INFLUENCING INTERGROUP BEHAVIOR WITH CULTURAL MINDSETS: 
THE ROLE OF DISTRUST, GREED, AND THE NORM OF GROUP INTEREST

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INFLUENCING INTERGROUP BEHAVIOR WITH CULTURAL MINDSETS: THE ROLE OF DISTRUST, GREED, AND THE NORM OF GROUP INTEREST

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ABSTRACT

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Various motives, including distrust, greed, and the norm of group interest, have a stronger impact on behavior in an intergroup interaction, compared to an interindividual interaction. This study investigated the strength of those motives within intergroup interactions with either an individualistic or collectivistic mindset. 127 participants reported the strength of their adherence to the norm of group interest and completed a cultural mindset manipulation to focus on either individualistic or collectivistic goals. Participants then took part in a mixed-motive task within a competitive or withdraw group norm context. Results revealed that participants were less likely to match the competitive, compared to the withdraw, group norm. Participants who strongly adhered to the norm of group interest matched the competitive group norm. Participants with either mindset reported being more strongly influenced by greed in the intergroup interaction. The results partially supported theories regarding flexible cultural mindsets and the norm of group interest and demonstrated that a 'true partner' effect may influence choice in an intergroup interaction.
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Does the influence of motivational factors change with different cultural mindsets during intergroup interactions? Researchers have investigated the varying influence of the motivations within groups and why intergroup behavior is different than interindividual behavior. The phenomena in which intergroup interactions involve fewer cooperative choices than interindividual interactions is labeled the discontinuity effect (Insko et al., 1988). There has been speculation as to whether the discontinuity effect would manifest within collectivistic cultures (Takemura & Yuki, 2007; Yuki, 2003) since most research investigating intergroup interactions has been conducted within individualistic cultures (Wildschut, Pinter, Vevea, Insko, & Schopler, 2003). There is no evidence, however, that those from individualistic and collectivistic cultures differ in the magnitude of the discontinuity effect (Takemura & Yuki, 2007). The discontinuity effect, however, may be driven by different motivations within each culture because individualistic and collectivistic cultures have different values (Osyerman, Koon, & Kemmelmeier, 2002; Yamagishi, 1988; Yuki, 2003). This study explored the contributing influences of three proposed causes of the discontinuity effect (self-interest, distrust, and the norm of group interest) on group members with either an individualistic or collectivistic mindset.
The Discontinuity Effect

There are several hypotheses regarding the motivation that drives the discontinuity effect (Insko et al., 1988), namely: the social support of self-interest hypothesis, the identifiability hypothesis, schema-based distrust hypothesis, and the norm of group interest. Although these hypotheses represent distinct motivations that lead to the discontinuity effect, the discontinuity effect is not influenced by one motivation alone (Insko, Schopler, Hoyle, Dardis, & Graetz, 1990). In the following section, each hypothesis is defined and its contribution to less cooperation between groups is explained.

The social support of self-interest hypothesis. The social support for self-interest hypothesis indicates that there is less cooperative behavior between groups because group members provide social support for the satisfaction of immediate self-interest (Schopler et al., 1993). Social support occurs when group members endorse another group member's behavior to encourage that behavior. Self-interest is defined as either maximizing absolute or relative outcomes in an interaction. Maximizing absolute outcomes means group members are motivated to obtain the highest outcome for their group (this motivation is called \textit{max own}; Bornstein et al., 1983), whereas maximizing relative outcomes means that group members are motivated to obtain the highest outcome for their group relative to the outgroup's outcome (this motivation is called \textit{max rel}; Bornstein et al., 1983). Ingroup members encourage self-interested, or greedy, behavior in an intergroup context by creating a support system for the group member. Such a support system is unavailable to an individual in an interindividual interaction (Insko, Schopler, Hoyle, Dardis, & Graetz, 1990). Acting in a self-interested manner is more
dependent on explicit social support, in comparison other motives needing social support, because the self-interested behavior infringes on equity principles (Schopler et al., 1993). For example, an indication of cooperation from the outgroup begets reciprocity and therefore cooperation. Indication that the outgroup will cooperate, however, encourages self-interest within the group by reducing the ingroup's feeling of distrust and encouraging the group members to capitalize on maximizing the ingroup's outcome (Schopler et al., 1993). To not reciprocate the outgroup's cooperation needs social support from the ingroup (Schopler et al., 1993). Groups are less cooperative in intergroup interactions than individuals are in interindividual interactions, according to this hypothesis, because group members provide support for self-interest to motivate a group member during an intergroup interaction (Insko et al., 1990).

**The identifiability hypothesis.** The identifiability hypothesis indicates that groups are less cooperative during intergroup interactions than individuals are during interindividual interactions because the outgroup cannot assign responsibility for the behavior to any one group member (Schopler et al., 1995). Within interindividual interactions it is easier to assign sole responsibility for a decision since one person is making that decision. Being a member of a group affords group members a sense of concealment from the outgroup. The protection afforded by ambiguity allows group members to make decisions based on self-interest without personal repercussions (Schopler et al., 1995; Yamagishi & Mifune, 2008). When ambiguity is removed and the individual group members are accountable to outgroup members for their decision, group members were less competitive in comparison to the competitiveness of not identified group members (Schopler et al., 1995). Therefore, intergroup interactions are less
cooperative than interindividual interactions, according to this hypothesis, because the concealment resulting from group membership allows for competitive behavior.

**Schema-based distrust hypothesis.** The schema-based distrust hypothesis indicates that groups are less cooperative because ingroup members are reacting to the expected competitiveness of the outgroup. Before interacting with an outgroup, ingroup members access schemas regarding intergroup interactions. Those schemas are characterized by deceit and competition, and ingroup members prepare for competition and deceit based on those expectations (Pemberton, Insko, & Schopler, 1996). Alternatively, schemas for interactions within the ingroup are centered on cooperativeness and loyalty (Insko et al., 1990) and schemas for interindividual relations are also expected to be more positive and less negative than intergroup relations (Hoyle, Pinkley, & Insko, 1989; Pemberton et al., 1996). Therefore, the deceit and competition characteristic of intergroup interactions is attributed to being caused by the other group (Insko et al., 1990). The decision to not cooperate, then, is motivated by "not losing" (i.e., being deceived and then losing), as opposed to winning. That is, a competitive choice made to anticipate the outgroup's competitiveness reduces absolute loss and guarantees that the ingroup will not lose. To not cooperate in an intergroup interaction is, according to this hypothesis, the rational implication following distrust attributed to the outgroup.

**The norm of group interest.** The norm of group interest hypothesis indicates there is less cooperation between groups than between individuals because group members believe that it is expected of them (from other ingroup members) to act in the group's best interest by maximizing the ingroup's outcome. The norm of group interest is an unwritten rule that group members should act in a manner that benefits the ingroup (Wildschut et.
A strong adherence to the norm of group interest results in a stronger belief that one is expected to act in a manner that benefits the ingroup. To demonstrate the effect of the norm of group interest, Montoya and Pittinsky (2013) measured how strongly people adhered to the norm of group interest and assigned them to a cooperative or competitive context. Participants who strongly adhered to the norm of group interest were more competitive in a competitive context but not more cooperative in a cooperative context.

A key method for demonstrating the norm of group interest is whether the group members believe that their behavior will be public to ingroup members or private to each group member. For example, when group members expected their intergroup behavior to be made public to ingroup members, in comparison to if their behavior were to remain private, the group members were more competitive (Wildschut, Insko, & Gaertner, 2002). This demonstrated that when group members felt accountable to their ingroup members they competed more with the outgroup. Group members think is expected of them to compete with an outgroup because competing is acting in the group's best interest. By competing, group members are indicating they are complying with the norm of group interest. Therefore, there is less cooperation within intergroup interactions than interindividual interactions because group members who strongly adhere to the norm of group interest believe they are expected to compete with the other group.

