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THE EFFECTS OF ISSUE IMPORTANCE AND GROUP SIZE
DIFFERENCES ON CONTRIBUTION RATES AND
SOCIAL IDENTITY IN A PUBLIC GOODS SOCIAL DILEMMA

A Dissertation
SUBMITTED TO THE GRADUATE FACULTY
in partial fulfillment of the requirements for the
degree of
Doctor of Philosophy

By
CATHRYN L. SAVAGE
Norman, Oklahoma
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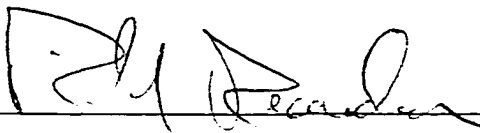
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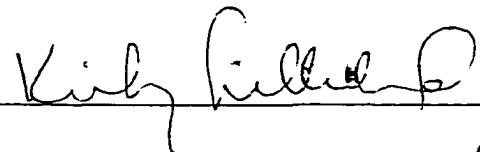
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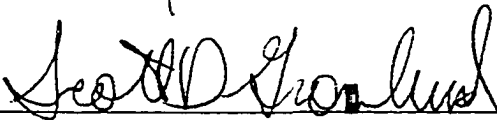
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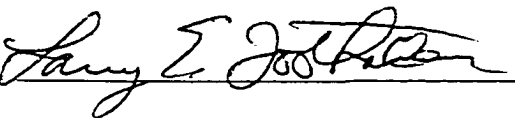
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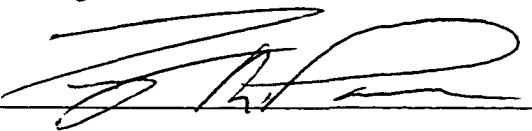
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Abstract

This study examined the effects of issue importance on social identity, personal identification with an issue and contribution decisions in a public goods social dilemma. A total of 331 undergraduate students from the University of Oklahoma were recruited from the introductory psychology course to participate as one alternative for fulfilling course requirements. Potential participants were identified as high or low in the extent to which they could personally identify with a list of social issues measured during a pre-testing session. The specific issue was chosen based on approximately equal numbers of high and low levels of importance responses within the population. Participants were then randomly assigned to one of two group sizes and to either actual or fictitious groups. Actual groups of 4 and 8 discussed the issue and fictitious groups engaged in a thought listing procedure regarding the issue. Social identity, personal identification with the issue, contribution decisions and self-efficacy were measured in a 2 (important/unimportant issue) x 2 (group size = 4 or 8) x 2 (actual/fictitious groups) design. Results showed that neither the salience of social identity nor personal identification with the issue prevented group size effects in terms of cooperative contribution decisions made before and after feedback during the public goods dilemma game. The greatest proportions of cooperative contributions came from both actual and fictitious groups of 4 with the issue viewed as important by group members. Actual groups in general had significantly higher levels of social identity than fictitious groups even when the issue was not considered important. In contrast, fictitious groups had significantly higher levels of both personal

identification with the issue and self-efficacy. Group size effects were not present, however, when donation decisions were made to give the lottery winnings to the cause surrounding the issue. The highest percentages of donation decisions were from important issue conditions in both actual and fictitious groups. However, the greatest proportions of donations came from fictitious groups where both personal identification with the issue and self-efficacy were highest.

The Effects of Issue Importance and Group Size Differences on Contribution Rates and Social Identity in a Public Goods Social Dilemma

Collective action occurs when an outcome is not the result of a single person's act but rather the acts of many individuals. Collective action is difficult to define in an absolute way, because how one views the collective depends on assumptions one makes about the individuals who make up the collective, i.e., self-understanding, individuality, and social context (Chase, 1992).

The social dilemma is a particular class of collective action. In a social dilemma situation, each member of a group receives a higher payoff for a non-cooperative decision (defection) than for a cooperative decision. But individuals in the collective will have a greater outcome if all make a cooperative decision than if all defect. Research in social dilemmas is concerned with how we can encourage people to be more cooperative in social dilemma types of situations.

