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When Increased Group Identification Leads to Outgroup Liking and Cooperation: The Role of Trust

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ABSTRACT. Two studies explored the influence of group identification and the functional relations between groups on outgroup liking. In a laboratory study, Study 1 ($N = 112$) found that outgroup liking was highest when group identification was high and relations between groups were cooperative, but outgroup liking was lowest when group identification was high and relations were competitive. In a field replication of Study 1, Study 2 ($N = 181$) similarly found more liking with high group identification and cooperative relations between groups. Additional analyses revealed that the Identification \times Relations interactions found in Studies 1 and 2 were mediated by outgroup trust. We discuss how trust is an important factor for predicting outgroup bias for both high and low group identification.

Keywords: in-group bias, intergroup perception, trust

“NATIONS CAN AND DO SUPPORT higher values than their own if there is a coincidence between the higher values and the impulse of survival.”

Niebuhr, 1939/1957, p. 79

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Early Experiments by Tajfel (1969) demonstrated that merely placing individuals into distinct groups was sufficient to produce favoritism for their own group and discrimination against other groups. Later research argued that identification with the ingroup magnified the amount of bias (e.g., Abrams & Hogg, 1988; Pettigrew et al., 1998). Research has found that increased group identification produced more negative outgroup evaluations (e.g., Voci, 2006), enhanced ingroup similarity evaluations (Kelly, 1988), and increased ingroup-favoring money allocations (e.g., Perreault & Bourhis, 1999). But not all research has found this effect. Some research failed to find any relationship between group identification and bias (Brewer & Campbell, 1976; Brown, Condor, Mathews, Wade, & Williams, 1986) or found a relationship only when positive resources rather than negative resources are being allocated (e.g., Mummendey et al., 1992). Brown and colleagues (Brown & Williams, 1984; Oaker & Brown, 1986), however, have found that in cooperative contexts, the more that group members identified with their group, the *more* they liked and demonstrated favoritism toward the outgroup (see also Jetten, Spears, & Manstead, 1996a).

Whereas past research has emphasized group members' perceived categorization with their group (e.g., S. Gaertner, Mann, Murrell, & Dovidio, 1989) or group members' self-esteem (e.g., Hogg & Sunderland, 1991) as critical to the link between bias and group identification, in the present research, we consider how group members' self-interest determines attitudes toward the outgroup. More specifically, using a framework outlined by the Behavioral Interaction Model (BIM; Rabbie, 1991), we explored how group members' self-interest alters how group identification affects the evaluations of both ingroup and outgroup members, and how such changed evaluations lead to subsequent outgroup bias or favoritism. We begin by discussing group members' motives in the intergroup context.

Motivations in the Intergroup Domain

Similar to individuals' motivation in interindividual interactions (e.g., Shafir & LeBoeuf, 2002; Vroom, 1964), individuals in the group context are motivated to facilitate their own self-interest (Diehl, 1989; L. Gaertner, Sedikides, & Graetz, 1999; Locksley, Ortiz, & Hepburn, 1980). This motivation is consistent with the motives posited by the Behavioral Interaction Model (BIM; Rabbie, 1991), which proposes that intergroup relations are dictated by the self-interest motivation of individual group members. Bias or favoritism toward other groups results from what group members believe is the best method to satisfy their own self-interest. According to BIM, whether individual group members express bias or favoritism toward an outgroup results from two evaluations: a) the *interdependence structure* between the ingroup and the outgroup (i.e., the cooperative or competitive relations between groups), and b) the perceived *psychological orientation* of group members. In the next section, we describe these two processes

and then discuss how these two evaluations are affected by group identification to produce more or less liking and bias with an outgroup.

Interdependence Structure

Groups are often dependent on other groups to satisfy their goals or interests. Positive interdependence are situations in which another group's actions act to enhance the outcomes of the ingroup, whereas negative interdependence refers to situations in which the actions of the outgroup act to worsen the ingroup's outcomes (Tajfel, 1978). The interdependence structure is a cue that group members evaluate to determine whether another group will facilitate or hinder the ingroup's interest.

When group members perceive an outgroup as operating to inhibit the ingroup's outcomes, group members may perceive competition (i.e., expressing bias) with the outgroup as a means to maximizing their own self-interest. Indeed, research indicates that a negative interdependence structure is related to more negative attitudes, negative stereotypes, and more competitive behavior toward outgroups (e.g., Beaton & Tougas, 2001).

Alternatively, when relations between groups are cooperative, working with the other group may be evaluated as an action that will best facilitate self-interests. There is a logical relationship between self-interest and favoring the outgroup: When group members evaluate cooperative behavior to be profitable, group members become more motivated to cooperate with an outgroup (e.g., Brewer, 2000; Pruitt & Kimmel, 1977). Rabbie and colleagues (1989, p. 187) predicted that "individuals will allocate more money to group members upon whom they feel most dependent for maximizing their own personal self-gain." Indeed, when group members' outcomes solely depend on the outgroup, they favor outgroup members (Rabbie, Schot, & Visser, 1989).

