.98 (.05)	.53 (.36)
Outgroup Feelings <sup>7,8</sup>	Men	.03 (.10)	.91 (.15)	.07 (.14)
	Women	.02 (.09)	.94 (.13)	.05 (.14)

*Note.*  $N = 93$  groups. The table presents means (with standard deviations) of raters' codings (1 = mentioned thoughts / feelings; 0 = did not mention thoughts / feelings).

<sup>1</sup> Ingroup Empathy vs. Other Conditions:  $F(1, 87) = 160.99, p < .001$

<sup>2</sup> Outgroup Empathy vs. Objective:  $F(1, 87) = 3.20, p = .08$

<sup>3</sup> Ingroup Empathy vs. Other Conditions:  $F(1, 87) = 980.07, p < .001$

<sup>4</sup> Outgroup Empathy vs. Objective:  $F(1, 87) = 4.22, p = .04$ .

<sup>5</sup> Outgroup Empathy vs. Other Conditions:  $F(1, 87) = 87.44, p < .001$

<sup>6</sup> Ingroup Empathy vs. Objective:  $F(1, 87) = 5.09, p = .03$

<sup>7</sup> Outgroup Empathy vs. Other Conditions:  $F(1, 87) = 1036.18, p < .001$

<sup>8</sup> Ingroup Empathy vs. Objective:  $F(1, 87) = 1.03, p = .31$

Table 8

*Experiment 2: Hot Sauce Allocation Means by Empathy Manipulation and Gender*

Empathy Condition		Hot Sauce
Outgroup Empathy	Men	71.58 (33.27)
	Women	53.15 (23.00)
Ingroup Empathy	Men	59.65 (32.37)
	Women	77.77 (38.84)
Objective Perspective	Men	84.30 (49.07)
	Women	50.96 (45.69)

*Note.*  $N = 93$  groups. Values represent the mean amount of hot sauce in grams (with standard deviations). Before allocating, each group learned that the other group allocated 48.18g of hot sauce for each of them to consume.

Table 9

*Experiment 2: Linear Regression of Hot Sauce Allocations as a Function of Empathy Manipulation and Gender*

Variable	
Outgroup Empathy vs. Objective	5.63 (8.83)
Ingroup Empathy vs. Other Conditions	-12.97 (9.18)
Gender	-6.79 (8.80)
Pain Rating (Centered)	.04 (7.79)
Gender X Outgroup Empathy	-6.33 (10.92)
Gender X Ingroup Empathy	36.62 (12.28)*
Pain Rating X Outgroup Empathy	19.54 (9.51)*
Pain Rating X Ingroup Empathy	1.01 (10.31)
Gender X Pain Rating X Outgroup Empathy	-16.08 (11.40)
Gender X Pain Rating X Ingroup Empathy	-12.82 (12.44)

*Note.*  $N = 93$  groups. Unstandardized regression coefficients (with standard errors) are presented. All tests have 1 *df*.

\*  $p < .05$

Figure 1. Three-choice prisoner's dilemma game matrix (PDG-Alt). This matrix represents a social interaction involving two groups (a bolded group and an outlined group). Each group has three choices: *X* represents cooperation, *Y* represents withdrawal, and *Z* represents competition. The values represent the amount of money (in U.S. cents) that each side receives as a function of the two groups' choices.

	<b>X</b>	<b>Y</b>	<b>Z</b>
<b>X</b>	<b>270</b> 270	<b>225</b> 225	<b>360</b> 90
<b>Y</b>	<b>225</b> 225	<b>225</b> 225	<b>225</b> 225
<b>Z</b>	<b>90</b> 360	<b>225</b> 225	<b>180</b> 180

Figure 2. Logistic regression estimate of the effect of Empathic Concern X Outgroup Empathy on cooperation. Higher scores represent more cooperation.