Two research paradigms used to examine how group members make their decisions in social dilemmas are the *Public Goods dilemma* and the *Common Resource dilemma*. In Public Goods dilemmas, group members can provide a public good from which all members may benefit. Services such as public television and some charities are examples of Public Goods that can be provided through combined individual contributions. Furthermore, once the good is provided, no member can be excluded from its consumption or use, regardless of their contributions. The Common Resource dilemma is modeled after real life examples such as energy consumption, where excessive consumption threatens the future supply of energy. The essential condition

of this type of dilemma is expressed when each individual member of a community or collective of some sort continues to consume a common resource to satisfy immediate personal gratification. However, in the long run, consequences are hazardous to the group members as a whole (Komorita & Parks, 1996).

The purpose of the present study was to examine factors that mediate contribution behavior in a public goods social dilemma situation. Several theories of social identity are reviewed to show that a social theory of the self has important implications for work on social dilemmas, and that social identities may have elements of a social-dilemmatic structure. For example, the social dilemma is characterized by a conflict of interests between individual and collective outcomes. This conflict is both inter- and intra-individual, i.e., between self-interest and other's interest, and between self-interest as an individual and self-interest as a member of a collective. This notion emphasizes that individual and collective interests are not completely distinct from one another, in contrast to economic theories based on selfish-interest (cf. Olsen, 1965). A social theory of self might suggest that people are actually *less* likely to perceive a social dilemma situation as being primarily focused on selfish-interest (Chase, 1992).

In addition, research relevant to the activation of social identity and theories associated with collective action with respect to cooperation/contribution rates are addressed. Specifically, the present investigation looks at how social identity can affect contribution rates in social dilemmas with respect to group size differences. Past research has shown that the size of a group or collective can affect cooperation/contribution rates in social dilemmas (Komorita & Parks, 1995). In

general, as group size increases, levels of contribution and cooperation decrease. Reasons offered for these effects have been associated with feelings of self-efficacy (e.g., Kerr, 1989; Rapoport, 1985; Weick, 1984) and anonymity (e.g., Sell & Wilson, 1991; Sniezek, May & Sawyer, 1990). Since the goal of research in social dilemmas is to examine factors associated with contribution/cooperation, it is necessary to show that when social identity is salient, self-efficacy and anonymity may not be as influential with respect to group size differences.

Self and Social Identity

According to Baumeister (1995), a full understanding of the nature of *self* includes several things. First of all, it includes the body. Second, it includes social identity, which can be understood in broader terms than assumed from social dilemma research. From that broader perspective, social identity can be thought of as a cluster of meaningful definitions that can be attached to the body, including a name, social roles, membership in various groups, shared and personal beliefs and other attributes. For example, Baumeister (1986a) defined identity as being composed of a particular conception of potentiality, structure of values and priorities, and interpersonal roles and traits. Finally, the self can be viewed as an active agent involved in behavioral choices.

According to Shamir, Sheetray and Elias (1996), our values and identities are the first and second links of the self-concept to society. People derive meaning from being linked to social collectives through their identities. For example, the identification of alumni with their alma mater may lead to donations to that institution

and attendance at functions. From the perspective of the self as agent, Gegas (1986) suggests the existence of an 'authenticity' motive: The more behaviors reflect salient identities, the more these behaviors are perceived by the actor to be an authentic reflection of his/her real self.

Stryker and Serpe (1982) believe that identities are organized hierarchically in the self-concept in terms of salience. Identity salience refers to the importance of one identity in defining one's self, relative to other identities held by the individual. These researchers argue that the greater the salience of an identity within the self-concept, the greater the motivational significance toward certain actions. More specifically, the more salient the identity, the greater the probability that a person will perceive a given situation as an opportunity to perform in terms of the identity.

Israel and Tajfel (1972) have argued for the importance of context as an influence on human behavior. Their social identity theory (SIT) has served as an important platform for developing programs of research in social psychology in which the self is defined in terms of social context and inter-group relations.

Social identity theory, and its close kin, self-categorization theory (SCT), are based on the premise that in-group out-group distinctions follow from basic principles of social categorization of self and others (Turner, 1987). SCT is specific with respect to the principle of in-group homogeneity: Identity with a social group is presumed to involve a change in the perception of the self as an interchangeable exemplar or prototype of some social category. The perception of the self as a unique individual separate from others is de-emphasized. Even personal identity is assumed to reflect

characteristics that differentiate one individual from another *within a social context* (Deaux, 1992).