**Measuring the discontinuity effect.** Instead of measuring the degree to which groups or individuals act cooperatively or competitively, the typical method to study the differences between intergroup and interindividual interactions compares their choices in a mixed-motive task (Wildschut et al., 2003). For intergroup interactions, people are separated into arbitrary groups that consist of at least three people. The group/individual
The Prisoners' Dilemma Game (PDG; Deutsch, 1958) is a mixed-motive task comprised of two possible choices that represent acting cooperatively (X) or competitively (Y). As seen in Figure 1, the X or Y choices are presented in a two by two matrix that displays the possible combinations of choices between partners or groups (adopted from Insko et al., 1988). For example, if Group A chooses X and Group B chooses Y, Group A gets 90 whereas Player/Group B gets 270. Whether the group gets 90 symbolic points or 90 cents, however, affects the magnitude of the discontinuity effect. When participants expect real money, the discontinuity effect becomes attenuated within intergroup interactions (Schopler et al., 1991). Symbolic points, however, do not attenuate the discontinuity effect (Lodewijkx, Wildschut, Syroit, Visser, & Rabbie, 1999).

Figure 1. A PDG matrix. The 'X' options represent cooperation and 'Y' represents competition.
Although the PDG is a widely used method, it has its shortcomings. Most prominently, the PDG cannot distinguish between the different motives for the competitive choice (Y). Researchers have difficulty determining whether making the competitive choice was motivated by distrust or self-interest. For example, distrust should lead to fewer cooperative choices but not necessarily more competitive choices (Insko et al., 1990). Since the PDG does not allow researchers to make that distinction, the Prisoners' Dilemma Game-alt (PDG-alt) matrix was designed, which offered three choices.

The PDG-alt offered the original compete and cooperate choices but also includes a third choice (Z) that represents withdraw, as demonstrated in Figure 2. The difference between the PDG and the PDG-alt is that the latter has a middle column that does not differ in outcome based on the choice of the opponent. Option Z guarantees reward that is the average of the XY pairing, which contains the highest and lowest reward output. In other words, the third option presents an opportunity for participants to choose a safe, low-risk option.

The PDG-alt offers a better method for measuring the discontinuity effect because it allows a better assessment of how greed and distrust affect choice in an intergroup interaction. Analysis of the results from the PDG-alt demonstrated the discontinuity effect between intergroup and interindividual interactions, and groups also chose the withdrawal option more often than individuals chose it (Insko et al., 1990; Schopler, Insko, Graetz, Drigotas, & Smith, 1991). Therefore, fewer cooperative choices could lead to more withdraw or compete choices and researchers can determine whether the choice to not cooperate was motivated by distrust or greed. Although Insko and colleagues
Figure 2. A PDG-Alt matrix. The 'X' options represent cooperation, 'Z' represents withdraw, and 'Y' represents competition.

(1990) determined that neither distrust nor greed alone explained the discontinuity effect, their results revealed that intergroup interactions are measurably different than interindividual interactions with the PDG-alt. Data resulting from the PDG-alt and PDG were collected from a culture that is typically individualistic. Intergroup motivation may differ in degree of influence because of the emphasis on different values within other cultures.

The Discontinuity Effect Across Cultures

The structure and value system of collectivistic cultures led many researchers to hypothesize whether the discontinuity effect would occur within collectivistic cultures to
the same magnitude as within individualistic cultures. Individualistic cultures (e.g., the United States) emphasize the individual; people are taught to value their uniqueness and independence from others (Osyerman et al., 2002). Collectivistic cultures (e.g., Japan) emphasize relationships and balanced interdependence with other people (Cross, Hardin, & Gercek-Swing, 2011; Markus & Kitayama, 1991). Conceptualizations of the differences between individualistic and collectivistic cultures in terms of the motivations within intergroup behavior tend to be from the mindset of a Western view of culture. Researchers from individualistic cultures hypothesized the motivations of people from collectivistic societies based on their interpretation of collectivistic culture (Brown, 2000; Hogg, Abrams, Otten, & Hinkle, 2004; Hofstede & Bond, 1984; Zimbroff, 2005). This viewpoint, however, could misinterpret the motivation within people from a collectivistic culture during intergroup interactions. According to a Western view of culture, people from collectivistic cultures are more cooperative during intergroup interactions and have a stronger preference to be part of a group as compared to people from individualistic cultures, who prefer to be more independent of a group and are more competitive (Brown, 2000; Hogg et al., 2004; Hofstede & Bond, 1984; Zimbroff, 2005). People from collectivistic cultures are viewed as being more cooperative in intergroup interactions because, on the surface, the interdependent structure of their society and their value of group harmony would seem to lead to more cooperative behavior (Parks & Vu, 1994; Wagner, 1995). In fact, some researchers from Western societies (e.g., Doney, Cannon, & Mullen, 1998) believed that the collectivistic culture value system would encourage its people to be less motivated by self-interest and therefore be less likely to engage in competitive behavior.
Contrary to the Western viewpoint, researchers from Eastern societies found that the discontinuity effect is present within Eastern societies (Takemura & Yuki, 2007). Analysis of the data did not provide evidence that participants from collectivistic cultures differed from participants from individualistic cultures in the frequency of competitive choices in intergroup interactions (Takemura & Yuki, 2007). Therefore, people from collectivistic cultures are not more likely to cooperate in intergroup interactions as previously expected; previous expectations regarding the effect of values within collectivistic cultures, namely group harmony, were not influencing intergroup interactions since the values occurred within the group, not between groups (Yuki, 2003; Yuki, Maddux, Brewer, & Takemura, 2005).

Individualistic and collectivistic cultures emphasize different values and motivations, but those values do not need to be mutually exclusive within people. Influenced by Hofstede's (1980) seminal work regarding the organization of the world's countries into groups of either individualism or collectivism, many researchers (e.g., Santilli & Miller, 2011; Vitell, Nwachukwu, & Barnes, 1993) use Hofstede's catalogue of countries as a method of determining a country's cultural "status." When researchers compare individualistic cultures to collectivistic cultures, the United States and Japan (or other East Asian countries) are seen as the 'gold standard' in the areas of individualism and collectivism, respectively (Osyerman et. al, 2002). Conflicting with Hofstede and others' views, Osyerman and colleagues (2002) provided evidence that cultural mindsets are flexible to the situation at hand and that a person from any culture has some degree of individualistic and collectivistic values. A theory that is consistent with Osyerman's theory is presented by Singelis, Triandis, Bhawuk, & Gelfand (1995), who make the
distinction between horizontal and vertical individualism and collectivism, indicating that horizontal individualism emphasizes equality whereas vertical collectivism emphasizes differences between group members. From these perspectives, a person who has many individualistic-motivated goals does not necessarily imply fewer collectivistic-motivated goals. Indeed, personal goals become more or less salient depending on how best to solve the current problem (Osyerman et al., 2002). In other words, a person may live in a collectivistic culture but have both collectivistic and individualistic goals. Intergroup interactions, then, can be influenced by the values and motivations of the cultural mindset that is present during the interaction. Since cultural values and motivation affect the impact of different motivations within intergroup interactions, the following sections explain how the influence of the various motives may differ between cultures.

**Schema-based distrust and social support for self-interest across cultures.** The structure of relationships across individualistic and collectivistic cultures contributes to a better understanding of the differences across cultures with respect to motives within intergroup interactions. The structure of relationships within collectivistic cultures is that of close-knit clusters. Relationships within those clusters are built off previous positive interactions. Within individualistic cultures, however, relationships with strangers are more common because having close-knit relationships are not as emphasized. More interactions with strangers leads to groups from individualistic cultures being less motivated by distrust in comparison to those from collectivistic cultures who are not as experienced with interactions with strangers (Kuwabera et al., 2007). For example, participants from the United States, unlike participants from Japan, are generally more trusting of strangers and are more willing to explore new partnerships to make a profit.
The strategy employed by those from different cultures exhibits the varying strength of the underlying motivations. To demonstrate the different responses across cultures, Kuwabara and colleagues (2007) asked participants from Japan and the United States to interact with another participant on a trust game regarding the allocation of resources. Participants were either aware or unaware of the nationality of the other participant and could choose to either continue 'trading' with their current partner or begin 'trading' with a new partner. In the unaware condition, participants from the United States were more likely than the participants from Japan to choose new partners to make a profit whereas the participants from Japan were more likely to build durable relationships (i.e., continue to work with partners) as long as the relationships were mutually beneficial. Therefore, distrust was a stronger influence than greed for participants from collectivistic cultures since they were willing to change partners only when their current trade relationship was negative. Although those participants from collectivistic cultures have more interdependent relationships within their groups, they are not more trusting of others; they lack general trust and, therefore, could be more strongly influenced by distrust (Yamagishi & Yamagishi, 1994; Yamagishi et. al, 1998). The relationships they hold with other groups are based off previous, positive interactions—interactions that alleviate the feeling of distrust.

