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Role of Information Asymmetry and Situational Salience in Reducing Intergroup Bias:

The Case of Ultimatum Games

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ABSTRACT

While majority of the literature documents the preponderance of social identity related biases in favor of in-group members, this research investigates factors that may attenuate the bias. Examining intergroup bias within the realm of information availability and accessibility, this research highlights malleability of judgments and decisions as a function of social identity in both complete and incomplete information situations in the context of ultimatum games. Study 1 replicates the positive bias towards in-group members even in situations where individuals know that the counterpart is behaving unfairly. Study 2 shows that the intergroup bias is attenuated for relatively unfavorable offers in incomplete information situations. However, the intergroup bias is persistent for relatively favorable offers. Study 3 shows that making situational constraints salient also attenuates the intergroup bias for relatively favorable offers. Together, the findings identify conditions, based on information availability and accessibility, under which the intergroup bias can be corrected.

Keywords: s*ocial identity, intergroup bias, ultimatum games, bargaining, information, attributions*

With the globalization of business activities as well as the increasing mobility and diversity in the general population, it is increasingly common to find business transactions in settings that involve individuals from different countries, cultures and, in general, different social backgrounds. As the social milieu in which most exchange processes are embedded become increasingly complex, it is important to understand how social context and situational constraints influence business transactions (e.g., Chen, Mannix, & Okumura, 2003). Arguing that one of the most salient features that individuals confront in an exchange process is their counterpart's social identity, this research investigates the role of social identity and information availability in determining individuals' reactions to counterpart's behavior as well as eventual outcomes.

According to social identity theory, categorizing people into social groups leads to intergroup biases in judgments and decisions (Tajfel, 1982; Tajfel & Turner, 1986). The need to achieve and preserve positive social identities underlies the phenomenon of in-group favoritism (and out-group derogation), wherein people tend to evaluate one's own group favorably in comparison to other groups (Tajfel, 1982). The preference or affinity towards one's in-group over an out-group has been manifested in terms of attitudes, beliefs, and behavior (Turner, 1981). For example, in the context of conflict management, perceptions of common group identity have been shown to enhance concern for the needs of the other party (Rubin, Pruitt, & Kim, 1994). In contrast, perceptions of a separate group identity enhance the salience of the zero-sum nature of conflicts (Sidanius, Van Laar, Levin, & Sinclair, 2004). In sum, in-group favoritism suggests that individuals are likely to interpret and react more favorably when the counterpart is perceived to be a member of their own social group than from another social group (e.g., Brewer & Kramer, 1986; Kramer, Pommerenke, & Newton, 1993).

Although majority of the existing literature documents the preponderance of in-group favoritism (and out-group derogation), the literature on identifying conditions where the intergroup bias is attenuated is relatively sparse. The few studies examining factors that may reduce the intergroup bias rely primarily on altering individuals' conceptual representations of group membership (e.g., Crisp & Beck, 2005; Gaertner, Mann, Murrell, & Dovidio, 1989; Ensari & Miller, 2002). For example, inducing individuals of different groups to recategorize themselves as belonging to a common more inclusive group reduces intergroup bias (Gaertner & Dovidio, 2000; Gaertner et al., 1989). Similarly, inducing individuals to think of characteristics shared between the in-group and out-group reduced intergroup favoritism, more so for those who identified with their in-group weakly than strongly (Crisp & Beck, 2005). Ensari and Miller (2002) showed that self-disclosure or revealing significant aspects of the self to another, along with typicality of group membership and salience of intergroup differences, reduced bias towards new out-group members. The current research adds to this growing literature by examining whether situational factors such as information availability and salience of situational constraints represent restricting conditions for the display of in-group favoritism.

Specifically, the present research investigates intergroup bias (i.e., in-group favoritism) and the factors that may reduce the bias in the context of an ultimatum game. In a typical ultimatum game, one agent (proposer) makes an offer to another agent (responder) that divides a specified sum of money between the two agents (Camerer & Thaler, 1995). The responder can then either accept or reject the offer. If the offer is accepted, the sum of money is divided as proposed and the game ends. If the offer is rejected, both agents receive nothing and the game ends. An ultimatum game provides the appropriate context as it is not only a model for basic transactions but also represents a building block for more complex and more descriptive types of

bargaining (Camerer & Thaler, 1995). Ultimatum games represent the end state of continuous

bargaining as well as the simplest form of a take-it-or-leave-it transaction. Attesting to its

importance as a model of strategic behavior, ultimatum games have been widely used to

document behavioral regularities that were interpreted to imply that fairness considerations often

override strategic considerations (e.g., Straub & Murnighan, 1995). Importantly, for the purposes

of this research, ultimatum games offer a simple structure that allows isolation of the factors of

interest and examine individuals' behavioral reactions to their counterpart's behavior based on

counterpart's social identity, information availability, and salience of situational constraints.

Several aspects of the present research are noteworthy. First, much of the prior research

on understanding intergroup bias has focused predominantly on attitudinal and perceptual

measures. The ultimatum bargaining context used in the present investigation allows us to

examine the reduction of intergroup bias on a behavioral measure (i.e., accept or reject an offer

in an ultimatum game), in addition to attitudinal measures. Second, the present paper, after

confirming the preponderance of the intergroup bias, investigates attenuating conditions due to

two situational factors: amount of information available and saliency of situational constraints.

More generally, these two factors correspond to conditions where all information is not present

or equally accessible. Understanding the role of information in the formation of identity biases is

of interest because, although the importance of social categories in the formation of norms under

conditions of ambiguity is recognized (e.g., Fiske & Taylor, 1991), relatively little research

examines the role of social identity in incomplete information situations.

Previous research has tended to focus more on complete information situations where

both parties in an exchange process have access to clear and objective referents (c.f. Croson,

1996; Huck, 1999; van den Bos, Lind, Vermunt, & Wilke, 1997; White & Neale, 1994). Readily

available referents allow individuals to assess the fairness of potential outcomes with relative

ease. However, many exchange settings are complex, characterized by uncertainty and

information asymmetry (e.g., Pinkley, 1995; Srivastava, 2001). Although previous research has

examined the effect of social identity along with factors that affect perceived risk (e.g., Brewer &

Kramer, 1986), the present research is more closely related to situations of uncertainty where it is

difficult to assess fairness of potential outcomes (e.g., van den Bos et al., 1997; van den Bos &

Lind, 2002). Furthermore, unlike previous research which argues that people use the fairness of

the procedure to assess fairness of outcomes (e.g., van den Bos et al., 1997), the present research

holds the process constant and examines how the counterpart's social identity may influence

perceptions of fairness and thereby outcomes when fairness can be determined with certainty

(i.e., complete information) versus uncertainty (i.e., incomplete information). Facing information

asymmetry, individuals may form different expectations about the mutual gains from trade as

well as the attractiveness of potential outcomes (White & Neale, 1994). The present research

thus not only adds to the few studies on the role of social identity in complete information

situations but also extends the literature by examining how a counterpart's social identity affects

expectations of distributive justice and, thus, results in a different set of outcomes in incomplete

information situations (c.f. Kramer, Shah, & Woerner, 1995). Examining both complete and

incomplete information situations allows us to explore conditions under which the intergroup

bias (in-group favoritism or out-group derogation) can be bounded.