Outgroup trust. An evaluation of whether another group positively or negatively influences the ingroup's outcomes is consistent with traditional definitions of trust. Trust is often conceptualized as what we *expect* others to do. Deutsch (1960), for instance, defined trust as "belief that others will provide us what we desire rather than what we fear" (pp. 203); and Pruitt (1981) defined trust as the confidence that another is "cooperatively motivated" and possessed "benevolent intentions." As such, we discuss how ingroup members evaluate the expected motivations of outgroup members—whether a cooperative versus competitive interdependence structure operates—as *outgroup trust*.

A description of outgroup trust as the psychological process that underlies intergroup relations is not far from Sherif's (1966) description of what is required to enhance intergroup relations. Sherif (1966) posited that superordinate categories reduced intergroup conflict by leading to positive goal interdependence, which then led to an expectation that the outgroup would be "good" for the ingroup.

In this way, a cooperative intergroup structure leads to outgroup favoritism because the positive interdependent structure predicts beliefs that the other group facilitates the self-interests of individual ingroup members. When cooperative relations are not associated with outgroup trust, however, cooperation may not lead to outgroup favoritism. Take as an example the research of Deschamps and Brown (1983), who concluded that an interaction between two highly identified groups with a cooperative interdependent structure will not lead to outgroup favoritism. In their research, two highly identified groups first interacted on a competitive task, then immediately interacted on a cooperative task. They found that despite the cooperative dynamic, outgroup favoritism did not result. According to our approach, outgroup favoritism did not occur because the initial competitive context rendered ingroup members unable to believe that the outgroup would advance the interests of their group (i.e., there was no outgroup trust), resulting in a lack of positive relations between groups (see also Worchel, Wong, & Scheltema, 1989). Whereas this study has been cited frequently as evidence that even cooperation between two highly identified groups cannot lead to liking between groups (e.g., S. Gaertner, Mann, Dovidio, Murrell, & Pomare, 1990; Dovidio, S. Gaertner, & Validzic, 1998), we would regard it as a cooperative context without outgroup trust. In such cases, competition would always result even when the interdependent structure was cooperative because the preceding competitive relations eliminated any expectation of outgroup trust. This underlines the point that outgroup trust—more than a cooperative or competitive interdependence structure—is what is critical for harmony between groups.

Psychological Orientation of Group Members

The second critical aspect of BIM's approach to intergroup relations is what group members expect from their fellow group members. According to BIM, group members follow a norm of reciprocity and exchange favorable allocations with group members (Rabbie, 1991; Rabbie et al., 1989). Group members expect their group members to make ingroup-favoring allocations (Jetten, Spears, & Manstead, 1996b) and are expected to make ingroup-biased allocations themselves (Cohen, Montoya, & Insko, 2006; Hertel & Kerr, 2001).

Perceptions of reciprocation from group members differ as a function of the degree to which group members identify with their group. Increased group identification increases the expectation of ingroup-biased behavior from group members (e.g., Brann & Foddy, 1987). High identification increases group members' perceptions that their fellow group members are similarly motivated to adhere to the norms of the group (Fielding & Hogg, 2000; Terry, Hogg, & McKimmie, 2000) and achieve group-level goals (e.g., Jetten, Spears, & Manstead, 1997). These findings indicate that increased group identification leads to increased group-oriented behavior and norm adherence. In a cooperative context, the increased group identification leads to more cooperation with an outgroup; and

in a competitive context, increased group identification leads to more competition with an outgroup.

Motives of outgroup members. The perceived motives of the outgroup often reflect those of the ingroup (Rabbie, 1991). Ingroup members assume that outgroup members are motivated to maximize their own self-interest (Jetten et al., 1996a; Miller, 1999). In the absence of any cue as to how the outgroup will act, this self-interest motivation is usually perceived as competitive (e.g., Schopler, Insko, Drigotas, & Graetz, 1993). However, in situations in which the outgroup's outcomes from cooperation exceed those from competition, outgroup members are expected to follow their own self-interest and cooperate (Pruitt & Kimmel, 1977). In this way, the perceived self-interests of outgroup members differs as a function of the cooperative or competitive contexts: In cooperative contexts, cooperation is perceived as in the outgroup's interest, but in competitive contexts, competition is seen as in the outgroup's interests.

However, further complicating this self-interest perception of outgroup members is the influence of group member's identification with the ingroup. High ingroup identification changes how the motives of outgroup members are perceived: Outgroup members who are seen as high in group identification are seen as highly motivated to maximize their own self-interests. Thus, a perceived cooperative outgroup motivation should only be heightened with perceived strong identification with the outgroup. When there is competition, however, the increased outgroup identification increases the perception that the outgroup will compete because competition is what would be perceived as what would maximize their outcomes (Kinias, 2008). Simply put, more perceived outgroup identification in a competitive context should lead to less outgroup trust. Alternatively, increased outgroup identification in a cooperative context leads to more outgroup trust because the outgroup acting cooperatively would be thought to maximize the interests of outgroup members.