The norm of group interest across cultures. Although both fear and self-interest are influential in intergroup interactions to some degree, these influences work in conjunction with a different process, the norm of group interest. In an ambiguous situation, people look to the group to get information regarding how they should act.
Intergroup interactions are ambiguous because one is unsure whether to act in accord with self-interest or equity principles (Schopler et al., 1993). Wildschut and colleagues (2002) demonstrated that social support is necessary for greed but not distrust. Furthermore, they found that the norm of group interest made explicit social support of competitive behavior redundant, but did not find a difference for cooperative behavior. In other words, the norm of group interest informed group members how to act in an intergroup interaction, similar to the effects of explicit support. Adherence to the norm of group interest is not a factor that would be bound to any one culture. Montoya and Pinter (2016) suggest that adherence to the norm of group interest is similar to having collectivistic values, and Osyerman and colleagues’ (2002) analysis of the data does not provide evidence that collectivistic values differ across cultures. Therefore, adherence to the norm of group interest could affect people from individualistic or collectivistic cultures.

The Current Study

The goal of this project was to better understand the effect of cultural mindsets on the relation between the norm of group interest, distrust, and greed as motivation within intergroup interactions. Specifically, this study investigated whether a person with an individualistic or collectivistic mindset was influenced differently by the motivations within intergroup interactions that lead to more compete or withdraw choices.

To investigate this, I manipulated cultural mindset (either individualistic or collectivistic mindset was made salient) and group norm (either compete or withdraw group norm was made salient). Cultural mindset was manipulated by asking participants to write out the similarities (collectivistic mindset manipulation) or differences
(individualistic mindset manipulation) between the participant and the participant's close family/friends. This method provided a reliable manipulation of cultural mindset without priming competition among participants (Osyerman & Lee, 2011).

Participants were later randomly assigned to a group norm condition in which a majority of their group members chose to either compete with or withdraw from the other group in the PDG-alt. After mindset and group norm were manipulated, participants selected a choice from the PDG-alt. This mixed-motive task measured the effect of the norm of group interest, distrust, and greed. Participants then completed a self-construal scale (Singelis, 1994) as a manipulation check for cultural mindset and a decision motivations assessment of intergroup motivation (Wildschut et al., 2002) as a measurement of motivation after the interaction. The decision motivations assessment asked participants to rate allocation strategies during the intergroup interaction with the mixed-motive task, including max rel, max own, and distrust. Greed was operationalized as high ratings of allocation strategies that resulted in maximizing the group's absolute outcome (max own) or maximizing the group's outcome relative to the other group's outcome (max rel). The main dependent variable was whether the participants chose the same choice as the majority of their ingroup chose; in other words, whether the participant matched the group norm.

**Hypothesis 1: Greed expected to be more influential with individualistic mindset, distrust expected to be more influential with collectivistic mindset.** I hypothesized that participants with different cultural mindsets would have different motivations for their decision. Specifically, participants with an individualistic mindset were expected to be more strongly influenced by greed than distrust, whereas participants
with a collectivistic mindset were expected to be more strongly influenced by distrust than greed. Max own indicates that allocation strategy was motivated by maximizing one's absolute outcome, whereas max rel indicates allocation strategy motivated by maximizing one's outcome relative to another's outcome.

The group decision in the PDG-alt has two likely positions: to compete or to withdraw. Since the discontinuity effect demonstrates that intergroup behavior leads to fewer cooperative choices (Inkso et. al, 1990; Schopler et. al, 1991), it is less likely that the group norm would advise cooperative behavior of the group members. Therefore, it is feasible for a group norm to encourage a competitive or withdrawal decision in an intergroup interaction by a majority of the group members choosing competitive or withdrawal choices, respectively.

For those with an individualistic mindset, the norm of group interest was hypothesized to complement greed and lead to matching behavior in a competitive group norm condition. Heightened adherence to the norm of group interest within an individualistic mindset would not lead to matching a withdraw group norm, because greed does not easily go hand-in-hand with non-competitive behavior. Those participants with an individualistic mindset are interested in the pursuit of personal gain and not competing becomes attractive only when it leads to getting personal benefits that would not have been accomplished otherwise (Wagner, 1995). Non-competitive contexts in which there are not greater benefits leads to diminished personal resources that could be directed toward other pursuits (Wagner, 1995). Therefore, participants with an individualistic mindset who strongly adhered to the norm of group interest were expected to match the group norm in a competitive condition but not necessarily match the group
norm in a withdraw condition.

Participants with a collectivistic mindset who strongly adhered to the norm of group interest were expected to match the group norm in either a compete or withdraw group norm context because of the emphasis on group cohesion and the relational structure within the group. Those with a collectivistic mindset were expected to be more influenced by feelings of personal connectedness with ingroup members and the relational structure within the group (Yamagishi, 1988; Yuki, 2003). The norm of group interest, although influential, may not be as persuasive in both competitive and withdraw conditions for participants with an individualistic mindset because individualistic cultures do not emphasize group cohesion as strongly as it is emphasized in collectivistic cultures (Brewer & Chen, 2007; Osyerman et al., 2002; Singelis et al., 1995).

**Hypothesis 2: The interaction between cultural mindset, adherence to the norm of group interest, and group norm.** I hypothesized that there would be an interaction of cultural mindset and group norm, moderated by adherence to the norm of group interest, on matching. Specifically, I expected a two-way interaction and a three-way interaction. I hypothesized a three-way interaction among adherence to the norm of group interest, cultural mindset, and group norm, such that participants primed with an individualistic mindset who strongly adhered to the norm of group interest were expected to match the group norm only in the compete group norm condition. Participants primed with a collectivistic mindset and who strongly adhered to the norm of group interest, however, were hypothesized to match the group norm in both compete and withdraw group norm conditions. As previous findings (e.g., Montoya & Pittinsky, 2013) demonstrate the relation between adherence to the norm of group interest and only
matching group behavior in a competitive context, whether participants with a collectivistic mindset match the group norm in contexts of either compete or withdraw is of particular interest.

I hypothesized that group members who strongly adhered to the norm of group interest would, in comparison to those who less strongly adhered to the norm of group interest, match the group norm. Since group members who strongly adhered to the norm of group interest believed that their group members expect them to look out for the group, those who adhered to that belief would be more likely to act in a way that indicated they were being good group members and assumed that the group norm is what was best for the group.
CHAPTER II

METHOD

Participants

130 undergraduates (45 men) from the University of Dayton participated in exchange for credit in an introductory psychology course. Ninety-nine percent of the participants reported being between the ages of 18 to 22 and 90 percent of the students identified as Caucasian. A power analyses determined a necessary sample size of 100 participants. Power estimates were derived from a logistic regression using a two-tail assessment with an odds ratio of 3.47 (Chen, Cohen, & Chen, 2010). This test resulted in a total sample size of 164 for .95 power. A sample size of 100 achieved .80 power. Two women and one man were excluded from the analysis due to an indication that they did not complete the questionnaires accurately; the data of the remaining 127 participants were analyzed.

Materials

Norm of group interest (NGI) scale. The norm of group interest scale (Montoya & Pittinsky, 2013) measured the degree to which the participant adheres to the norm of group interest (e.g., "I feel that my fellow group members want me to do everything I can to support my group."). As presented in Appendix A, the scale consisted of six questions that use a 7-point rating scale (1 = not at all, 7 = very much) with a reliability of α = .56.