The present research also highlights the importance of attribution processes in the

presence of uncertainty. Attribution theory suggests that individuals seek to meaningfully explain

others' behavior in terms of its underlying causes (Fiske & Taylor, 1991) and this inclination is

particularly strong in information poor conditions (Kelley, 1972). An aspect of attribution theory

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that is key in the context of ultimatum bargaining is an individuals' perceptions of the level of

self-interest and competitiveness that underlie counterparts' behavior (Morris, Larrick, & Su,

1999). In the absence of objective referents, individuals' perceptions and behavior are likely to

be more susceptible to cues (Kelley, 1972), such as the counterpart's social identity. For

example, the same positive action may be attributed to a competitive dispositional (internal) trait

rather than to situational (external) factors more often when the counterpart is from an out-group

than an in-group. Since the overattribution bias is more likely to occur when situational

constraints are not salient, the present research examines whether it is possible to mitigate or

even eliminate the intergroup bias when the context allows for situational constraints to be made

salient (Nisbett & Ross, 1980). In sum, further understanding of the interplay between these two

situational factors and the social cues embedded in the decision-making environment provides a

fruitful framework for relevant theoretical advancement using the case of ultimatum games.

ROLE OF COUNTERPART'S SOCIAL IDENTITY

Extensive research shows that individuals are active in understanding their social world

and that social cues play a critical role in shaping expectations, attributions, and behavior (e.g.,

Fiske & Taylor, 1991). Arguably, one of the first features individuals confront in a bargaining

transaction is the social identity of a counterpart. Accordingly, a central premise of this research

is that the contextual or social features of the transaction, such as characteristics of the

bargaining counterpart, may influence individuals' strategic decision making and behavior

(Chen, Mannix, & Okumura, 2003; Kramer, Pommerenke, & Newton, 1993).

Social identity theory suggests that membership in a social group affects judgment and decision making in both interpersonal and intergroup contexts (Tajfel & Turner, 1979). Social identity is defined as part of an individual's self-concept that is derived from being a member of a social group including the value and emotional significance linked to that membership (Tajfel, 1981). As such, one's nationality, ethnicity, gender, occupation, or peer group helps in defining one's social identity, who one is, and how one perceives others (Fiske & Taylor, 1991; Tajfel, 1981). Social identity has implications for how individuals from either one's group or from other groups are perceived, and how one interacts with in-group and out-group members (Tajfel, 1981). The central finding regarding the role of social identity in conflict resolution is that an action by a member of one's own group is evaluated quite differently from an identical action by a member of another social group (e.g., Brewer & Kramer, 1993; Kramer, Pommerenke, & Newton, 1993). In particular, in-group members are expected to practice a certain amount of diligence, monitor their own contribution to the group and be more cooperative than out-group members (LeBoeuf & Shafir, 2003) since they are expected to care about fulfilling not only instrumental goals but also relational goals in their interactions with members of their own group (De Cremer & Van Vugt, 2002).

In the context of ultimatum games, "reciprocity expectations" between proposers and responders play an important role in shaping bargaining behavior (Camerer & Thaler, 1995; Güth, 1995). The standard economic prediction is that since any amount of money is better than nothing, a rational proposer should offer (and the responder should accept) the smallest unit of currency. Contrary to the normative prediction, proposers typically offer 40% of the total amount and responders typically reject offers that represent less than 25% of the total amount (Camerer & Thaler, 1995). These systematic deviations from the normative prediction have been attributed

to bargainers' assessment of what is expected as fair or "reciprocable" counterpart's behavior. Arguably, individuals' prior expectations and fairness perceptions are likely to be affected by certain features such as the transaction counterpart's social identity. Importantly, the effect of social identity and the attributions that are triggered may depend upon the information available to assess counterpart's behavior. We thus differentiate between complete and incomplete information conditions.

Complete Information

In complete information ultimatum games, the outcomes can be easily evaluated because both proposers and responders have knowledge of the total amount available for division. The obvious determinant of whether or not a responder accepts an offer is the size of the offer and the relative share of the total amount it represents (Croson, 1996). An offer representing an equal share of the available amount may be perceived similarly regardless of whether the offer comes from an in-group or out-group proposer. However, the proposer's social identity is likely to play a more dominant role when an offer is clearly unfair. Since unfair offers, representing an unequal share of the total amount, are more likely to trigger dissonance and conflict, the social identity of a counterpart may loom large (Brewer, 1979). Research suggests two competing predictions regarding how a responder is likely to react to an unfair offer depending on whether the proposer is an in-group or out-group member (Kramer, Shah, & Woerner, 1995).

The first prediction, termed the intergroup bias hypothesis, suggests that responders will react more positively to offers from in-group members than out-group members (or negatively to offers from out-group than in-group members). The rationale is that a fundamental mode of social categorization is "us" versus "them" where "us" is evaluated more favorably than "them"

under most circumstances (Fiske & Taylor, 1991). The affective and evaluative responses that this categorization evokes are prone to reflect in-group favoritism (e.g., Brewer & Kramer, 1986; Kramer, Pommerenke, & Newton, 1993). In general, out-group members are perceived as less honest, less trustworthy, and less cooperative than in-group members. Accordingly, individuals are likely to react more positively (negatively) to unfair offers coming from an in-group (out-group) proposer relative to an out-group (in-group) proposer.

H1:   The intergroup bias hypothesis predicts that in ultimatum games with complete

information, acceptance rates and perceptions of fairness will be higher when an unfair

offer comes from an in-group proposer than an out-group proposer.

The second prediction, termed the expectancy violation hypothesis, suggests that responders will react more negatively to unfair offers when they come from in-group rather than out-group proposers. The rationale is that individuals expect in-group members to behave in a more cooperative and trustworthy manner when interacting with members of their group. Individuals from the same social group share similar values and norms and this shared sense of identity suggests that unfair offers are not expected from in-group members (Brewer, 1979; Kramer & Brewer, 1984; Kramer, Shah, & Woerner, 1995). The extent to which in-group members are expected to be trustworthy and cooperative, responders are likely to react more negatively to an unfair offer when it comes from an in-group versus out-group proposer.

H2:   The expectation violation hypothesis predicts that in ultimatum games with complete

information, acceptance rates and perceptions of fairness will be lower when an unfair

offer comes from an in-group proposer relative to an out-group proposer.