According to Chase (1992), predictions from social identity/self-categorization theories have been found to depend on the frame of reference within which judgments are made. For example, inter-group judgments are made in a context that distinguishes one's own group from other groups, and intra-group judgment contexts are those that occur when comparisons are made between the self and other group members.

According to a social identity perspective, judgments of in-group variability (but not out-group variability) will depend on whether social identity or personal identity has been engaged at the time the judgment is made. On one hand, when social identity is made *salient*, the individual assimilates his/her self-concept to that of the typical in-group member, thereby reducing awareness of *self-other comparisons* within the group. On the other hand, when personal identity is more salient than social identity, the individual is more concerned with intra-group distinctions. These principles were shown in a study by Kelly (1989), who found a predicted interaction between issue importance and in-group vs. out-group homogeneity. With respect to personality traits such as selfishness and loyalty, an out-group was perceived as more homogeneous than the in-group, which illustrated that when individual differences were salient, in-group variability was important. In the case of political values, such as equality and freedom, no in-group or out-group differences were found. However, when it came to *specific* attitude issues most relevant to the political party identity of subjects (i.e., the collective), such as private health care, trade unions, etc., the in-group was estimated

to have less variability (more solidarity) than the out-group. These findings support the idea that perceived homogeneity of the in-group will be greatest for features or issues that are salient to in-group distinctiveness (Brewer, 1993).

Group Beliefs as an Expression of Social Identity

Group beliefs have been defined by Bar-Tal (1998) as shared convictions of group members and their awareness of those shared convictions. This definition suggests that a belief pertains to any content that is the subject of the group belief. The contents of group beliefs have been classified into such domains as values, ideologies, intentions, goals, human rights and prescriptions for behavior (e.g., Batson, 1994; Komorita & Parks, 1996; March & Simon, 1958).

Group beliefs can also be characterized by degree of confidence and level of centrality. When group beliefs are held with great confidence, it is because they are believed facts or truths held by the group. In most cases, individuals voluntarily join groups such as religious denominations, political organizations or professional associations on the basis of group beliefs. The centrality of group beliefs implies that they are often accessible in each group members' repertoire of beliefs, and that they are relevant for consideration. The centrality characteristic is often maintained by external factors. Availability and saliency of group beliefs in the group members' environment may influence their centrality. Availability refers to the frequency that group members are exposed to the content of the belief. Saliency is a function of the vividness of the group belief when it is presented to the group (Bar-Tal, 1998).

Social Identity and Behavioral Intentions

Social identity and its association with behavioral intentions has been the focus of the theory of reasoned action (Ajzen & Fishbein, 1980). According to this theory, a person's intention to behave is a function of two basic determinants, one personal in nature and the other reflecting social influence. The personal factor is an individual's positive or negative evaluation of performing the behavior, i.e., their attitude toward the behavior. People may differ in their evaluations of, for example, buying a video game. The second determinant of intention is the person's perception of the social pressures put on him/her to perform or not perform a particular behavior. This factor is termed the "subjective norm". Generally speaking, we can assume that an individual will intend to perform a behavior if it is evaluated positively, and if they believe that important others believe they should perform it. Important to consider is the relative importance of the attitudinal and normative factors as determinants of intentions. The theory of reasoned action assumes that the relative importance of these factors depends in part on the intention under investigation. In addition, the relative weights of the attitudinal and normative factors may vary from one person to another (Ajzen & Fishbein, 1980).

Moreover, according to the theory, attitudes are partly a function of "behavioral beliefs". Generally speaking, an individual who believes that performing a given behavior will lead to positive outcomes will hold a favorable attitude toward performing the behavior; if outcomes are perceived as unfavorable, that individual will hold an unfavorable attitude. Subjective norms are also a function of beliefs, but of a

different kind (normative beliefs). Generally, a person who believes that if most relevant others think he/she should perform a behavior, that person will feel social pressure to do so.

The theory of reasoned action defines personality variables, demographic variables and social role, status, socialization, intelligence, etc., as external variables in the sense that they would be additional influences on behavior. External variables may influence the beliefs a person holds, or the relative importance he/she attaches to attitudinal and normative considerations. For example, an introvert may hold very different beliefs about attending a party than would an extrovert. Further, since the extrovert is likely to be more sensitive to social pressure, relative to an introvert, the subjective norm may be a more important determinant of his/her intention to attend the party. The point here is that there is no *necessary* relation between any given external variable and behavior. From this theoretical framework, an external variable will have an effect on behavior only to the extent that it influences the determinants of that behavior.