Decision motivations assessment. These statements assess distinct allocation strategies of the participant (eleven statements) and the participant's perception of the
other group’s motives (twelve statements) during the mixed motive task. Originally part of the Multiple Alternative Matrices (MAMs; Bornstein et al., 1983), two strategies were included in the main analyses: max rel “I wanted to earn more than the other person” and distrust "I did not trust the other person." Appendix D presents the decision motivation assessment, which used a 7-point rating scale (1= not at all, 7= very much). A reliability for max rel of $\alpha = .75$ and $\alpha = .72$ for distrust. A reliability for max rel other of $\alpha = .44$, $\alpha = .80$ for max own other, and $\alpha = .61$ for distrust other (adopted from Wildschut et al., 2002).

**Self-construal scale.** The self-construal scale (Singelis, 1994) assessed the degree to which participants identified with an independent (e.g., "I enjoy being unique and different from others in many respects") or interdependent (e.g., "I often have the feeling that my relationships with others are more important than my own accomplishments") self-construal. The scale consists of twenty-four questions that use a 7-point rating ($1 = strongly disagree, 7 = strongly agree$), as presented in Appendix E, with a reliability of $\alpha = .73$.

**Procedure**

Participants were seated in separate lab rooms connected by a hallway. The experimenter kept the doors partially closed so that participants could not see out, but clearly heard the experimenter read from a script. After participants signed the informed consent forms, the experimenter asked each participant to complete the norm of group interest scale and entered each room to separately hand the scale to each participant. After five minutes, the experimenter entered each lab room and asked participants to choose a card from six available cards that were supposedly either labeled "A" or "B"
(but were all labeled "A"), the purpose of which was to separate the participants into arbitrary groups. Following the card choice, the experimenter collected the completed scale, went back into the hallway, and told all participants: "During the course of the study, your group members and you will be interacting with the other group members, some of which are located in a different section, using a decision matrix."

The experimenter instructed participants through a demonstration of the PDG-alt and read through several examples with them. Participants were told that they had several minutes to complete an exercise on the task's outcomes and it was emphasized that their answers were not for a test, but merely a way to practice using the decision matrix. After several minutes, the experimenter entered each room to answer possible questions and to make sure the participant understood how the matrix worked. During this time, the experimenter individually informed each participant that they were randomly selected to choose last and therefore will see the other ingroup members' decisions on the mixed-motive task before they made their own.

To manipulate individualism or collectivism, the participant completed the randomly assigned individualism or collectivism task. This task, adapted from Trafimow, Triandis, and Goto (1991), required participants to write examples of similarity or dissimilarity between themselves and their family/friends. To manipulate individualism, participants read, "For the next two minutes please think of what makes you different from your family and friends. What do you expect yourself to do? Please write down your thoughts." To manipulate collectivism, participants read, "For the next two minutes please think of what you have in common with your family and friends. What do they expect you to do? Please write down your thoughts." This task is presented in Appendix
C. While the participant filled out the sheet, the experimenter explained that the experimenter was going to check on the progress of the other section and would return shortly so the participants could make their choice. The experimenter then left to check on the other section and collect the information from the other supposed group members.

After collecting the choices of the other group members, the experimenter retrieved the manipulation sheet from the participant and asked the participant to make a choice on the indicated row (the experimenter pointed to the correct line on the decision sheet). To manipulate group norm, the decision sheet had the choice of the other three supposed group members. In the competitive condition, a majority of the members (two) chose the option that represented the competitive choice whereas the minority (one) chose the option that represented a withdraw choice. In the withdraw condition, a majority chose the option that represents a withdraw choice whereas the minority chose the option that represents the competitive choice. Therefore, participants were under the impression that their group consisted of three other group members. If participants asked what would happen in the case of a tie, the experimenter informed the participants that the average of the choices would be the outcome. After all participants made a choice, the experimenter handed each participant a packet containing the decision motivations assessment and self-construal scale and asked all participants to complete the final packet while the experimenter went to check on the other section's progress and determine the decision made by each group.
CHAPTER III

RESULTS

Manipulation Checks

The correlations between self-construal, norm of group interest, allocation strategy, perceived allocation strategy of the outgroup, and likelihood of the outgroup's choice are presented in Table 1. The results of an independent-samples t-test did not provide evidence that participants in the individualistic mindset condition ($M = 63.47$, $SD = 8.08$), in comparison to participants in the collectivistic mindset condition ($M = 62.27$, $SD = 7.49$), differed in interdependent self-construal scores, $t(122) = 0.85, p = .40$.

Furthermore, the analysis did not provide evidence that the conditions differed in independent self-construal scores between those participants in the individualistic ($M = 58.57$, $SD = 8.42$) or collectivistic ($M = 60.89$, $SD = 9.57$) mindset conditions, $t(122) = -1.43, p = .16$.

To check the effect of group norm on choice, as presented in Table 2, the chi-square test revealed that group norm (compete coded as 1, withdraw as 2) did not influence participant's choice, $\chi^2 (2, N = 127) = 0.82, p = .66$. However, group norm did affect matching (match was coded as 1, did not match as 0) the group norm. Choice was operationalized as which option the participant chose within the mixed-motive task, either X, Y, or Z. Matching was operationalized as whether the participant's choice matched the group norm (e.g., a choice of Z would match a "withdraw" group norm but
not match a "compete" group norm). Cultural mindset (individualistic coded as 1, collectivistic as 2) and group norm were separately analyzed with matching in a chi-square analysis. As demonstrated in Table 3, group norm was associated with matching, $\chi^2(1, N = 127) = 5.73, p = .017$, but cultural mindset was not associated with matching, $\chi^2(1, N = 127) = 0.64, p = .42$.

**Hypothesis 1: Greed more influential for individualistic mindset, distrust more influential for collectivistic mindset**

The first hypothesis proposed that participants with an individualistic mindset were expected to be influenced more strongly by greed than distrust and that participants with a collectivistic mindset were expected to be influenced more strongly by distrust than greed. Distrust, maximizing absolute outcomes (max own), and maximizing relative outcomes (max rel) allocation strategies were separately assessed within a multinomial logistic regression to predict choice. The means and standard deviations are presented in Table 4. Assessing the influence of group norm, distrust, and cultural mindset on choice, there was only a main effect of max rel strategy on choice, $\beta = 0.73$, Wald $\chi^2(1, N = 127) = 9.14, p = .003$, such that the higher rating a participant gave to the max rel strategy, the more likely compete would be chosen over withdraw. Assessing the influence of group norm, max own, and cultural mindset on choice, there was only a main effect of max rel on choice, $\beta = 0.65$, Wald $\chi^2(1, N = 127) = 7.58, p < .01$, such that the higher rating a participant gave to the max rel strategy, the more likely compete would be chosen over
Table 1.