Purpose of the Studies

The purpose of this research was to explore the role of group members' self-interest motives in the regulation of the relationship between group identification, interdependence structure between groups, and outgroup liking. We conducted a pair of studies that manipulated group identification and the interdependence structure between groups (cooperative, competitive), and measured the amount of liking between groups (Study 1 and 2), and the amount of money allocated to the outgroup (Study 2).

For both Study 1 and 2, we hypothesized a Group Identification \times Relations interaction, such that the most liking for the outgroup (or the amount of money allocated to the outgroup) occurs when group identification was high and relations

were positive. According to BIM, the positive interdependence structure, in combination with a belief that highly identified outgroup members will act consistently with their own self-interest, is hypothesized to result in increased outgroup liking. Alternatively, a negative interdependence structure with increased group identification should result in less outgroup liking. Importantly, we expected this interaction to be mediated by outgroup trust, such that participants would evaluate highly identified outgroups in the cooperative condition as the most willing to facilitate the interests of the ingroup (i.e., high in high outgroup trust); but highly identified groups in the competitive situation would be evaluated as the least willing (i.e., low in low outgroup trust).

Study 1

Study 1 explored outgroup liking when relations between groups were either cooperative or competitive; and when group identification was either high or low. To manipulate cooperation versus competition between groups, we followed the suggestions of Pruitt and Kimmel (1977), who outlined the situational factors sufficient to produce cooperation and competition. Specifically, they proposed that cooperative interactions develop when there is (1) perceived positive dependence with the other, (2) belief that the other will not be deceptive, and (3) a shared belief that cooperation is necessary for mutual cooperation. Alternatively, the only condition necessary for mutual competition is perceived negative interdependence (see Kelley, Thibaut, Radloff, & Mundy, 1962).

In Study 1, members of minimal groups completed a thought task either together as a group (high identification) or separately (low identification). Next, we told each group that they would interact with another group, with the nature of that interaction being either cooperative or competitive. After the interaction, we assessed participants' liking for outgroup members and their trust in the outgroup.

Hypotheses

We hypothesized a Group Identification \times Relations interaction, such that high group identification and cooperation should produce the greatest amount of outgroup liking, and high group identification and competition should produce the least amount of outgroup liking. Because we expect outgroup members to act according to their own self-interest—particularly those who strongly identify with the outgroup—the positive interdependence structure will result in increased outgroup liking. In this way, the degree of outgroup liking should be mediated by outgroup trust, such that trust should be lowest during times of competition and high group identification, whereas outgroup trust should be highest during times of cooperation and high group identification.

Method

Participants

One hundred twelve individuals, 64 men and 48 women, all students at a large private university in New England, participated in this study. Participants were paid \$10 for their participation, as well as an additional \$5 they ostensibly would have earned in the experiment.

Procedure

Participants reported to the experimental session in groups of six persons. Care was taken to avoid verbal and visual contact between participants before the experiment. Participants drew index cards labeled "A" or "B" to determine their group assignment. Participants who drew an "A" were asked to sit on one side of a large room, whereas participants who drew a "B" were asked to sit on the other side. The experimenter informed the participants that the study was interested in how people solve problems.

For the first part of the study, participants completed the "Lost on the Moon" task (Hall & Watson, 1970). This task allowed for the introduction of the first independent variable. In this widely used technique to manipulate group identification (e.g., Carpenter & Radhakrishnan, 2002; Sundstrom, Busby, & Bobrow, 1997), participants ranked, in order of priority, a list of 15 items necessary for survival on the moon. Participants in the high identification condition completed this task with members of their group, whereas participants in the low identification condition completed the task individually.

After completing the first task, groups were told that they would complete a series of anagram tasks that would constitute the second part of the study. Participants were told that each anagram task consisted of 12 anagrams, half of which were to be solved as a group; the other half were to be completed separately by the individual group members. Groups were told that there were six anagram tasks and that the groups would alternate completing the anagram tasks. Further, they were instructed that an anagram task was only considered correct if 10 of the 12 (83%) anagrams were solved correctly. As a result of their performance on the anagram task, participants had the ability to earn \$5.

In the cooperative condition, participants were told that in order to earn the \$5, all six anagrams tasks had to be completed successfully: Each group would need to complete successfully their three anagram tasks in order for both groups to receive money. In the competitive condition, participants were told that only the group that completed more anagram tasks successfully than the other group would receive the additional \$5 payment (additional anagram tasks would be completed in the case of a tie).

It is important to note that the instructions made it clear to participants that in the cooperative condition, the only way for their group to succeed was to work with the other group to solve all six anagram tasks. The instructions in the competitive condition were similarly as clear: The only way for their group to succeed was at the expense of the other group. Next, each group learned that the other group had been randomly assigned to complete the first anagram task. In both the cooperative and competitive conditions, groups learned that the other group had completed successfully the first anagram task.