Incomplete Information

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Consider a one-sided incomplete information situation where the responder is uncertain but the proposer knows the total amount available for division. Prior findings suggest that proposers tend to offer less when responders do not have full information about the total amount available since it is difficult to assess fairness of the offer (Güth, Huck, & Ockenfels, 1996). Furthermore, proposers become more strategic as they only have to appear fair but not actually be fair (Schmitt, 2004). On the other hand, lacking objective referents, responders become primarily concerned with the relative share or proportion of the total amount that a proposer's offer represents (Croson, 1996).

Incomplete information triggers attribution processes such that responders seek to causally explain a proposer's behavior (i.e., the offer made). As such, responders may use the proposer's offer to infer the total amount available for division and, thereby, the proportion of the total amount that a specific offer represents (Srivastava, 2001). Furthermore, attributions and associated inferences are also likely to follow an intergroup bias depending on whether the proposer is an in-group versus out-group member (e.g., Taylor & Jaggi, 1974). That is, research suggests that people tend to attribute behavior in ways that reflects positively on the in-group but negatively on the out-group (Hewstone, 1990; Islam & Hewstone, 1993). We examine responders' assessments and reactions to two different proposer offers.

Consider an offer of $12.50 when the total amount available for division is $25. Although an offer of $12.50 is objectively fair in complete information situations when both parties know the total amount available, fairness assessments are ambiguous in an incomplete information situation where a responder only knows that the total amount could assume any whole number between $10 and $40 with equal probability (uniform distribution). Since $25 represents the mean of the distribution, the likelihood that $12.50 represents a favorable (equal or more than

equal share) or an unfavorable (unequal share) offer from the responders' perspective is 50% in both cases. In other words, given the uncertainty about the total amount, an offer of $12.50 is likely to lead to ambiguous inferences regarding the relative share of the total amount and thereby affect the assessment of its fairness. In a situation where objective referents are not available, the persistent in-group favoritism (e.g., Brewer & Kramer, 1993; Hogg & Turner, 1985) suggests that perceptions of fairness and acceptance rates are likely to be higher when the offer of $12.50 comes from an in-group proposer than an out-group proposer.

Now consider an offer of $7.50 when the total amount available for division is $25. Since the responder only knows that the total amount available could be any whole number between $10 and $40 with equal probability (uniform distribution), the likelihood that the offer represents an unfavorable (unequal) division is high leading to the belief that the counterpart could be trying to take advantage of the information asymmetry by offering a relatively small portion of the total amount. Although research shows that there is a natural tendency to over-attribute unfavorable behavior to personality traits such as level of competitiveness (Morris, Larrick, & Su, 1999), it is possible that, as in the complete information situation, responders will continue giving the benefit of the doubt to in-group but not to out-group proposers. Alternatively, even loyal in-group individuals may be somewhat concerned about fairness from members of their group and maintaining a sense of personal identity and self-esteem within the group (Wilder, 1986). An unfavorable offer when the responder has incomplete information may be perceived as an attempt by the in-group proposer to take undue advantage of the situation at the expense of one's own vulnerable group member. This reasoning suggests a likely attenuation of the intergroup bias such that perceptions of fairness and acceptance rates may not differ when an unfavorable offer comes from an in-group or an out-group proposer.

At the extreme, it is possible that the in-group bias may be negative. Some prior work suggests that while favorable in-group members are evaluated more positively than comparable out-group members, deviant in-group members are evaluated more negatively than similar out-group members (Biernat, Vescio, & Billings, 1999; Marques, Yzerbyt, & Leyens, 1988). The reasoning is that people are motivated to view their in-group as favorably distinct to the out-group. Good in-group members contribute positively to the overall image of the in-group and their evaluation relative to comparable out-group members. In contrast, bad in-group members or "black sheep" contribute negatively to the image of the in-group and the evaluative bias in favor of the in-group is manifested in the evaluative derogation of those members relative to comparable out-group members. The literature considers this "black sheep" effect a sophisticated form of in-group favoritism. As such, at the extreme, acceptance rates could even be lower and perceptions of counterpart competitiveness could be higher in incomplete information situations when the $7.50 offer comes from an in-group versus out-group proposer.

H3:   In ultimatum games with incomplete information, acceptance rates and perceptions of fairness will still be higher, and perceptions of counterpart competitiveness will be lower, when a relatively favorable offer comes from an in-group proposer than from an out-group proposer. The difference will attenuate (or even reverse) when the offer is relatively unfavorable.

Situational Saliency

Although we argue that the intergroup bias may be attenuated when the offer is relatively unfavorable in incomplete information situations, the intergroup bias or in-group favoritism is still manifested when the offer is relatively favorable. Given the tendency to seek causal

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explanation for counterpart's behavior, it is likely that the fundamental attribution error occurs

because explanations based on personality dispositions are the first plausible ones to come to

mind as they are more cognitively available. Moreover, people do not exert the cognitive effort

to consider less obvious situational explanations (Hewstone, 1990; Nisbett & Ross, 1980). We

propose that, to the extent that even an offer of $12.50 is attributed to the proposer's personality

disposition such as competitiveness for out-group versus in-group proposers, it is possible that

the bias could be mitigated by making situational constraints salient (Nisbett & Ross, 1980).

Although there are no referents to assess one's attributions in incomplete information

situations, individuals who expend the cognitive effort to think about situational constraints may

be less likely to overweight inferred personality traits in their judgments (Corneille, Leyens, &

Yzerbyt, 1999). Said differently, the extent to which situational constraints are made salient,

responders are less likely to attribute a relatively high offer of $12.50 to a proposer's

competitiveness, particularly for out-group members, and more likely to take into account

possible situational constraints, such as the fact that the total amount available may be smaller.

Thus, estimates of the percentage of the total amount that the $12.50 offer represents should be

higher for out-group proposers when the situational constraints are salient. In sum, the intergroup

bias is likely to be attenuated, even for favorable offers, when possible situational constraints,

such as the amount available for division, are made salient.

H4:   In ultimatum games with incomplete information, when the situational constraints are not

        salient, acceptance rates and perceptions of fairness are higher when a relatively

        favorable offer comes from an in-group versus an out-group proposer. The difference will

        attenuate when the situational constraints are made salient.

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STUDY 1

Method

Participants and procedure. One hundred and twenty-six undergraduate business students were randomly assigned to a 2 (proposer's social identity: in-group and out-group) x 2 (offer: $7.50 and $12.50) between-subjects design. Participants were told that they would be participating in a proposer-responder game with another individual.