*Intercorrelations for Motivation, Perceived Motivation and Choice of the Other Group, Self-construal Scores, and Adherence to the Norm of Group Interest*

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interdependent self-construal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.71</td>
</tr>
<tr>
<td>2. Independent self-construal</td>
<td>.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.72</td>
</tr>
</tbody>
</table>
| 3. Norm of group interest            |    |    |    |    |    |    |    |    |    |    |    |    | .36**.
| 4. Max rel                           | .12| .21*|    |    |    |    |    |    |    |    |    |    | .40**.
| 5. Distrust                          | .12| .12 | .28**|    |    |    |    |    |    |    |    |    | .53**.
| 6. Max own                           | .01| .25**| .20*|    |    |    |    |    |    |    |    |    | .68**.
| 7. Min diff                          | .28**| .04 | .02 | -.21*| -.09| -.08|    |    |    |    |    |    | .53|
| 8. Max rel other                     | .08| .02 | .17 | .28**| .27**|    |    |    |    |    |    |    | .44|
| 9. Distrust other                    | .09| .11 | .12 | .26**| .61**| .28**| .10 |    |    |    |    |    | .61|
| 10. Max own other                    | .07| .12 | .11 | .39**| .21* | .39**| .02 |    |    |    |    |    | .52**.
| 11. Perceived cooperation            | .14| -.10| .03 | -.01| .09 | -.01| .11 | .01 |    |    |    |    | .11|
| 12. Perceived withdrawal             | -.14| .05 | -.05 | .16 | -.04 | -.08 | .11 | -.03 | -.07 | -.05 | -.50**|    |    |
| 13. Perceived competition            | -.05| .12 | .01 | .16 | -.12 | .07 | -.22*| -.002| -.09 | .09 | -.51**| -.42**|    |    |

*Note.* The numbers along the diagonal are the Cronbach’s alpha value of the measure. *p < .05  **p < .01
Table 2

*Crosstabulation of Decision by Group Norm and Cultural Mindset*

<table>
<thead>
<tr>
<th>Group norm</th>
<th>Decision</th>
<th>Collectivistic mindset</th>
<th>Individualistic</th>
<th>Collectivistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compete</td>
<td>Cooperate</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compete</td>
<td>12</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Withdraw</td>
<td>15</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Withdraw</td>
<td>Cooperate</td>
<td>7</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compete</td>
<td>14</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Withdraw</td>
<td>12</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

withdraw. Assessing the influence of group norm, max rel, and cultural mindset on choice, there was only a main effect of max rel strategy on choice, $\beta = 1.04$, Wald $\chi^2(1, N = 127) = 4.24, p < .05$, such that the higher rating a participant gave to the max rel strategy, the more likely compete would be chosen over withdraw. The effect of cultural mindset on intergroup motivation was further analyzed and participants with an individualistic mindset gave higher ratings to the max rel strategy when they chose to compete ($M = 5.46, SD = 1.10$) in comparison to withdraw ($M = 4.15, SD = 1.82$), $t(51) = 3.16, p < .01$. Participants with an individualistic mindset gave higher ratings to the max own strategy when they chose to compete ($M = 6.04, SD = 0.96$), as compared to when they chose to withdraw ($M = 5.11, SD = 1.42$), $t(51) = 2.77, p < .01$. Analysis of the distrust strategy rating among participants with an individualistic mindset did not provide evidence of strategy rating differing whether those participants chose to compete ($M = 4.60, SD = 1.19$) or withdraw ($M = 4.25, SD = 1.67$), $t(51) = 0.89, p = .38$. Participants with a collectivistic mindset also gave higher ratings to the max rel strategy when they chose to compete ($M = 5.79, SD = 1.11$) in comparison to withdraw ($M = 4.63, SD = 1.85$), $t(50) = 2.70, p < .01$, but analysis of their distrust rating did not provide evidence of distrust rating differing whether they chose to compete ($M = 4.36, SD = 1.53$) or
withdraw \((M = 3.93, SD = 1.62), t(50) = 0.98, p = .33.\)

Table 3  
*Crosstabulation of Matching by Group Norm and Cultural Mindset*

<table>
<thead>
<tr>
<th>Group norm</th>
<th>Matching</th>
<th>Cultural mindset</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Individualistic</td>
</tr>
<tr>
<td>Compete</td>
<td>Did not match</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Matched</td>
<td>12</td>
</tr>
<tr>
<td>Withdraw</td>
<td>Did not match</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Matched</td>
<td>19</td>
</tr>
</tbody>
</table>

Furthermore, analysis of participants with a collectivistic mindset max own ratings did not provide evidence of max own rating differing whether they chose to compete \((M = 5.67, SD = 1.43)\) or withdraw \((M = 5.43, SD = 1.40), t(50) = 0.61, p = .55.\)

**Hypothesis 2: The interaction between cultural mindset, adherence to the norm of group interest, and group norm**

The final hypothesis proposed an interaction between cultural mindset, adherence to the norm of group interest, and group norm on matching. Specifically, I expected participants who strongly adhered to the norm of group interest to match the group norm more than those participants who less strongly adhered would match the group norm. Furthermore, I expected participants who strongly adhered to the norm of group interest and had a collectivistic mindset made salient to match both the compete and withdraw group norms, whereas participants who strongly adhered to the norm of group interest but with an individualistic mindset salient only matched the compete group norm. When adherence to the norm of group interact (centered) and group norm on matching were analyzed with a logistic regression, there was a main effect of group norm, \(\chi^2(1, N = 127) = 5.14, p < .05, \) such that participants in the compete condition, compared to the withdraw condition, were less likely to match the group norm. Furthermore, there was an
interaction between norm of group interest and group norm on matching, $\beta = 0.24$, Wald $\chi^2(1, N = 127) = 5.12, \ p < .05$. Decomposing the interaction indicated that within the compete condition, participants who matched the group norm gave higher ratings on the norm of group interest scale ($M = 1.25, SD = 3.39$), in comparison to ratings given by participants who did not match the group norm ($M = -1.44, SD = 3.57$), $t(61) = -3.00, p < .01$. Analysis of participants' rating of the norm of group interest scale within the withdraw condition did not provide evidence that the rating differed between participants who matched ($M = 0.23, SD = 3.97$) or did not match ($M = 0.46, SD = 4.19$) the group norm, $t(62) = 0.22, p = .82$. However, when the variables were analyzed within a logistic regression that included whether cultural mindset, adherence to the norm of group interest, and group norm predicted the participant matching the group norm, the previous effects were not as influential. As demonstrated in Table 5, the analysis did not provide evidence that cultural mindset, adherence to the norm of group interest, or group norm predicted matching.

**Exploratory analyses**

**Do participants feel more confidence after matching the group norm?** Some researchers (Mullin & Hogg, 1999) believe that group membership reduces subjective uncertainty during intergroup interactions, which would result in participants who matched the group norm report higher confidence in their choice. Analysis of confidence in choice during the intergroup interaction and matching the group norm did not provide evidence of participants differing in their confidence rating whether they matched the group norm ($M = 5.18, SD = 1.51$) or did not match the group norm ($M = 5.27, SD = 1.39$), $t(125) = -0.36, p = .72$. 

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Table 4
Means, Standard Deviations, and One-Way Analyses of Variance for the Effects of Group Norm and Cultural Mindset Interaction on Allocation Strategy Ratings and Perceived Choice of the Other Group

<table>
<thead>
<tr>
<th>Allocation Strategy</th>
<th>Compete</th>
<th></th>
<th>Withdraw</th>
<th></th>
<th></th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Individualistic</td>
<td>Collectivistic</td>
<td>Individualistic</td>
<td>Collectivistic</td>
<td>F(1, 123)</td>
<td>p</td>
</tr>
<tr>
<td>Max rel</td>
<td>4.48 (0.30)</td>
<td>4.78 (0.30)</td>
<td>4.97 (0.29)</td>
<td>5.16 (0.30)</td>
<td>0.03</td>
<td>.86</td>
</tr>
<tr>
<td>Max own</td>
<td>5.32 (0.26)</td>
<td>5.06 (0.25)</td>
<td>5.64 (0.25)</td>
<td>5.81 (0.26)</td>
<td>0.73</td>
<td>.40</td>
</tr>
<tr>
<td>Distrust</td>
<td>4.43 (0.28)</td>
<td>3.89 (0.27)</td>
<td>4.26 (0.27)</td>
<td>4.08 (0.28)</td>
<td>0.43</td>
<td>.51</td>
</tr>
<tr>
<td>Perceived max own</td>
<td>5.87 (0.19)</td>
<td>5.89 (0.18)</td>
<td>5.99 (0.18)</td>
<td>6.31 (0.19)</td>
<td>0.68</td>
<td>.41</td>
</tr>
<tr>
<td>Perceived max rel</td>
<td>5.11 (0.21)</td>
<td>4.91 (0.21)</td>
<td>5.27 (0.20)</td>
<td>5.26 (0.21)</td>
<td>0.21</td>
<td>.65</td>
</tr>
<tr>
<td>Perceived distrust</td>
<td>5.20 (0.21)</td>
<td>4.48 (0.21)</td>
<td>5.05 (0.21)</td>
<td>4.97 (0.22)</td>
<td>2.31</td>
<td>.13</td>
</tr>
<tr>
<td>Perceived withdrawal</td>
<td>31.94 (3.12)</td>
<td>36.75 (3.07)</td>
<td>43.55 (3.02)</td>
<td>43.52 (3.12)</td>
<td>0.62</td>
<td>.43</td>
</tr>
<tr>
<td>Perceived competition</td>
<td>35.10 (3.05)</td>
<td>44.72 (3.00)</td>
<td>27.79 (2.96)</td>
<td>30.42 (3.05)</td>
<td>1.34</td>
<td>.25</td>
</tr>
<tr>
<td>Perceived cooperation</td>
<td>32.56 (2.94)</td>
<td>20.97 (2.90)</td>
<td>28.56 (2.85)</td>
<td>25.74 (2.94)</td>
<td>2.28</td>
<td>.13</td>
</tr>
</tbody>
</table>