Before completing their anagram task, participants were told that we were interested in their “current thoughts.” Participants completed a questionnaire packet that included a measure of outgroup liking (see *Measures*), outgroup trust, as well as the manipulation check questions (identification with the ingroup, cohesiveness of the outgroup, and their perception of the interdependence structure between groups). After completing the questionnaire, participants were told that no additional anagram tasks would be completed and that the experiment was over. Participants were compensated for their time and then debriefed.

Measures

Manipulation check questions. The positivity-negativity of the relations between groups was measured using a scale developed by S. Gaertner and colleagues (1989). On a scale of 1 (*not at all*) to 9 (*very much*), participants were asked to indicate the degree to which the interaction was characterized as cooperative, friendly, quarrelsome, close, pleasant, trusting, frustrating, successful, honest, and useless. A composite of the 11 items was reliable, $\alpha = .87$. To assess the participant’s identification with the group, we used a group identification measure designed by Silver and Brewer (2010). The questionnaire consisted of eight 7-point items, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale was reliable, $\alpha = .89$. Sample items include “I am willing to rally support from others on behalf of my group’s interests,” and “I am willing to help when my group needs me.” To assess perceptions of the cohesiveness of the outgroup, participants were presented with six diagrams, each of which included one circle in the center that was surrounded by other circles that represented other group members. The circles were progressively closer to the self circle in each successive diagram, and participants were asked to pick which of the diagrams best depicted their perception of the other group (L. Gaertner & Schopler, 1998; Insko & Schopler, 1987).

Outgroup trust. Three items, each on a nine-point scale, assessed perceptions of the outgroup’s willingness to positively or negatively affect the ingroup’s outcomes. Sample items include “Members of the other group cannot be trusted” and “If members of the other group were placed in a situation in which they could

gain at my expense, I believe they would do so.” The three items were averaged to form an index of outgroup trust ($\alpha = .95$).

Outgroup liking. The degree to which participants liked members of the other group was assessed using the affective subscale of the Allophilia scale developed by Pittinsky, Rosenthal, and Montoya (2011). Sample items include “I like members of the other group” and “I have positive feelings for members of the other group.” Participants recorded their responses on each of the four items on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale was reliable, $\alpha = .79$.

Results

First, with respect to the participant’s gender, there were no significant gender differences for any of the dependent variables. Moreover, there were no significant interactive effects of gender and any other independent variable; as a result, we do not discuss gender further.

Because the responses of the individuals within each group were not independent (i.e., individuals were affected by the interaction with fellow group members), the group was treated as the unit of analysis. Each group consisted of three participants. The total N was 96, divided by 3, which left us with 32 groups: 14 in the cooperative condition, 18 in the competitive condition.

Manipulation Checks

Group identification. The degree to which participants identified with their group was entered into a 2 (identification: high, low) \times 2 (relations: cooperation, competition) ANOVA. There was a main effect for identification, $F(1, 25) = 4.76$, $p < .05$, partial $\eta^2 = .15$, such that participants experienced more identification in the high identification condition than in the low identification condition. Neither the main effect for relations, $F(1, 25) = 2.47$, $p = .12$, partial $\eta^2 = .08$, nor the Relations \times Identification interaction, $F(1, 25) = 0.28$, $p = .60$, partial $\eta^2 = .01$, was significant.

To test the assumption that increased ingroup identification led to perceptions of increased outgroup identification, we entered perceived outgroup cohesiveness into a Relations \times Identifications ANOVA. The Relations \times Identifications was not significant, $F(1, 29) = 0.14$, $p = .75$, partial $\eta^2 = .00$. Importantly, the main effect for identification was significant, $F(1, 29) = 5.43$, $p < .05$, partial $\eta^2 = .19$, indicating that participants in the high ingroup identification condition evaluated outgroup as more cohesive than did those in the low identification condition.

Positivity-negativity. The positivity-negativity of the intergroup relations was also entered into a 2 (identification: high, low) \times 2 (relations: cooperation, competition) ANOVA. There was a main effect for relations, $F(1, 26) = 26.10, p < .05$, partial $\eta^2 = .50$, such that participants in the cooperation condition evaluated the intergroup interaction as more cooperative ($M = 5.32, SD = 0.69$) than did participants in the competitive condition ($M = 3.40, SD = 1.15$). Neither the main effect for identification, $F(1, 25) = 1.67, p = .20$, partial $\eta^2 = .06$, nor the Relations \times Identification interaction, $F(1, 25) = 0.21, p = .64$, partial $\eta^2 = .00$, was significant.