As participants entered the session, they were randomly divided into two groups. The study was conducted in two adjacent rooms, each group being seated in a different room. All participants were required to read the instructions, which described the proposer-responder game. They read that in the proposer-responder game, two individuals, the proposer and the responder have to agree on how to divide a given amount of money between them (say $10). The proposer starts by making an offer of $X, which is less than or equal to $10, to the responder in any way s/he chooses to do so. The responder can then either accept the offer, in which case s/he will receive $X and the proposer will get to keep the balance, $(10 – X), or the responder can reject the offer, whereupon both receive nothing. The instructions emphasized that the proposer can only make one offer and the offer cannot be withdrawn while the responder can accept or reject the offer. Playing in a complete information situation, participants were told that both parties know the total amount to be divided by the proposer was $25.

Participants were instructed that they would be randomly paired with another student who was not in the room and the identities of all individuals would remain anonymous before, during, and after the study. Participants were assigned a number which they were led to believe would be used to match them with another individual. They were told that students had been randomly

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assigned the role of the proposer or responder. Based on a coin toss, students in their room had been assigned the role of the responder.

Participants were given 10 minutes to read the instructions and seek clarification, if required. After ensuring that everyone understood the proposer-responder game and the task, the numbers assigned to participants at the beginning were called out in random order. Participants were then handed a sheet with their respective offers, purportedly from another student playing the role of the proposer. The instructions emphasized that they could either accept or reject the offer. They had to first accept or reject the offer on the same sheet that contained the assigned proposer's offer. They were then asked to respond to several other measures.

No communication was allowed through the duration of the study that took about 30 minutes. After completion, participants were thoroughly debriefed. The debriefing revealed that everyone believed the cover story that they were actually playing the proposer-responder game with another individual who had been randomly assigned the role of the proposer.

Experimental variables. The two experimental variables were embedded in the instructions. Social identity was manipulated at two levels. In the in-group condition, participants were told that they were randomly paired with another student from their own class. They were told that students in the adjacent room had all been randomly assigned to play the role of a proposer. To enhance the credibility of the cover story, about 10 minutes into the study, an individual was sent into each of the two rooms with a large brown envelope, purportedly containing the offers, which proposers in the other room had just made. In the out-group condition, participants were told that they would be randomly paired with another student from a historically competing university located in the same region. They were told that their counterpart was randomly chosen to play the role of the proposer and that they had been chosen

to play the role of the responder. To enhance the credibility of the cover story, the offers were

packaged in a sealed Federal Express envelope that had supposedly arrived from the rival

university. Further, when the offers were handed out, a letterhead with the rival university's logo

was in plain view of the participants. In both cases, social identity was common knowledge as it

was announced that the proposer knew the responder's social identity as well.

Offer size was manipulated at two levels. In the favorable offer condition, the proposer's

offer was $12.50, representing an equal share of the total amount available for division. In the

unfavorable offer condition, the offer was $7.50, representing an unequal share of the total

amount. The offers were presented on a separate sheet of paper and were handwritten to be

consistent with the cover story.

Dependent measures. After receiving the offer, participants responded to several

dependent measures. First, they indicated their decision to accept or reject the offer in the same

sheet of paper that contained the offer. They were told that this sheet would go back to the

proposer (these were collected separately). Second, perceptions of offer fairness were measured

by asking "To what extent was the proposer's offer fair?" (1 = Very unfair; 7 = Very fair). In

addition to fairness perceptions, responders' emotional reactions were measured by averaging

responses to two items ($r = .77$). The two items were "To what extent were you happy with the

proposer's offer?" (1 = Very unhappy; 7 = Very happy) and "To what extent were you irritated

with the proposer's offer?" (1 = Not at all irritated; 7 = Very irritated, reverse scaled).

Social identity pretest. A pretest with 66 undergraduate business students tested the

efficacy of the social identity manipulation. None of these students participated in the main

study. Participants were asked to read a description of the proposer-responder game but no

specific offer was provided. After they had responded to some questions regarding the

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comprehension of the game, they were asked to provide evaluations of students in their class and

students at the rival university used in the main study. In particular, they were asked "In general,

how would you evaluate a student from your introductory marketing class at (NAME OF THEIR

SCHOOL)" (1 = Very unfavorably; 7 = Very favorably) and "How much do you have in

common with other students from your introductory marketing class at (NAME OF THEIR

SCHOOL)?" (1 = Not at all; 7 = A lot). They were asked identical questions about students from

a similar introductory marketing class at the rival school.

Results show that participants rated students from their own school significantly more

favorably than students from the rival school. Specifically, evaluations of students from the same

class in their school ($M = 5.03$, $SD = 1.23$) were significantly higher than evaluations of students

from the rival school ($M = 3.76$, $SD = 1.33$), mean difference = 1.27, $SE = .32$, $t(65) = 4.37$, $p < .$

001 (95% CI = -1.90, -.63) and participants felt that they had more in common with other

students in their school ($M = 4.72$, $SD = 1.46$) compared to students of the same class from the

rival school ($M = 3.35$, $SD = 1.20$), mean difference = 1.37, $SE = .33$, $t(65) = 5.67$, $p < .$ 001

(95% CI = -2.02, -.71). These data indicate that social identity was successfully manipulated by

altering the school of the counterpart in ultimatum bargaining.

Results and Discussion

Table 1 provides a summary of the dependent measures as a function of the experimental

variables. Acceptance rate was analyzed using a log-linear model as a function of the

manipulated factors and their interactions. In general, acceptance rates were significantly

affected by offer size ($\chi^2(1) = 34.66$, $p < .001$), social identity ($\chi^2(1) = 4.27$, $p < .05$), as well as

the interaction between offer size and social identity ($\chi^2(1) = 3.61$, $p < .06$). Analyzing the

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interaction further, in the $12.50 condition, where the offer represented an equal division of the total amount available, there was no significant difference in acceptance rates across in-group (91.7%) and out-group proposers (81%, $\chi^2(1) = 1.64$, $p > .10$). However, in the $7.50 offer condition, consistent with the intergroup bias hypothesis (H1), but in contrast to the expectation violation hypothesis (H2), the acceptance rates were significantly higher when the proposers were in-group (41.7%) versus out-group proposers (23.1%, $\chi^2(1) = 2.69$, $p < .05$).

[Insert Table 1 here]

Consistent with their behavior, an ANOVA on participants' assessment of offer fairness revealed a significant effect of offer size ($F(1, 122) = 170.55$, $p < .001$, $\eta^2 = .57$), social identity ($F(1, 122) = 6.14$, $p < .01$, $\eta^2 = .06$), and the interaction between offer size and social identity ($F(1, 122) = 5.16$, $p < .05$, $\eta^2 = .04$). Participants perceived the $7.50 offer to be less fair when the offer was from an out-group proposer ($M = 2.19$, $SD = 1.74$) than an in-group proposer ($M = 3.08$, $SD = 1.56$), $F(1, 74) = 10.95$, $p < .01$, $\eta^2 = .13$).