Note. N = 127
Table 5

Logistic Regression Assessing Interaction of Adherence to Norm of Group Interest, Group Norm, and Cultural Mindset on Matching

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE</th>
<th>Odds ratio</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherence to the norm of group interest (NGI)</td>
<td>0.10</td>
<td>0.11</td>
<td>1.11</td>
<td>.36</td>
</tr>
<tr>
<td>Group Norm (GN)</td>
<td>-1.09</td>
<td>0.55</td>
<td>0.34</td>
<td>.05</td>
</tr>
<tr>
<td>Cultural mindset (CM)</td>
<td>-0.41</td>
<td>0.53</td>
<td>0.66</td>
<td>.44</td>
</tr>
<tr>
<td>NGI×GN</td>
<td>0.15</td>
<td>0.17</td>
<td>1.16</td>
<td>.38</td>
</tr>
<tr>
<td>NGI×CM</td>
<td>-0.18</td>
<td>0.14</td>
<td>0.84</td>
<td>.21</td>
</tr>
<tr>
<td>GN×CM</td>
<td>0.34</td>
<td>0.77</td>
<td>1.34</td>
<td>.66</td>
</tr>
<tr>
<td>NGI×GN×CM</td>
<td>0.12</td>
<td>0.22</td>
<td>1.13</td>
<td>.58</td>
</tr>
</tbody>
</table>

Note. N = 127

**Inadvertently influencing withdraw choice.** Instructions for participants within the collectivistic mindset condition could have affected the participant's motivation and subsequent choice in the mixed-motive task. Specifically, the participants who read the instructions to manipulate collectivistic mindset may have chosen their decision based on the allocation strategy rating regarding minimizing the difference in outcome between groups (min diff). Analysis of min diff and both matching the group norm and choice in the intergroup interaction resulted in participants with a collectivistic mindset giving higher rating to min diff when they chose to withdraw (M = 4.07, SD = 1.46) in comparison to compete (M = 3.12, SD = 1.33), t(50) = -2.32, p < .05. Analysis of min diff rating did not provide evidence of min diff rating differing between participants with a collectivistic mindset who matched the group norm (M = 3.69, SD = 1.60) or did not match the group norm (M = 3.45, SD = 1.26), t(61) = -0.65, p = .52. Therefore, the allocation strategy to minimize the difference between groups' outcomes affected choice in the intergroup interaction but not whether the participant matched the group norm.
Perception of other group's choice and motivation affecting the participant's choice. The motivation within the participant and the group was hypothesized to affect choice in the intergroup interaction. Related to that hypothesis, the participants' perception of the other group's choice and motivation could also affect choice, as believing the other group is more likely to cooperate could encourage participants to compete. Independent-samples t-tests assessed whether cultural mindset affected whether the participant perceived the other group as likely to choose compete, cooperate, or withdraw, the means and standard deviations of which are presented in Table 4.

Participants with an individualistic mindset ($M = 30.49, SD = 15.72$), in comparison to participants with a collectivistic mindset ($M = 23.32, SD = 17.07$), perceived the other group as more likely to choose to cooperate, $t(125) = 2.47, p < .05$. Participants with a collectivistic mindset ($M = 37.68, SD = 19.65$), in comparison to participants with an individualistic mindset ($M = 31.33, SD = 15.75$), perceived the other group as more likely to choose to compete, $t(125) = -2.01, p < .05$. Analysis of the results regarding participants perceiving the other group as choosing to withdraw did not provide evidence that participants with an individualistic mindset ($M = 37.92, SD = 18.26$) differed in their rating from participants with a collectivistic mindset, ($M = 40.08, SD = 17.44$), $t(125) = -0.68, p = .50$. Therefore, participants with an individualistic mindset were more likely to believe the other group would cooperate, whereas participants with a collectivistic mindset were more likely to believe the other group would compete.

Furthermore, a multinomial regression assessed participants' perceptions of the other group's motivation during the interaction. The influence of group norm, perceived distrust, and cultural mindset on choice indicated a main effect of norm of group interest,
$\beta = 0.13, \text{ Wald } \chi^2(1, N = 127) = 4.93, p < .05$, such that the more a participant adhered to the norm of group interest the more likely that participant would choose to compete, in comparison to withdraw. The influence of group norm, perceived max rel, and cultural mindset on choice indicated a main effect of norm of group interest, $\beta = 0.14, \text{ Wald } \chi^2(1, N = 127) = 5.66 \ p < .05$, such that a participant chose to compete, in comparison to withdraw, the more that participant adhered to the norm of group interest. Assessing the influence of group norm, perceived max own, and cultural mindset on choice indicated a main effect of norm of group interest, $\beta = .15, \text{ Wald } \chi^2(1, N = 127) = 5.89, p < .05$, such that participants chose to compete, in comparison to withdraw, the more strongly they adhered to the norm of group interest. In summary, participants who more strongly adhered to the norm of group interest were more likely to compete with the other group regardless of their perception of the other group's motivation.

Further investigating the relation between perceived motivation of the other group and participant cultural mindset, analysis of the results of an independent-samples t-test did not provide evidence that participants with an individualistic mindset rated the other group's max rel motivation differently whether the participant chose to compete ($M = 5.00, SD = 1.29$) or withdraw ($M = 5.31, SD = 1.18$), $t(51) = -0.93, p = .36$. Analysis of participant rating of the other group's distrust did not provide evidence that distrust rating differed whether the participant chose to compete ($M = 5.17, SD = 1.07$) or withdraw ($M = 5.17, SD = 1.19$), $t(51) = -0.20, p = .98$, nor did the analysis of their rating of the other group's max own motivation provide evidence of max own rating differing whether the participant chose to compete ($M = 5.88, SD = 1.25$) or withdraw ($M = 6.15, SD = 0.88$), $t(51) = -0.89, p = .38$. The results of an independent-samples t-test did not provide
evidence that participants with a collectivistic mindset rated the other group's max rel motivation differently whether the participant chose to compete ($M = 5.06, SD = 1.15$) or withdraw ($M = 5.09, SD = 1.14$), $t(50) = -0.08, p = .93$. Furthermore, analysis of participant rating of the other group's max own motivation did not provide evidence of max own rating differing whether the participant chose to compete ($M = 6.17, SD = 0.84$) or withdraw ($M = 5.95, SD = 1.10$), $t(50) = 0.67, p = .43$. However, participants with a collectivistic mindset's rating of the other group's distrust motivation differed whether the participant chose to compete ($M = 4.49, SD = 1.11$) as compared to withdraw ($M = 5.12, SD = 1.06$), $t(49) = -2.06, p < .05$. Overall, participants with a collectivistic mindset who chose to withdraw also believed the other group was motivated more strongly by distrust.