Charng, Piliavin and Callero (1988) combined the Ajzen and Fishbein (1980) model with concepts derived from identity theory to examine the extent to which a salient role-identity, i.e., as a blood donor, has an effect on behavior intention. Their findings showed that the more involved participants became in their blood donor role by repeated donations, the less subjective norms became a predictor of behavioral intention. A possible interpretation offered by Charng et al., is that once participants began to identify themselves as “blood donors”, they wish to perceive their donations

as voluntary rather than as a result of social pressure.

In summary, an individual's beliefs and attitudes will affect behavioral intentions, and theories of social identity assume that an individual's self-concept includes both personal and social identities, and that personal and social identities are equally important depending on the context. Therefore, it is reasonable to expect that one's social identity will have a greater impact on outcome when individual group members share values on salient attitude issues.

Past Research on Collective Behavior

According to Komorita and Parks (1996), a problem associated with contribution/cooperative behavior is the size of the collective. In a large group, a single person's behavior (e.g., choice) has little effect on the outcomes for the group, whereas in a smaller group one person's choice has a larger effect. Kerr (1989), for example, found that perceived self-efficacy declined as group size increased from two to four persons for certain tasks.

Decreases in contribution rates have also been associated with being anonymous in a crowd, making one's behavior less noticeable. From the social dilemma perspective, the relative decrease in contributions when the size of a collective increases is due to the perceived opportunity for *free riding* associated with anonymity (e.g., Komorita & Parks, 1996; Olsen, 1965). Free riding refers to the ability to have access to a good or resource without contributing to that good or resource. Free riding is similar to the concept of *social loafing* in other group process research (e.g., Harkins, 1987; Latane, Williams, & Harkin, 1979). In a similar vein, Olson (1965) and

Messick (1973) have predicted that cooperation should decrease with increasing group size due to deindividuation associated with anonymity of responses in social dilemmas. In the deindividuation literature, anonymity is a crucial factor that can lead to antisocial acts (Zimbardo, 1969).

Turner and Killian (1957) confronted the deindividuation issue in formulating their “emergent norm theory”. Emergent norm theory follows in the tradition of reference group approaches such as those of Sherif and Asch (e.g., Asch, 1951; Sherif & Sherif, 1953). Emergent norm theorists hold that crowds develop norms just as smaller groups do, and thus crowd behavior may be prosocial as well as antisocial. For example, Reicher (1984) demonstrated that immersion of an individual in a group resulted in behavior relating to the appropriate social identity of the group. Reicher concluded that the deindividuation state does not minimize personal identity, but increases the salience of one’s social identity.

Dunleavy (1988) has argued that theories of collective action that focus on ‘objective’ measures (cf. Olson, 1965) neglect how people become aware of the interest groups that are relevant to them. For example, although increasing group size makes the effects of an individual’s action less potent, it may also increase the salience of the group to the individual; therefore, the perceived power of that group also increases. Dunleavy argues that identity processes mediate perceptions of the group’s efficacy in bringing about the desired consequences. For example, a study by Klandermans (1986) found that intention to engage in collective action was related to perceptions of the collective’s ability to achieve the collective good (Chase, 1992).

Collective Behavior in Social Dilemma Research

In the social dilemma literature, it has been shown that the expected behavior of others is an important factor that affects cooperative behavior. For example, people respond cooperatively by reciprocating the behavior of others (e.g., Komorita, Parks, & Hulbert, 1992) as they do when face-to-face discussions are involved (e.g., Bouas & Komorita, 1996; Orbell, van de Kragt, & Dawes, 1988). There have been many explanations offered for these communication effects. For purposes of the present study, it is assumed that participants in these earlier studies achieved some level of group identity. The concept of group identity is closely related to the social identity (Tajfel & Turner, 1979) and self-categorization notions (Turner, 1987) described earlier. The two concepts can be viewed as essentially interchangeable in social dilemma research (e.g., Brewer & Kramer, 1986; Kramer & Brewer, 1984). According to Messick and Brewer (1983), communication increases the probability that individuals will make cooperative choices in at least four ways. First, discussion of the dilemma may provide information about how other group members will behave in terms of contribution decisions. Second, group discussion about the issue may enhance trust and thereby reduce the risk of making a cooperative choice. Third, discussion may provide the opportunity for the use of moral suasion among group members, and for the communication of relevant social values that support collective goals. Finally, discussion of a common problem may enhance group identity, creating a cohesion that increases the probability that individuals will take the group interest into account when making their own decisions. For example, Dawes, McTavish and Shaklee (1977)

found that when groups had the opportunity to discuss a dilemma in advance, individuals in those groups made significantly fewer defecting choices. However, under conditions where the topic was irrelevant, communication did not enhance cooperation.