Outgroup Liking

Means and standard deviations for outgroup liking and trust are presented in Table 1. We entered outgroup liking into a 2 (relations: cooperation, competition) \times 2 (identification: high, low) ANOVA. The main effect for relations was significant, $F(1, 28) = 35.36, p < .05$, partial $\eta^2 = .58$, indicating that group members liked the outgroup more in the cooperative condition than in the competitive condition. The main effect for identification was not significant, $F(1, 28) = 0.92, p = .34$, partial $\eta^2 = .05$. The Relations \times Identification interaction was marginal, $F(1, 28) = 3.15, p = .08$, partial $\eta^2 = .11$. However, of particular interest was the difference between the high and low group identification cells in the cooperative condition. A simple contrast revealed that there was more outgroup liking in the cooperation-high identification condition ($M = 6.61, SD = 0.84$) than in the cooperation-low identification condition ($M = 5.44, SD = 0.90$), $t(31) = 2.41, p < .05, d = 1.34$. A second simple contrast revealed that outgroup liking was not

TABLE 1. Outgroup Liking and Trust as a Function of Group Identification and Relations, Study 1

	Identification with the group			
	High identification		Low identification	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Cooperative				
Trust	7.12	0.87	6.52	0.78
Outgroup liking	6.61	0.84	5.44	0.90
Competitive				
Trust	2.18	1.01	2.91	0.94
Outgroup liking	3.32	1.05	3.66	1.50

Note. $N = 30$.

significantly lower in the competition-high identification condition ($M = 3.32$, $SD = 1.05$) than in the competition-low identification condition ($M = 3.66$, $SD = 1.50$), $t(31) = 0.99$, $p = .32$, $d = .26$.¹

Mediated Moderation of Outgroup Liking

The potential mediation of outgroup liking by trust was assessed using MacKinnon, Lockwood, Hoffman, West, and Sheets' (2002) modification of Baron and Kenny's (1986) procedure. According to MacKinnon and colleagues, 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.

The means for trust are presented in Table 1. We entered trust into a Relations \times Identification ANOVA, and found that the critical Relations \times Identification interaction was significant, $F(1, 28) = 2.99$, $p < .05$, partial $\eta^2 = .10$. Trust was greatest in the cooperative-high group identification condition and lowest in the competitive-high group identification condition. There was a significant relationship between outgroup liking and trust, $r = .57$, $p < .05$.

Using MacKinnon and colleagues' (2002) empirically derived critical values for the assessment of indirect effects (critical values for z' of .05 and .01 are 0.97 and 1.1 respectively), the indirect effect of the Relations \times Identifications interaction on outgroup liking via trust was significant, $z' = 1.56$, $p < .05$. The interactive effect of relations and identification on outgroup liking was no longer significant when the assessment of trust was included in the model, $B = .47$, $SE = .77$, $p = .54$. These results are consistent with total mediation by trust of the Relations \times Identification interaction.

Discussion

We found that group identification moderated the influence that intergroup relations had on outgroup evaluations: High identification led to less outgroup liking in the competitive condition, but high identification led to *more* outgroup liking in the cooperative condition. Moreover, we found that trust mediated the change in outgroup liking in the cooperative condition: Trust was at its highest in the cooperation-high identification condition but lower in the cooperation-low group identification condition. The high ratings of trust in the cooperative conditions relative to the competitive conditions highlights trust's ability to influence outgroup liking. These findings are consistent with BIM and the role of trust in intergroup relations. According to BIM, the positive functional relations in combination with an increased perception that the outgroup will act benevolently, resulted in increased outgroup liking.

Study 2

The main goals of Study 2 were to a) replicate the findings of Study 1 in a field study, and b) include a second outgroup evaluation measure (a money allocation task). The theoretical rationale for Study 2 was identical to that of Study 1. We posit that the interdependence structure will moderate the perceptions of the outgroup intentions: When the functional relations are positive, increased perceived outgroup identification should be perceived as good for the group (which increases trust in the outgroup), but when functional relations are negative, increased perceived outgroup identification should be perceived as bad for the ingroup (which reduces trust in the outgroup). Study 2 measured outgroup trust as a mediator, and amount of liking and money allocation as dependent measures.

To conduct Study 2, we investigated the role of group identification and interdependence structure in the context of intercollegiate relations. We selected a nationally prestigious university in the Southeastern United States that, depending on which aspect of their relationship was made salient, either shared a cooperative or competitive relationship with another nationally prestigious university. In one respect, the universities have a well-publicized academic, business, philanthropic, and entrepreneurial partnership that has spawned joint academic programs (e.g., law, business, journalism) and mutually lucrative business ventures. Alternatively, the universities also share a competitive spirit that has nurtured debate over which school is better academically (both schools rank nationally among the Top 30 universities; U.S. News and World Report, 2010), and athletically (both athletic programs rank nationally among the Top 15 universities; National Association of Collegiate Directors of Athletics, 2010)—a debate renewed with every competition on the football field, soccer pitch, and basketball court.