**Choosing to cooperate affecting the results of the data.** Choosing to cooperate in an intergroup interaction is an unlikely choice for most group members. Group members who chose to cooperate, therefore, could have affected the results and subsequent understanding of the motivation and choices of the other participants. Removing participants who chose to cooperate did not dramatically affect the participants' allocation strategies—there was still a consistent main effect of max rel across the motivation strategies, such that higher ratings of max rel was associated with participants competing instead of withdrawing. Regarding the perceived motivation of the other group, a multinomial regression assessed participants' perceptions of the other group's motivation during the interaction. Analysis of the perceived motivation ratings did not differ when participants who cooperated were removed from the analysis—there was still a consistent main effect of adherence to the norm of group interest, such that the more participants adhered to the norm of group interest, the more likely they chose to
compete as compared to withdraw. Removing participants who chose to cooperate did affect the perceived choice of the other group, such that analysis of the perceived likelihood that the other group will compete did not provide evidence that participants with a collectivistic mindset ($M = 36.71, SD = 18.57$), in comparison to participants with an individualistic mindset ($M = 30.25, SD = 15.66$), differed in their ratings, $t(103) = -1.93, p = .06$. Overall, participants who chose to cooperate in the intergroup interaction did not seem to skew the main results.
CHAPTER IV
DISCUSSION

This study explored the relation between the norm of group interest, distrust, and greed within intergroup interactions between people with individualistic and collectivistic mindsets. I found that the relation between adherence to the norm of group interest and matching was moderated by group norm, such that participants who strongly adhered to the norm of group interest were more likely to match the compete group norm. I also found a consistent main effect of the max rel allocation strategy predicting choice, such that the higher a participant rated that strategy the more likely he or she was to choose to compete, in comparison to withdraw. Regarding the perception of the other group's choice, I found that participants with an individualistic mindset believed the other group was more likely to cooperate than participants with a collectivistic mindset believe the other group would cooperate. Participants with a collectivistic mindset, however, believe the other group was more likely to compete, compared to how likely participants with an individualistic mindset thought the other group would compete. Participants with a collectivistic mindset, compared to those with an individualistic mindset, perceived the other group to be motivated more strongly by distrust. Furthermore, I found that the influence of group norm, perception of the other group's motivation, and cultural mindset on choice consistently had a main effect of adherence to the norm of group interest across perceived max rel, max own, and distrust motivation. Specifically, the more strongly a
participant adhered to the norm of group interest, the more likely that participant would compete, compared to withdraw, with the outgroup. The results partially support theories regarding flexible cultural mindsets and the norm of group interest. The norm of group interest research predicted that people who adhere more strongly to the norm of group interest act in a manner to benefit the ingroup because that is what those people believe is expected of them (Montoya & Pittinsky, 2013). Specifically, people who strongly adhere to the norm of group interest act in a manner that they believe demonstrates they are being a good group member, therefore they are more likely to be motivated to act a manner to maximize the outcomes of their own group, not relative to the outcomes of the outgroup. On the one hand, the results regarding the norm of group interest predicting matching the compete group norm is consistent with the results of Montoya and Pittinsky (2013). On the other hand, contrary to results of the norm of group interest research (Montoya & Pinter, 2016; Montoya & Pittinsky, 2013; Inkso, Kirchner, Pinter, Efaw, & Wildschut, 2005; Wildschut & Insko, 2007), choice in the intergroup context was better predicted by greed. Therefore, the results do not provide similar evidence of what would be expected from strategy resulting from adherence to the norm of group interest.

Flexible cultural mindsets proposed that people have both individualistic and collectivistic goals and whether specific goals are activated to contribute toward solving a problem depends on several factors, one of which is which mindset is chronically activated (Osyerman et al., 2002). Analysis of the results did not provide evidence that participants, regardless of manipulated mindset, differed in terms of independent and interdependent values. Those results support the flexible cultural mindset theory in regard to accessibility of cultural mindset values.
These results have implications regarding motivation within intergroup interactions, as the interactions seem to be as affected by perceptions between groups as much as dynamics within the group. Participants who strongly adhered to the norm of group interest were more likely to match the compete group norm, compared to the withdraw group norm. Strong adherence to the norm of group interest, however, was not associated with participants decision in the withdraw group norm condition. This could have occurred because when the group norm was withdraw even having one member provide social support for competition is still supporting the participant's self-interested behavior. This one group member is similar to having a "true partner", another person who does not conform to the group, to encourage people to not conform to the group decision (Asch, 1955). Participants also did not report higher ratings of confidence when they matched the group norm, in comparison to participants who did not match the group norm. Therefore matching the group norm was not associated with participants feeling more confident in their choice and thus theories regarding group membership reducing subjective uncertainty (Mullin & Hogg, 1999) were not supported. Furthermore, participants with an individualistic mindset, in comparison to those with a collectivistic mindset, perceived the other group as more likely to cooperate. Perceiving the other group as more likely to cooperate may also influence choice by reducing distrust promoted by a withdraw group norm. Therefore, to affect whether a person who strongly adheres to the norm of group interest will match a withdraw group norm could be dependent on whether a collectivistic mindset can be sufficiently made salient.

Research regarding intergroup interactions and cultural mindsets could benefit from more sensitive methods and measures. For example, the current measure of
adherence to the norm of group interest may instead be a more subtle measure of collectivistic values and that collectivistic values are synonymous to adherence to the norm of group interest (Montoya & Pinter, 2016; Montoya & Pittinsky, 2013). Therefore, discontinuity effect researchers should consider adjusting influences of the discontinuity effect to account for that evidence. The cultural mindset manipulation was less than successful (as compared to previous findings, e.g., Ospyerman et al., 2002) influencing whether participants matched the group norm and, therefore, participants may have not been strongly affected by the mindset manipulation. This could have resulted from the instructions regarding the collectivistic mindset manipulation. I expected participants to respond to the collectivistic mindset manipulation by reporting they should "do what is best for the group“, "find agreement with my other group members", or "protect my group from the other group's choice." Instead, many participants responded to the collectivistic mindset manipulation by reporting that their family and friends expected them to be "kind," "fair," and "do what's right," values that are not cultural mindset or group specific. Participants responding in this manner could be less likely to compete with the other group because the intergroup interaction was not framed with group-favoring values and therefore reduced intergroup conflict, similar to decategorization (Bettencourt, Brewer, Croak, & Miller, 1992) or recategorization (Dovidio, Gaertner, Validzic, Matoka, Johnson, & Frazier, 1997) research. Decategorization involves emphasizing to a group member their individuality instead of their group identity and recategorization emphasizes a superordinate group membership shared by the ingroup and outgroup (e.g., competing sports teams' fans all sharing group membership to their country; Paluck & Green, 2009). The values reported by participants that were not
culture- or group-specific could have acted similarly to decategorization and recategorization in reducing intergroup conflict and therefore reduce competing. This, however, did not lead to more cooperate choices and instead there were more withdraw choices—a choice that would result in both groups getting an equal amount of points. This theory was supported by exploratory analysis, as participants who chose to withdraw gave higher ratings to the min diff allocation strategy, in comparison to participants who chose to compete. Since cultural mindsets could be flexible to the situation at hand, as demonstrated by the effect cultural mindset had on perception of the other group's motivation and likelihood of choosing to compete or withdraw, perhaps it would be more sensitive to create a situation in which it would be more beneficial to act in a manner motivated by collectivistic or individualistic values. This method could allow a better understanding of the motivation within intergroup interactions across cultural mindsets and which factors influence people to use one mindset over another.
REFERENCES


Yamagishi, T. (1988). Exit from the group as an individualistic solution to the free rider problem in the United States and Japan. *Journal of Experimental Social Psychology*
Psychology, 24, 530-542.


APPENDIX A

Norm of Group Interest Scale

I feel that my fellow group members want me to do everything I can to support my group.

1 2 3 4 5 6 7
Not at all Very much

I feel that other group members expect me to look out for them.

1 2 3 4 5 6 7
Not at all Very much

It is important that we all do what we can to support our group.

1 2 3 4 5 6 7
Not at all Very much

I feel that my group members expect me to privilege the interests of my group over other groups.

1 2 3 4 5 6 7
Not at all Very much

Group members should "pull strings" to help out fellow group members.

1 2 3 4 5 6 7
Not at all Very much

Whatever the mission of my group, I feel that all group members are expected to help out.