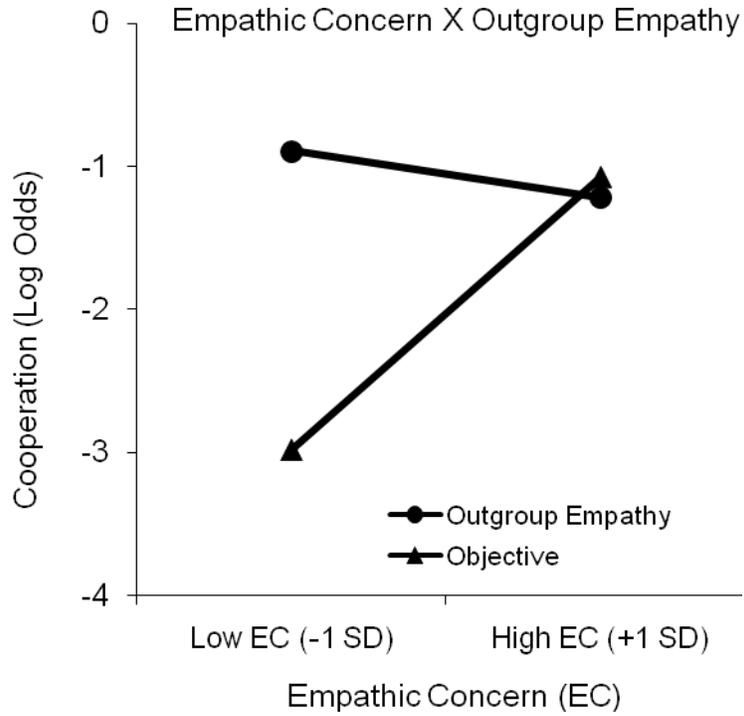


Figure 3. Logistic regression estimate of the effect of Guilt X Ingroup Empathy on cooperation. Higher scores represent more cooperation.

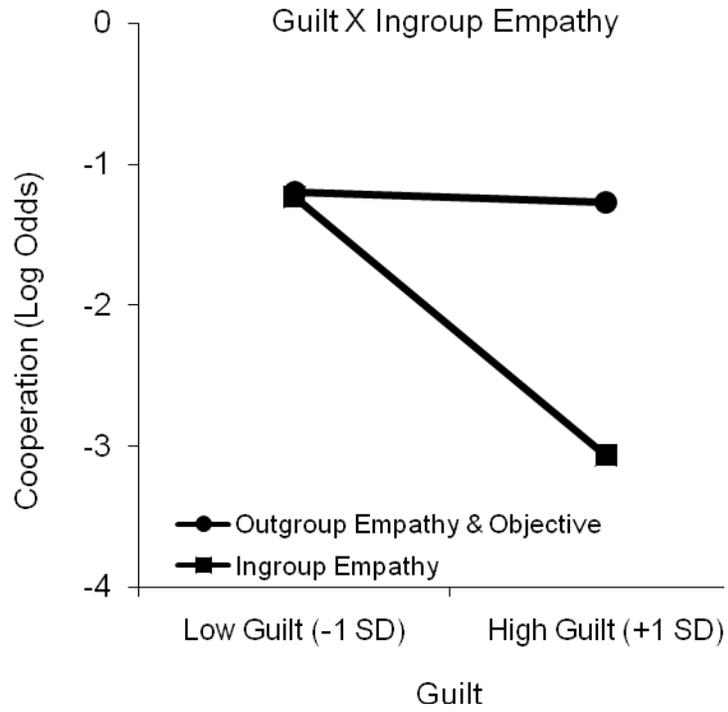


Figure 4. Logistic regression estimate of the effect of Gender X Empathic Concern X Outgroup Empathy on competition versus withdrawal. Higher scores represent more competition and less withdrawal. Estimates for men are shown in the top panel. Estimates for women are shown in the bottom panel.