Specifically, as with Study 1, we hypothesized that reduced outgroup liking should result when group identification is high and a cooperative relation is salient. As with Study 1, because we expect outgroup members to act according to their own self-interest—particularly those who strongly identify with the outgroup—the positive relations would result in more outgroup liking. As with Study 1, we hypothesize that outgroup trust should mediate the interaction, such that outgroup trust should be lowest during times of competition and high identification; but highest during cooperation.

Method

Participants

Participants were 181 students at a large Southeastern public university between the ages of 17 and 24 years ($M = 19.40$). Participants were 94 women,

70 men, and 17 students who did not report their gender. Participants were recruited through advertisements placed on a popular collegiate on-line community. Participants were paid \$10 for their participation.

Procedure

Participants completed the survey on-line. Participants were instructed to complete the questionnaire in private and were assured that their responses would remain completely anonymous. The questionnaires of interest for this study were included among other questionnaires unrelated to the current project.

After completing the first portion of the questionnaire that contained a group identification questionnaire (see *Measures*), half of the participants were asked to think about a cooperative relationship with the rival school; the other half were asked to think about a competitive relationship with the rival. In the cooperative condition, participants were instructed to think and then write a short description regarding how the average student treats students from the rival school during a joint school event in which the students have a cooperative orientation (e.g., exchange program, discotheque nights, joint classes). In the competitive condition, participants were instructed to think and write about how the average student treats students from the rival school during an intercollegiate event (either scholastic or athletic) in which the students have a competitive orientation (i.e., knowledge bowl, scholastic competitions, athletic competitions). For both conditions, participants were specifically instructed to describe how fellow students treated (or would like to have treated) students from the rival school in attendance.

As another index of outgroup bias, participants also completed an allocation task (e.g., Garcia, Tor, Bazerman, & Miller, 2005; Levy, West, Ramirez, & Karafantis, 2006). Participants were told that a local philanthropic organization had donated \$100 million dollars to the Intercollegiate Collaboration to further fund development of their scholastic partnership. Participants were asked to indicate the percent of money that should be given to their university, and what percent of the money should be given to the rival university. After selecting an allocation choice, participants completed questionnaires that assessed their liking for the outgroup and outgroup trust.

Measures

Group identification. To assess the participant's identification with their university, we used the affective subscale of the group identification inventory designed by Henry, Arrow, and Carini (1999). The affective dimension evaluates feelings of attachment toward group members. The questionnaire consisted of four 7-point items, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Outgroup liking. As with Study 1, the degree to which participants liked members of the outgroup was assessed using the affective subscale of the Allophilia scale. The measure was reliable, $\alpha = .90$.

Outgroup trust. As with Study 1, three items, each on a 9-point scale, assessed perceptions of the outgroup's perceived trustworthiness. The three items were averaged to form an index of outgroup trust ($\alpha = .79$).

Results

As with Study 1, there were no significant gender differences for any of the dependent variables. Moreover, there were no significant interactive effects of gender and any other independent variable; as a result, we do not discuss gender further.

Outgroup Evaluation

Allocation. Inspection of the mean allocations given to the ingroup revealed that out of \$100 million, participants high in group identification in the cooperative condition allocated an average of \$51.71 million ($SD = 11.61$) to the ingroup, whereas participants low in group identification allocated an average of \$55.43 million ($SD = 19.76$) to the ingroup. In the competitive condition, participants high in group identification allocated \$58.43 million ($SD = 13.91$) to the ingroup, whereas participants low in group identification allocated \$55.09 million ($SD = 13.31$) to the ingroup.

Because of the leptokurtotic nature of participants' giving to the two schools (many participants gave an equal amount to both schools, \$50 million), we categorized participant's allocation into three categories: allocated more money to the outgroup (outgroup favoritism), allocated equally to both groups, and allocated more money to the ingroup (ingroup favoritism). We entered the trichotomous variable into a 2 (identification) \times 2 (relation) logistic regression with allocation (ingroup favoritism, equal allocation, outgroup favoritism) as the dependent variable, and group identification as a continuous predictor and relations as a dichotomous predictor. The main effect for identification was significant, $b = 1.93$, $se = .70$, $p < .05$, but the main effect for relations was not, $b = -.13$, $se = .29$, $p = .64$.

Importantly, there was a significant Relation \times Identification interaction, $b = -1.86$, $se = .75$, $p < .05$. To explore the interaction, we inspected separately the cooperative and competitive conditions. In the cooperative condition, high identifiers, compared with low identifiers, were more likely to favor the outgroup than to give equally, $b = -0.85$, $se = .36$, $p < .05$. In addition, high identifiers

TABLE 2. Outgroup Liking and Trust as a Function of Group Identification and Relations, Study 2

	Identification with the group			
	High identification		Low identification	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Cooperative				
Outgroup liking	4.28	1.14	3.72	1.16
Trust	5.84	1.20	4.29	1.77
Competitive				
Outgroup liking	3.67	1.18	3.57	1.14
Trust	4.54	2.13	4.93	1.59

Note. $N = 78$. Means for high and low group identification are based on a median split.

were more likely to give equally than to give to the ingroup, $b = 1.12$, $se = .38$, $p < .05$. Within the competitive condition, no simple contrasts were significant.