1 2 3 4 5 6 7
Not at all Very much
APPENDIX B

Information Sheet

For the social interaction, the members of your group will each vote to select a choice, either “X,” “Y,” or “Z,” from the matrix shown below.

The numbers in the diagram below represent the payoffs in points for your group and the other group for each possible combination of choices that could occur. In each square of the interaction matrix, your group’s payoff is located in the bottom left corner (in Bold) and the payoff for the other group is located in the upper right corner.

<table>
<thead>
<tr>
<th></th>
<th>Other group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>X</strong></td>
<td><strong>Z</strong></td>
</tr>
<tr>
<td><strong>X</strong></td>
<td>270</td>
</tr>
<tr>
<td><strong>270</strong></td>
<td>225</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td>225</td>
</tr>
<tr>
<td><strong>Z</strong></td>
<td>225</td>
</tr>
<tr>
<td><strong>90</strong></td>
<td><strong>225</strong></td>
</tr>
</tbody>
</table>

Example 1: If the majority of members in your group chooses “Y” and the majority of members in the other group chooses “X” then your group gets 360 points and the other group gets 90 points.

Example 2: If the majority of members in your group chooses “Z” and the majority of members in the other group chooses “Y” then your group gets 225 points and the other group gets 225 points.
APPENDIX C

Individualism/Collectivism Manipulation

Individualism manipulation:

For the next two minutes please think of what makes you different from your family and friends. What do you expect yourself to do? Please write down your thoughts.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Collectivism manipulation:

For the next two minutes please think of what you have in common with your family and friends. What do they expect you to do? Please write down your thoughts.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
APPENDIX D

Decision Motivation Assessment—SELF

Please indicate the extent to which each of the following concerns influenced your choice (X, Y or Z).

<table>
<thead>
<tr>
<th>Concern</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>I wanted to maximize my earnings</td>
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<td></td>
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<td></td>
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<tr>
<td>Not at all</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Very much</td>
</tr>
<tr>
<td>I wanted to earn more than the other person</td>
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<tr>
<td>Not at all</td>
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<td></td>
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<td></td>
<td>Very much</td>
</tr>
<tr>
<td>I wanted both persons to earn as much as possible together</td>
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<tr>
<td>Not at all</td>
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<td></td>
<td>Very much</td>
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<tr>
<td>I wanted to defend myself against the actions of the other person</td>
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<td>Not at all</td>
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<td>Very much</td>
</tr>
<tr>
<td>I wanted to maximize the joint outcomes of both persons</td>
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<tr>
<td>Not at all</td>
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<td></td>
<td>Very much</td>
</tr>
<tr>
<td>I wanted to earn as much as possible</td>
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<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>Very much</td>
</tr>
<tr>
<td>I wanted to minimize the difference between both persons in my favor</td>
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<tr>
<td>Not at all</td>
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<td></td>
<td>Very much</td>
</tr>
<tr>
<td>I wanted both persons to earn an equal amount</td>
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<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very much</td>
</tr>
</tbody>
</table>
I did not trust the other person

1 2 3 4 5 6 7
Not at all Very much

I did not want to lose

1 2 3 4 5 6 7
Not at all Very much

How confident are you in the choice that you made?

1 2 3 4 5 6 7
Not at all Very much

**Decision Motivation Assessment—OTHER**

Please respond to this questionnaire as YOU BELIEVE YOUR PARTNER WOULD COMPLETE THIS QUESTIONNAIRE. Put yourself in the place of your partner and respond to the questionnaire as you believe your partner would respond.

I wanted to maximize my earnings

1 2 3 4 5 6 7
Not at all Very much

I wanted to earn more than the other person

1 2 3 4 5 6 7
Not at all Very much

I wanted both persons to earn as much as possible together

1 2 3 4 5 6 7
Not at all Very much

I wanted to defend myself against the actions of the other person

1 2 3 4 5 6 7
Not at all Very much

I wanted to maximize the joint outcomes of both persons

1 2 3 4 5 6 7
Not at all Very much

I wanted to earn as much as possible

1 2 3 4 5 6 7
Not at all Very much
I wanted to maximize the difference between both persons in my favor
Not at all                                          Very much

I wanted both persons to earn and equal amount
Not at all                                          Very much

I did not trust the other person
Not at all                                          Very much

I did not want to lose
Not at all                                          Very much

I wanted my partner to earn as much as possible
Not at all                                          Very much

I wanted to maximize my partner's earnings
Not at all                                          Very much
What do you think is the likelihood that...

the other group will choose X?  ____________%  +

the other group will choose Z?  ____________%  +

the other group will choose Y?  ____________%  =

TOTAL:  100%
APPENDIX E

Self-Construal Scale
Interdependent items

1. I have respect for the authority figures with whom I interact
   1  2  3  4  5  6  7
   Strongly disagree    Strongly agree

2. It is important for me to maintain harmony within my group
   1  2  3  4  5  6  7
   Strongly disagree    Strongly agree

3. My happiness depends on the happiness of those around me
   1  2  3  4  5  6  7
   Strongly disagree    Strongly agree

4. I would offer my seat in a bus to my professor
   1  2  3  4  5  6  7
   Strongly disagree    Strongly agree

5. I respect people who are modest about themselves
   1  2  3  4  5  6  7
   Strongly disagree    Strongly agree

6. I will sacrifice my self-interest for the benefit of the group I am in
   1  2  3  4  5  6  7
   Strongly disagree    Strongly agree

7. I often have the feeling that my relationships with others are more important than my own accomplishments
   1  2  3  4  5  6  7
   Strongly disagree    Strongly agree

8. I should take into consideration my parents' advice when making education/career plans
   1  2  3  4  5  6  7
   Strongly disagree    Strongly agree
9. It is important to me to respect decisions made by the group
   1  2  3  4  5  6  7
   Strongly disagree                                      Strongly agree

10. I will stay in a group if they need me, even when I am not happy with the group
    1  2  3  4  5  6  7
    Strongly disagree                                      Strongly agree

11. If my brother or sister fails, I feel responsible
    1  2  3  4  5  6  7
    Strongly disagree                                      Strongly agree

12. Even when I strongly disagree with group members, I avoid an argument
    1  2  3  4  5  6  7
    Strongly disagree                                      Strongly agree

   Independent items

13. I'd rather say "No" directly, than risk being misunderstood
    1  2  3  4  5  6  7
    Strongly disagree                                      Strongly agree

14. Speaking up during a class is not a problem for me
    1  2  3  4  5  6  7
    Strongly disagree                                      Strongly agree

15. Having a lively imagination is important to me
    1  2  3  4  5  6  7
    Strongly disagree                                      Strongly agree

16. I am comfortable with being singled out for praise or rewards
    1  2  3  4  5  6  7
    Strongly disagree                                      Strongly agree

17. I am the same person at home that I am at school
    1  2  3  4  5  6  7
    Strongly disagree                                      Strongly agree

18. Being able to take care of myself is a primary concern for me
    1  2  3  4  5  6  7
    Strongly disagree                                      Strongly agree
19. I act the same way no matter who I am with
1 2 3 4 5 6 7
Strongly disagree Strongly agree

20. I feel comfortable using someone's first name soon after I meet them, even when they are much older than I am
1 2 3 4 5 6 7
Strongly disagree Strongly agree

21. I prefer to be direct and forthright when dealing with people I've just met
1 2 3 4 5 6 7
Strongly disagree Strongly agree

22. I enjoy being unique and different from others in many respects
1 2 3 4 5 6 7
Strongly disagree Strongly agree

23. My personal identity independent of others, is very important to me
1 2 3 4 5 6 7
Strongly disagree Strongly agree

24. I value being in good health above everything
1 2 3 4 5 6 7
Strongly disagree Strongly agree
APPENDIX F

Demographic Information

What is your gender?
   ____ Male
   ____ Female

Age (select one): ≤17 18 19 20 21 22 22+

What is your ethnic background? (Check one)
   ____ African American/Black
   ____ Asian or Pacific Islander
   ____ Caucasian/White
   ____ Hispanic
   ____ Other