The data on emotional reactions corroborate the findings. An ANOVA revealed a significant effect of offer size ($F(1, 122) = 60.95$, $p < .001$, $\eta^2 = .32$), social identity ($F(1, 122) = 2.54$, $p < .10$, $\eta^2 = .02$), and the interaction between offer size and social identity ($F(1, 122) = 3.49$, $p < .60$, $\eta^2 = .03$). Responders were less happy and more irritated when a $7.50 offer came from an out-group proposer ($M = 2.79$, $SD = 1.20$) than an in-group proposer ($M = 3.73$, $SD = 1.70$), $F(1, 74) = 6.08$, $p < .01$, $\eta^2 = .05$). This variable was significantly correlated with fairness perceptions ($r = .85$).

Study 1 showed that a counterpart's social identity affects outcomes when both parties have complete information. While previous research suggests that responders typically reject offers when there is no doubt that the offer is unfair (Huck, 1999), our results qualify this

finding. Consistent with previous research (e.g., Kramer, Shah, & Woerner, 1995), our findings

suggest that even when the offer is clearly unfair, the intergroup bias exists such that individuals

react more positively (negatively) when the offer comes from an in-group (out-group) member.

In other words, in-group favoritism is manifested such that individuals' tolerance for inequity is

higher when dealing with an in-group counterpart than an out-group counterpart.

Given the persistent intergroup bias in the context of a complete information ultimatum

game, study 2 explores whether the intergroup bias can be reduced in an incomplete information

situation where individuals are likely to behave differently as there are no objective referents

against which to judge fairness of potential outcomes. In such situations, the attributions and

inferences made about the cause underlying a counterpart's offer assume particular significance.

STUDY 2

Method

Participants and procedure. One hundred and twenty-nine undergraduate business

students participated in this study. Participants were randomly assigned to a 2 (proposer's social

identity: in-group and out-group) x 2 (offer: $7.50 and $12.50) between-subjects design. The

experimental variables were manipulated exactly as in study 1 as were the procedures, except

that study 2 used an incomplete information situation. Participants were told that the amount

given to the proposer to divide would be determined as follows. The instructions mentioned that

the experimenter would randomly draw a ticket from a jar that has tickets numbered from 10 to

40. The number on the ticket that the experimenter randomly picks will be the amount that the

proposer has to divide. The proposer will know the exact amount to be divided but the responder

will only know that the amount could be any whole number between 10 and 40 with equal

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probability. They were also told that both parties know that the proposer knows the exact amount

to be divided while the responder only knows that the amount could assume any number between

10 and 40 with equal probability.

Dependent measures. As in study 1, participants were asked to respond to several

dependent measures. First, they accepted or rejected the offer. Second, perceptions of offer

fairness and responders' emotional reactions were measured using 7-point items. Third,

participants were asked to evaluate the person playing the role of the proposer following Morris,

Larrick, and Su (1999) approach. They were asked "In your opinion, the person playing the role

of the proposer most likely is:" (1 = Competitive/Untrustworthy/Not at all considerate; 7 =

Cooperative/Trustworthy/Considerate). An average of these three 7-point items was used to

measure counterpart competitiveness (Cronbach's α = .88). These three variables were

significantly correlated: fairness and emotional reactions (r = .64), fairness and competitiveness

(r = .61), and emotional reactions with competitiveness (r = .58).

Last, participants were asked to indicate how close and how favorable they felt about

other students in their introductory marketing course in their school compared to students in a

similar class at a rival school. Participants felt closer to and more favorable towards students in

their own school relative to students in the rival school (both p's < .001). Along with the pretest

prior to study 1, this result shows that social identity was successfully manipulated.

Offer pretest. Note that in an incomplete information context, we argued that an offer of

$12.50 and $7.50 are perceived respectively as relatively favorable and unfavorable. A pretest

conducted with 90 undergraduate business students validated this assumption. None of the

participants in the pretest participated in the main study. Participants were randomly assigned to

a 2 (social identity: in-group and out-group) x 2 (offer: $12.50 and $7.50) between-subjects

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design. The experimental manipulations and procedures used in the pretest were identical to

those used in the main study. After ensuring that participants understood the proposer-responder

game, they received their respective offers and were asked to answer several dependent

measures. First, participants were asked "In your estimate, how likely is it that the offer you

received is half of the total amount available for division?" (1 = Very unlikely; 9 = Very likely).

As expected, perceived likelihood of the offer being half of the total amount was higher in the

$12.50 condition ($M = 4.05$, $SD = 2.18$) than in the $7.50 condition ($M = 3.02$, $SD = 2.00$), $F(1,$

$87) = 5.49$, $p < .02$, $\eta^2 = .06$. Second, subjects were asked "How likely it is that the offer is less

than half of the total amount available for division?" (1 = Very unlikely; 9 = Very likely) and

"How certain are you about your assessment above?" (1 = Very certain; 9 = Very uncertain).

Participants perceived the likelihood of the offer to be less than half of the total to be

significantly higher in the $7.50 condition ($M = 7.34$, $SD = 1.58$) relative to the $12.50 condition

($M = 6.40$, $SD = 1.96$), $F(1, 87) = 6.25$, $p < .01$, $\eta^2 = .07$. Participants were also more certain of

their assessment that the offer is less than half of the total amount in the $7.50 ($M = 3.52$, $SD =$

2.40) versus the $12.50 condition ($M = 5.03$, $SD = 2.46$), $F(1, 87) = 10.97$, $p < .001$, $\eta^2 = .10$.

Social identity did not significantly affect any of these dependent measures, interaction terms

were also non-significant (all p's > .15).

Results

Table 2 provides the means of the dependent measures for study 2.

[Insert Table 2 Here]

Consistent with the well documented intergroup bias, hypothesis 3 states that a relatively

favorable offer would be more favorably received when coming from an in-group proposer than

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an out-group proposer. However, the intergroup bias will be attenuated when individuals receive

an unfavorable offer in what they consider a vulnerable incomplete information situation. A log-

linear analysis of the acceptance rates revealed significant effect of offer size ($\chi^2(1) = 4.60$, $p <$

.05), a non-significant effect of social identity ($\chi^2(1) = .01$, $p > .70$), but a significant interaction

between offer size and social identity ($\chi^2(1) = 6.011$, $p < .01$). A planned contrast showed that

although directionally consistent with the black sheep effect, the acceptance rates did not differ

significantly when the $7.50 offer came from an in-group proposer (33.3%) than an out-group

proposer (45%, $\chi^2(1) = 2.01$, $p > .10$). A 2x2 ANOVA on perceptions of fairness revealed a

significant interaction between offer size and social identity ($F(1, 125) = 8.62$, $p < .01$, $\eta^2 = .07$).