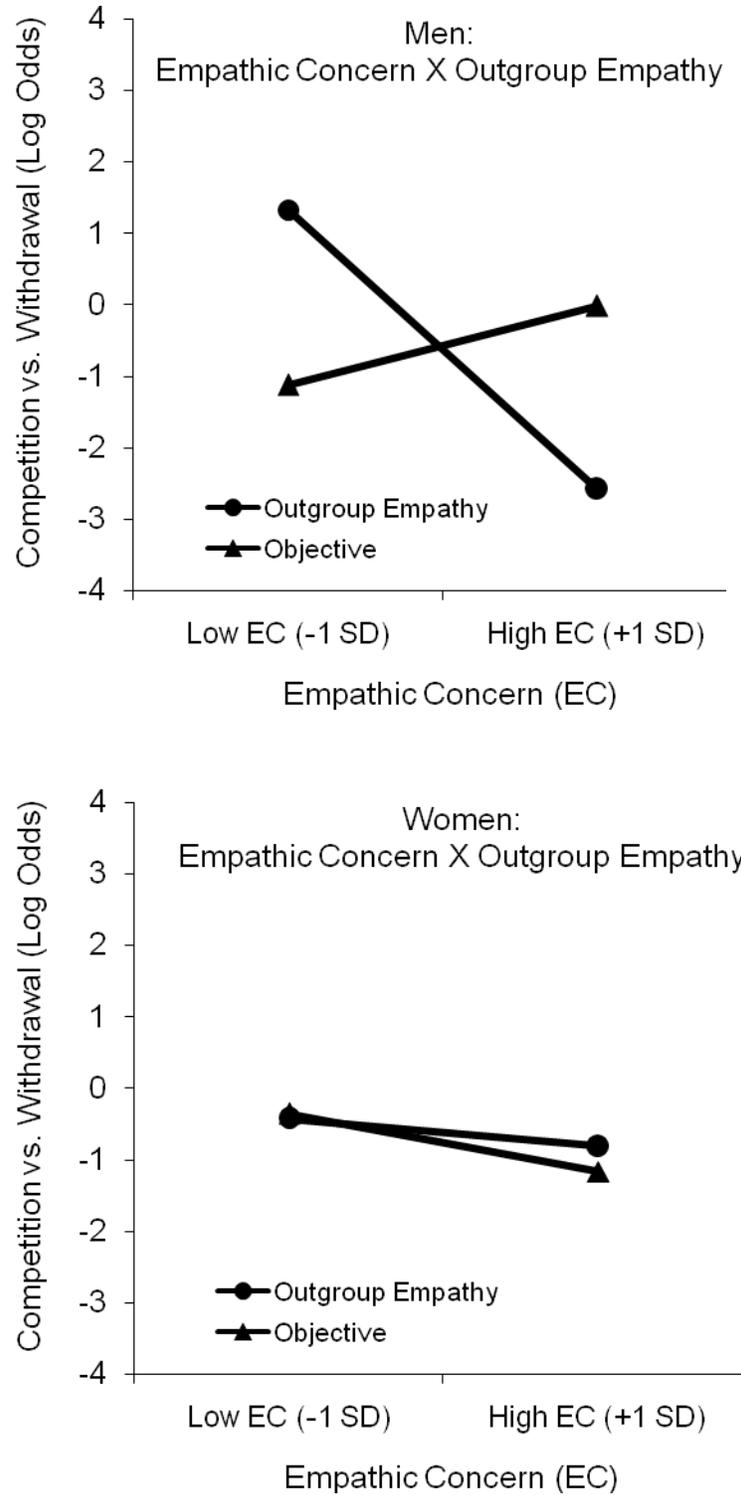
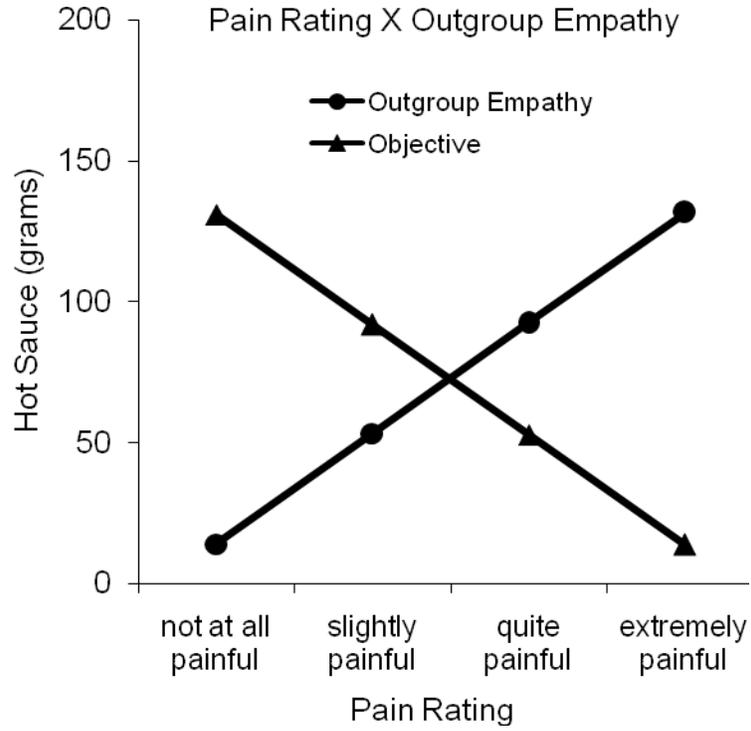


Figure 5. Linear regression estimate of the effect of Pain Rating X Outgroup Empathy on hot sauce allocation.



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