Outgroup liking. Table 2 displays the means for outgroup liking for relation and group identification. We entered intergroup liking into a regression with relations (dichotomous) and identification (continuous) as predictors. Whereas neither the main effect for relations, $F(1, 74) = 0.08$, $p = .76$, partial $\eta^2 = .00$, nor identification, $F(1, 74) = 0.75$, $p = .38$, partial $\eta^2 = .00$, was significant, the critical Relations \times Identification interaction was significant, $F(1, 74) = 4.06$, $p < .05$, partial $\eta^2 = .05$.

We explored the Relation \times Identification interaction by examining the simple slopes for the cooperation and competition conditions. As identification increased, there was a descriptive tendency for participants in the competitive condition to reduce their liking for the outgroup, $F(1, 73) = 0.48$, $p = .48$, partial $\eta^2 = .00$; whereas participants in the cooperative condition increased their liking for the outgroup, $F(1, 73) = 3.96$, $p = .05$, partial $\eta^2 = .05$.

Mediated Moderation

Outgroup liking. We entered trust into a Relations \times Identification ANOVA with identification treated as a continuous variable. The critical Relations \times Identification interaction was significant, $F(1, 76) = 19.73$, $p < .05$, partial $\eta^2 = .21$, indicating that trust was greatest in the cooperative-high identification condition.

There was a significant relationship between outgroup liking and trust, $r = .62, p < .05$. To test the indirect effect of trust, with respect to a), the Relations \times Identification interaction predicts significantly outgroup liking. With respect to b), as mentioned previously, trust predicted outgroup liking significantly. With respect to c), trust produced a significant indirect effect on the Relations \times Identification interaction, $z' = 2.59, p < .05$. The direct effect of the Relations \times Identification interaction on outgroup liking fell to nonsignificance, $b = .11, t = 0.66, p = .51$. These results are consistent with total mediation by trust of the moderating effect of relations on group identification.

Discussion

As with Study 1, we found a significant Relation \times Identification interaction for outgroup liking, such that the amount allocated to the outgroup increased for those who identified strongly with their group and for whom a cooperative intergroup relation was made salient. This basic pattern was observed not only for the allocation amount but also for outgroup liking. When outgroup trust was tested as a mediator of the Relation \times Identification interaction for liking, trust produced a significant indirect effect on outgroup liking.

It is interesting to note that although effects were present for outgroup liking and allocation in Study 1 and Study 2, there were differences in the pattern of results. For instance, whereas there was a significant simple effect for competition in Study 1, the same effect was not present in Study 2. Such differences were likely due to a norm of fairness (e.g., Molm, Quist, & Wiseley, 1994) made salient by the cooperation/competition manipulation used in Study 2. Despite such differences, the similar trend of the overall results indicates that the relationship between cooperation/competition and ingroup identification holds in different contexts.

This pattern of results is consistent not only with BIM but also with value-expectancy models (e.g., Pruitt & Kimmel, 1977), such that we found that group members selected choices that promised to attain the most profitable outcomes. In an effort to maximize their individual (and collective outcomes), group members experienced liking and allocated more to the outgroup when cooperation was more in line with their self-interest than competition.

General Discussion

The purpose of the current research was to contribute to the understanding of the processes that regulate the expression of outgroup liking as a function of group identification and interdependence structure. The results provided support for the importance of outgroup trust in the expression of outgroup liking: We found that a tendency for increased ingroup identification in the competitive condition to lead

to less liking for another group, but that increased identification in the cooperation condition led to more liking for the outgroup. Importantly, we found that these relations were mediated by outgroup trust.

This point highlights an important issue in intergroup relations: Our finding that trust is important for positive intergroup relations complements research that cites a lack of trust as the primary obstacle to positive intergroup relations. Groups, compared with individuals, are more likely to be seen as untrustworthy (Kramer, 2004; Wildschut, Insko, & Pinter, 2004), which then fuels intergroup conflict by generating fears of deception and manipulation. In the context of the prisoner's dilemma game, for example, it is rational for a group to act competitively if they believe that the other group will deceive them in order to exploit them (L. Gaertner & Insko, 2000).

In this research, we went to great lengths to develop and use methods that ensured cooperation with outgroup trust. The methods used to manipulate cooperation in Study 1 and 2 were designed to increase trust and decrease concerns of exploitation or deception. In Study 1, for example, each group received feedback from the other group about its ability to help the ingroup's interests. This affirmative feedback and the expectation of future contact reduced the fear of exploitation and encouraged future cooperation (see Insko et al., 2001; Pruitt & Kimmel, 1977).