The planned contrast revealed that fairness perceptions were not significantly different when the

$7.50 offer came from an in-group ($M = 2.87$, $SD = 1.20$) than an out-group proposer ($M = 3.80$,

$SD = 1.53$, $F(1, 62) = 1.98$, $p > .10$, $\eta^2 = .03$). Another ANOVA on emotional reactions revealed

a significant interaction between offer size and social identity ($F(1, 125) = 7.10$, $p < .01$, $\eta^2 =$

.06). The planned contrast revealed that emotional reactions (positive affect) to the $7.50 offer

were marginally lower when the offer came from an in-group ($M = 2.87$, $SD = 1.20$) than an out-

group proposer ($M = 3.65$, $SD = 1.26$, $F(1, 62) = 2.73$, $p < .10$, $\eta^2 = .04$). Finally, an ANOVA on

perceptions of proposer competitiveness revealed a similar significant interaction between offer

size and social identity ($F(1, 125) = 9.65$, $p < .01$, $\eta^2 = .08$). The planned contrast revealed that

proposers were perceived to be more competitive when the $7.50 offer came from an in-group

($M = 4.07$, $SD = .61$) than an out-group proposer ($M = 2.57$, $SD = .73$, $F(1, 62) = 3.62$, $p < .06$,

$\eta^2 = .06$).

Although acceptance rates did not reach significance, the attitudinal and inferential

measures suggest that the bias towards in-group members can be attenuated (or even reversed)

under certain conditions. Consistent with hypothesis 3, the findings support that the combination of incomplete information and relatively low offer indeed attenuates the intergroup bias observed in the complete information situation in study 1.

On the other hand, acceptance rates were higher when the $12.50 offer came from in-group proposers (78.6%) than out-group proposers (56.2%, $\chi2$ (1) = 4.09, p < .05). Perceptions of fairness were significantly higher when the $12.50 offer came from in-group proposers than out-group proposers (M = 4.43, SD = 1.20 and M = 3.63, SD = 1.18, $F(1, 63)$ = 3.17, p < .03, η^2 = .09) and emotional reactions to the offer were marginally higher in the in-group versus the out-group conditions (M = 3.71, SD = 1.28 and M = 3.25, SD = 1.38, $F(1, 63)$ = 2.05, p < .07, η^2 = .07). However, although directionally consistent, perceptions of opponents' competitiveness were not reliably lower (M = 4.00, SD = .49 and M = 3.67, SD = .62, $F(1, 63)$ = .70, p > .40). These data provide support for the contention that for relatively favorable offers, that are ambiguous with respect to the relative proportion of the total amount, individuals are still likely to give the benefit of the doubt to in-group counterparts.

Discussion

Study 2 finds that the intergroup bias is attenuated (and in some measures even reversed) as members of one's group are evaluated more negatively when the offer is apparently unfavorable. This pattern of results, at the extreme, could display the "black sheep" effect where an undesirable action by an in-group member is judged more severely than an identical action by an out-group member. The result is in contrast to study 1 where the unfair offer of $7.50 elicited more positive reaction when the proposer was an in-group member than an out-group member. We argue that the role of expectations may be more pronounced in an incomplete information

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situation where responders are clearly vulnerable to exploitative behavior. Individuals may

expect in-group counterparts to behave in a more cooperative and trustworthy manner

particularly when responders facing uncertainty are in a weak and vulnerable position. Given this

expectation, an apparent unfavorable offer may be perceived as an attempt by an in-group

counterpart to take advantage of their superior position even at the expense of one of their own.

Consistent with this reasoning, the relatively low offer of $7.50 was judged as less positive and

the counterpart was perceived to be more competitive when the proposer was an in-group

member than an out-group member.

To determine if responders' expectations were indeed different for an in-group proposer

based on information availability, we measured expectations of 102 undergraduate students who

read the ultimatum bargaining scenario used in study 1 (complete information) and study 2

(incomplete information). Although all participants were in the in-group condition, half of them

were randomly assigned to the complete information condition whereas the other half were

assigned to the incomplete information condition. After reading the scenario carefully, they were

asked three questions: "How likely is it that the Proposer will offer you half of the total amount

available for division," "How likely is it that the Proposer will take advantage of you" (1 = Very

unlikely; 7 = Very likely), "I would be more likely to tolerate selfish behavior from a fellow

classmate" (1 = Not at all; 7 = Very much). The perceived likelihood of receiving half of the

total amount was higher in the complete information ($M = 4.46$, $SD = 1.79$) relative to the

incomplete information condition ($M = 3.71$, $SD = 1.61$; $F(1, 98) = 4.14$ p < .05, $\eta^2 = .05$). The

likelihood that the proposer would take advantage of the situation was marginally lower in the

complete information ($M = 4.88$, $SD = 1.20$) than in the incomplete information condition ($M =$

5.35, $SD = 1.61$; $F(1, 98) = 2.32$, p < .10, $\eta^2 = .03$). Finally, the extent to which they would be

likely to tolerate selfish behavior from an in-group member was higher in the complete

information condition ($M = 5.13$, $SD = 1.67$) than in the incomplete information ($M = 4.58$, $SD = 1.52$; $F(1, 98) = 3.51$, $p < .06$, $\eta^2 = .04$). These data provide support for our reasoning that

responders react more negatively to an apparent low offer from an in-group proposer because

they are more critical of members of one's own group who are likely taking advantage of their

superior position.

In sum, although study 1 suggests that individuals are generally more tolerant of unfair

behavior coming from an in-group counterpart, study 2 suggests that there are limits to their

tolerance. Since responders expect in-group members to look after their group counterparts when

they are in a weak position, they react more negatively towards them when caught in an apparent

attempt to take advantage of a vulnerable position. However, while the intergroup bias is

attenuated in the $7.50 offer condition, individuals still exhibited a positive bias towards in-

group counterparts in the $12.50 offer condition. A final question to explore is whether the

negative bias toward an out-group counterpart can also be attenuated in cases like this where the

counterpart could be acting in a fair and equitable manner. Study 3 addresses this issue. It also

explores a different dimension of information asymmetry: saliency of available information.

STUDY 3

Method

Participants and procedure. Eighty five undergraduate business students participated in

an ultimatum game where they were randomly assigned to a 2 (proposer's social identity: in-

group and out-group) x 2 (situational constraint: salient and not salient) between-subjects design.

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All offers were $12.50. The procedures used were identical to those in study 2. Social identity

was also manipulated as in studies 1 and 2. Saliency of situational constraints was manipulated at

two levels. In order to make situational constraints salient, just after receiving the offer,

participants were asked to write down the possible reasons for the proposer's offer and estimate

the percentage of the total amount that the offer represented. Only after completing this task were

participants asked to accept or reject the offer. When situational constraints were not made

salient, participants accepted or rejected the offer after receiving it, responded to all dependent

measures and, then, estimated the percentage of the total amount that the offer represented. The

rationale behind this manipulation is that, by having participants write the reasons for the offer, it

is more likely that they would recognize that the total amount available may be playing a

significant role in their counterpart's decision and that an offer of $12.50 could be fairly

favorable. The other dependent measures were identical to those used in study 2. The three

variables (fairness, emotional reactions and counterpart competitiveness) were significantly

correlated between each other (all r's > .55).

Results

　　　　　Table 3 provides the means of dependent measures of study 3.

　　　　　　　　　　　[Insert Table 3 Here]

　　　　Hypothesis 4 suggests a two-way interaction between saliency of situational constraints

and proposer social identity. As predicted, the two-way interaction had a significant effect on

acceptance rates (χ^2 (2, N = 84) = 5.47, p < .01), fairness perceptions ($F(1, 84)$ = 2.64, p < .10; η^2

= .15), emotional reactions to the offer ($F(1, 84)$ = 7.09, p < .01, η^2 = .14) and estimates of the

percentage of the total amount that the offer represents ($F(1, 84)$ = 6.33, p < .01, η^2 = .06).

Specifically, when the situational constraint was not salient, acceptance rates were higher (83.3%

and 53.9%; χ^2 (1, N = 49) = 4.66, $p < .02$), perceptions of fairness were higher ($M = 4.38$, $SD =$

1.38 and $M = 3.19$, $SD = 1.13$; $F(1, 48) = 12.02$, $p < . 01$, $\eta^2 = .19$), emotional reactions to the

offer were higher ($M = 4.93$, $SD = .98$ and $M = 3.63$, $SD = 1.48$; $F(1, 48) = 13.62$, $p < .002$, $\eta^2 =$

.20), and estimates of the percentage of the total amount that the offer represented were higher

($M = 45$, $SD = 9.6$ and $M = 31.9$, $SD = 15.4$; $F(1, 48) = 4.85$, $p < .02$, $\eta^2 = .03$) when the $12.50

offer came from an in-group rather than an out-group proposer. In contrast, none of these

measures differed significantly when situational constraints were made salient (all p's > .5).

Responders' perceptions of counterpart competitiveness were not affected by the two-

way interaction between saliency of situational constraints and proposer's social identity ($F(1,$

84) = 0.17, $p > .60$). In fact, perceptions of counterpart competitiveness were not significantly

different when the offer came from an in-group proposer than an out-group proposer,

respectively, in both conditions: when the situational constraints were not salient ($M = 4.33$, SD

= 1.32 and $M = 4.73$, $SD = 1.18$; $F(1, 48) = 1.23$, $p > .20$) and when the situational constraints

were salient ($M = 3.76$, $SD = 1.47$ and $M = 3.85$, $SD = 1.08$; $F(1, 34) = .05$, $p > .80$). However,

consistent with our reasoning, when the proposer was an out-group member, perceptions of

counterpart competitiveness were significantly lower when the situational constraints were made

salient than when not salient (M's = 3.85 and 4.73; $F(1, 45) = 6.77$, $p < .01$, $\eta^2 = .13$).

Study 3 replicates study 2's findings for relatively favorable offers. More importantly,

study 3 shows that the intergroup bias can be attenuated by making situational constraints salient.

These results suggest when the offer is relatively favorable, the in-group favoritism can be

mitigated by making responders elaborate on the fact that the proposer's behavior may be due to

the situation rather than personality disposition.

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GENERAL DISCUSSION

Motivated by the increasing complexity in the social milieu of many exchange processes, this research seeks to investigate how social cues, that are embedded in the decision making environment, shape individuals' expectations, perceptions, and behavior. Arguing that one of the first features encountered in a transaction context is the social identity of the transacting counterpart, this research examines the effect of a transacting counterpart's social identity in conjunction with information availability on perceptions and outcomes in the context of an ultimatum game. Given that majority of the existing research documents the preponderance of intergroup bias, the current research adds to the growing literature that examines factors that may reduce in-group favoritism. More specifically, although studies have investigated the role of social identity in complete information contexts (e.g., Kramer, Shah, & Woerner, 1995), the presence of social identity biases have largely been ignored in contexts characterized by uncertainty and information asymmetry. The present research is an attempt to better understand information-based conditions under which social identity biases may be reduced or eliminated.

The issue of whether information availability and accessibility alters identity based biases is important since exchange settings are commonly characterized by uncertainty and information asymmetry (Srivastava, 2001). Although previous research has examined the effects of social identity in conjunction with factors that affect perceived risk (e.g., Brewer & Kramer, 1986), the present research is more closely related to uncertainty where it is difficult to assess fairness of potential outcomes (e.g., van den Bos et al., 1997; van den Bos & Lind, 2002). It is perhaps not surprising that contextual cues, such as counterpart's social identity, plays an influential role in

incomplete information situations given that social identity affects perceptions and behavior even when individuals have access to objective referents against which to evaluate outcomes. However, in incomplete information situations, where individuals are in a relatively weak and vulnerable position, expectations of how the counterpart is likely to behave may loom large. The attributions that are triggered, particularly in incomplete information situations, may affect the extent to which potential outcomes are assimilated or contrasted with one's expectations based on the counterpart's social identity. The present research thus adds to the literature in social psychology by identifying information-based contextual conditions that represent boundaries to social identity based biases (Tajfel, 1982; Tajfel & Turner, 1986).

Specifically, this paper reports the results of three studies that examine the role of a counterpart's social identity in influencing perceptions and behavior in both complete and incomplete information ultimatum games. Previous research suggests that responders typically reject offers that are clearly unfair (e.g., Huck, 1999). Study 1 qualifies this finding by showing that in complete information situations where an offer is clearly unfair, the counterpart's social identity still affects how responders perceive and respond to such offers. Responders perceived an unfair offer to be less fair when the offer came from an out-group counterpart relative to an in-group counterpart. Results are consistent with the intergroup bias that an "us" versus "them" mode of social categorization is prone to reflect in-group favoritism (Kramer, Shah, & Woerner, 1995). Importantly, although responders clearly know that the counterpart is being unfair, they appear to be more tolerant and forgiving when the counterpart is an in-group member than an out-group member.

Study 2 shows that in incomplete information situations, a counterpart's social identity exerts a different type of influence on individuals' perceptions, attributions, and behavior. The

findings suggest the typical persistence of a positive in-group bias when the offer is apparently

favorable but an attenuation or even reversal of that bias when the offer is apparently

unfavorable. In particular, when the likelihood of an offer representing an unfair division is

relatively high, the intergroup bias is attenuated or even reversed as individuals react more

negatively to relatively unfair offers coming from in-group than out-group counterparts.