Trust Information From Categorization

Social Identity Theory (Tajfel & Turner, 1979; Turner, 1982) argues that individuals' social identities are derived primarily from their membership in groups. In order to maintain and enhance individual self-esteem, group members are generally motivated to maintain a positive social identity. Tajfel and Turner (1986) propose that one important technique for maintaining a positive social identity is to favorably compare one's group to relevant outgroups (i.e., positive distinctiveness). Further, intergroup relations operate primarily by evaluating the cognitive representations of ingroup and outgroup members (e.g., S. Gaertner & Dovidio, 2000). Only when group members recategorize the other group as part of the ingroup can positive "intergroup" relations occur (e.g., Hewstone, Bond, & Wan, 1983).

The critical Relation by Identification interaction highlights the difference in the categorization-based approach from the BIM perspective. Specifically, in the cooperative conditions, categorization would be a poor predictor of intergroup liking when ingroup identification was high: Increasing the distinctiveness of the groups did not hinder intergroup relations but rather led to more outgroup liking. In the positive relations condition, high group identifiers experienced more trust, and as predicted, experienced more outgroup liking. Given the importance of categorical information to intergroup relations, how could these findings be reconciled with a categorization approach? Although not addressed directly by our data, our

results may be explained by the proposition that both trust and categorization are subsumed under a general drive to understand one's relationship with others. In this case, trust and categorization operate concurrently to inform the perceiver of what actions to take—who can group members trust, with whom can group members have an interdependent relationship. Group members attempt to make the best and most informed decisions possible based on information available to them. In minimal contexts, for example, the only available information to group members is the categorical information of group membership; there is no information on which to base an evaluation of trust (beyond group membership). Based on mere category information, group members tend to perceive outgroup members as untrustworthy and competitively oriented (e.g., Pemberton, Insko, & Schopler, 1996). However, as intergroup relations develop, more information to evaluate the trust of the outgroup becomes available, which makes it possible for trust to supersede categorization as the driving force behind intergroup evaluations.

In this light, future research can specifically explore the role of outgroup trust relative to categorization. Such research could orthogonally manipulate trust, categorization, and strength of group identification to directly test such propositions. Future research may also specifically test these relationships in both laboratory and field studies. It is noteworthy that the extensive evidence supporting the importance of categorization in intergroup evaluations comes primarily from laboratory studies that employ minimal group designs, whereas support for BIM comes from both laboratory and field studies (Park & Judd, 2005). A second area for future research relates to the relatively weak increase in outgroup liking amid intense ingroup identification. Continued examination of the conditions that improve outgroup relations when ingroup identification is strong can help those interested in improving intergroup relations understand how strong ingroup identification can occur with benefits, rather than costs, to the quality of intergroup relations (Pittinsky, 2010).

Conclusion

The relationship between Great Britain and the United States during World War II provides an example of the relationship between identification and liking in a cooperative context. British leaders, both royal and elected, whose success was inextricably linked to the success of their country, experienced tremendous affection for the United States (Brendon, 1984; Churchill, 1950). British civilians, however, whose livelihoods were a step removed from the seats of power, were less enthusiastic and experienced less affection for the United States. For instance, opinion polls showed that six months after the United States joined the war, approximately 25% of the British public said that they did not have a favorable opinion of the United States, and most felt that they was not doing enough to help in the war effort (Gallup, 1942, 1943). Consistent with this example, we found that increased identification in a cooperative context led to reduced, rather

than increased, outgroup bias. Further, we found that this reduction in bias was best explained by changes in trust.

NOTES

1. From the Social Identity Theory perspective, positive intergroup relations are facilitated by transforming group members' cognitive representations of outgroup members as ingroup members (S. Gaertner & Dovidio, 2000). To assess whether recategorization was responsible for changes in liking, we included four measures of categorization. One question assessed the participant's cognitive representation of the two groups involved in the experiment. Participants were asked on a trichotomous forced-choice question to indicate if they perceived the two groups as: two separate groups, one group, or as separate individuals (S. Gaertner et al., 1989). Participants also rated the extent to which the members of the two groups were one group ("To what extent does it feel like the members of your group and members of the other group are members of one group?"), two groups ("To what extent does it feel like the members of your group and the members of the other group are members of two separate groups?"), and separate individuals ("To what extent does it feel like the members of your group and members of the other group are separate individuals?"). The means reveal that categorization was influenced by intergroup relations, but not by group identification. Separate individuals and one group did not produced significant interactions, $F(1, 74) = 2.50, p = .11$, partial $\eta^2 = .03$, and $F(1, 74) = 2.48, p = .12$, partial $\eta^2 = .03$, for separate individuals and one group, respectively. When placed in a simultaneous meditational analysis with trust (Preacher & Hayes, 2008), none of the categorization measures mediated the link, $z = -0.62, p = .56$; $z = -0.15, p = .73$; $z = -0.35, p = .63$; for one group, two groups, and separate individuals, respectively; while trust continued to be significant, $z = 2.59, p < .05$.

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