Together, studies 1 and 2 delineate a condition under which the typically persistent intergroup

bias is attenuated (and perhaps even reversed). Specifically, while an opportunistic in-group

counterpart may be tolerated in complete information situations, the same action is less likely to

be condoned in an incomplete information situation because the counterpart is taking advantage

of the situation at the expense of a vulnerable member of one's own group. In other words,

individuals are willing to tolerate selfishness from in-group members relative to out-group

members when they are in a strong position but they cannot tolerate it when they are in a weak

spot. Basically, individuals like to be generous and accepting of people in their own group but

have difficulty in putting up with a breach in the informal contract, which suggests that people in

the same group should not take advantage of the other's vulnerable position. Said differently,

there is an expectation that members in the same group will be protective and there is a backlash

if that expectation of protection is not only jeopardized but that there is even exploitation.

Although study 2 identified an information-related condition under which the intergroup

bias was attenuated, the typical in-group favoritism was still manifested when the offer was

relatively favorable. It is possible that individuals make the fundamental attribution error and still

give more weight to a counterpart's personality traits than to situational constraints, such as the

total amount available for division, when they evaluated the relatively favorable offer in an

incomplete information setting. Study 3 thus explored a different information-related way of

attenuating the intergroup bias: making situational constraints salient and compelling individuals

to consider other plausible explanations (Corneille, Leyens, & Yzerbyt, 1999). Study 3 replicated

the finding that when situational constraints are not salient, a relatively favorable offer is more

likely to be accepted when coming from an in-group counterpart relative to an out-group

counterpart. The offer was also estimated to be higher as a percentage of the total amount

available when the counterpart was an in-group member rather than an out-group member. In

contrast, when situational constraints were made salient, individuals appear to have considered

other plausible explanations thus attenuating the intergroup bias. While study 2 showed that the

intergroup bias can be attenuated by lowering perceptions of in-group cooperativeness, study 3

showed the attenuation by raising perceptions of out-group fairness.

The limitations of this research bear comment. First, while ultimatum games provide a

simple setting in which to isolate the effects of the factors of interest, most economic transactions

involve bargaining over multiple periods. Repeated interactions not only create stronger

expectations about others' behavior but also provide additional information from which to draw

inferences. Second, despite attempts to make the task as realistic as possible, the studies reported

here are laboratory experiments. While issues of generalizability do arise, we believe that the

systematic effects found attest to the robustness of the effect of social identity on perceptions and

behavior. Third, social identity was operationalized as group membership in all three studies.

However, we did not recourse to a minimal group context but to a rich intergroup relation of one

university against another, with the two being old rivals. In this situation, rich ingroup and

outgroup stereotypes come into play, which assists in making expectations about others'

behavior stronger (e.g., Jetten, Spears, & Postmes, 2004). Although it is important to test the

robustness of the findings with other contexts and social categories, such as culture, ethnicity,

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gender, etc, our results highlight the malleability of judgment and behavior to social cues that are

an integral part of many transactions.

Notwithstanding the limitations, the findings clearly highlight the role of social identity

in exchange processes. From a strict economic perspective, the social identity of a transacting

counterpart should play a relatively minor (or no) role in how individuals interpret and react to

offers. Our results, however, strongly suggest that the social context in which most transactions

are embedded plays a critical role in how counterparts are evaluated as well as whether offers are

accepted or rejected. Consistent with Tajfel (1981), our results corroborate the idea that motives

for social self-esteem are critical for resource allocation decisions.

Further, social identity plays a different role when objective referents are absent. The

counterpart's social identity, along with the offer, is used to make inferences about the extent to

which the counterpart is taking advantage of their informational advantage. Together, our

findings identify information-based boundary conditions for the intergroup bias. Knowledge of

the influence of factors such as social identity and information availability and accessibility

should facilitate better management of the trade-offs between competitive and cooperative

behavior in exchange processes.

Our results also have several theoretical implications for the research on distributive

justice or fairness. Although the notion of fairness is not typically incorporated in standard

economic theories (c.f. Rabin, 1993), there has been a proliferation of research documenting the

ubiquity and importance of fairness considerations in business transactions. This research departs

from the prior literature on fairness in at least three ways. First, while much of the prior research

focuses on the dual entitlement principle and examines situations where referents against which

offers are evaluated are accessible (Kahneman, Knetsch, & Thaler, 1986), this research explores

fairness assessments in situations where referents are not easily available. Second, this paper

attempts to rigorously link social cues to various aspects of behavior, attitudes, and judgment

formation. Third, unlike most studies which use hypothetical scenarios, this paper examines how

social identity influences the nature of causal attributions and related perceptions, and links

perceptions directly to outcomes (or behavior), in a true economic transaction.

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Table 1: The effect of social identity and offer size on acceptance rates, fairness perceptions, and

emotional reactions in complete information ultimatum games (Study 1)

Social Identity	In-group		Out-group	
Offer	$12.50	$7.50	$12.50	$7.50
Acceptance rate (in %)	91.7	41.7	81.0	23.1
Fairness of offer	5.92 (1.74)	3.08 (1.56)	5.96 (1.88)	2.19 (1.00)
Emotional reactions	5.38 (1.82)	3.73 (1.70)	5.44 (1.74)	2.79 (1.20)

Note. Standard deviations are given in parentheses.

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Table 2: The effect of social identity and offer size on acceptance rates, fairness perceptions,

emotional reactions, and personality disposition in incomplete information ultimatum games

(Study 2)

Social Identity	In-group		Out-group	
Offer	$12.50	$7.50	$12.50	$7.50
Acceptance rate (in %)	78.6	33.3	56.2	45.0
Fairness of offer	4.43 (1.20)	2.87 (1.51)	3.63 (1.18)	3.80 (1.53)
Emotional reactions	3.71 (1.28)	2.87 (1.20)	3.25 (1.38)	3.65 (1.26)
Proposer competitiveness	4.00 (.49)	2.57 (.73)	3.67 (.62)	4.07 (.61)

Note. Standard deviations are given in parentheses.

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Table 3: The effect of social identity and saliency of situational constraints on acceptance rates,

fairness perceptions, emotional reactions, and personality disposition in incomplete information

ultimatum games (Study 3)

Social Identity	In-group		Out-group	
Situational Constraints	Salient	Not Salient	Salient	Not Salient
Acceptance rate (in %)	80.0	83.3	95.0	53.9
Fairness of offer	4.60 (1.60)	4.38 (1.38)	4.35 (1.14)	3.19 (1.13)
Emotional reactions	4.26 (1.15)	4.93 (.98)	4.35 (.80)	3.63 (1.48)
Proposer competitiveness	3.76 (1.47)	4.33 (1.32)	3.85 (1.08)	4.73 (1.18)
Estimate of percentage	46.4 (10.8)	45.0 (9.6)	44.8 (18.5)	31.9 (15.4)

Note. Standard deviations are given in parentheses.