According to Lynn and Oldenquist (1986), there is a need to distinguish between a general cooperativeness or altruism with respect to collective interests, which operates at the personal level, and group egoism, in which interaction is in terms of social groups. If behavior in a social dilemma is being determined at the personal level, then one would not expect the presence or absence of salient groups to affect that behavior. If behavior in a social dilemma is determined in terms of social groups, then the presence or absence of salient groups *would* affect behavior. Group-egoistic motives are nonegoistic desires to serve those groups and social institutions that are the objects of one's love and loyalty. These motives stem from a sense of community, i.e., a sense of identification with social units that are viewed as one's own. Messick and Brewer (1983) have argued that identification with a group can lead to cooperative behavior in a social dilemma because individuals are less likely to make sharp distinctions between their own and others' welfare, and because group identification may increase the perceived effectiveness of individual actions. The following study illustrates the use of nonegoistic motives in producing cooperation in a social dilemma.

Kramer and Brewer (1984) examined the effects of superordinate (collective) group identity and subordinate group identity in heterogeneous groups on cooperation

in a simulated Common Resource social dilemma. In their first experiment, the superordinate group was created by making three participants believe they and three other participants at a remote facility were part of a community that was being compared to other communities in the United States. This instruction was intended to make *salient* a community identity. The subordinate group was created by making three college student participants believe their behaviors were being compared with those of three elderly people at a remote facility (thus, creating an in-group vs.. out-group scenario). In their second experiment, the community identity was used again to maintain a salient collective identity, but for subordinate group conditions, three participants were compared with three other participants located elsewhere, based on differences in their college majors rather than age differences. In their third experiment, superordinate group identity was established using a common fate manipulation in which participants were led to believe that a single lottery would determine the outcome for all six members. The three participants in the subordinate group identity condition were told that their lottery chances were independent of the other three participants. The most important result for present purposes was that in general, participants in the superordinate identity conditions of the first two experiments exercised significantly more personal restraint in taking from a common resource than those in the subordinate identity conditions. In addition, individuals in the superordinate conditions in the first two experiments rated themselves as less selfish than those in the subordinate group conditions. This latter finding suggested to Kramer and Brewer (1984) that individuals with the superordinate-group-identity

seemed to be consciously aware of their decision to exercise personal constraint and believed it was the responsible thing to do even though they were aware that other group members were not necessarily doing the same. However, for experiment 3, no main effect for group identity was found using the common fate manipulation. It should be noted that group identity was measured indirectly according to cooperation rates among the groups in this study.

In a later study, Brewer and Kramer (1986) manipulated social identity again by using a common fate manipulation to establish a superordinate or collective identity. Small vs. large group sizes were compared with respect to cooperation rates in a Common Resource dilemma and contribution rates in a Public Goods dilemma. The results relevant for the present study revealed that the influence of social identity was apparent only when depletion of the common resource had become severe, regardless of group size. More importantly, participants in the Public Goods dilemma kept more of the common resource for themselves, but this was especially true in the large group setting. These results suggest that the social identity manipulation was not as strong in the Public Goods condition as in the Common Resource condition. The investigators concluded that, for public goods problems where contributions are important, the group identity induction was not effective against the negative effects of large groups (e.g., free riding, diffusion of responsibility).

Although research in social dilemmas has shown that contribution rates decrease with increasing group size, it is reasonably well known that public goods such as public television *do* get provided. According to Komorita and Parks (1996),

these types of goods are provided because group size *alone* does not affect individual contribution behavior. For example, enjoyment is not affected by group size. If the particular good provides enjoyment, contribution rates should be unaffected by group size. Likewise, findings from the first two experiments of Brewer and Kramer (1984) point out the importance of a collective identity for increasing the chance of individual cooperation and contribution behavior. In addition, participants need to be exposed to one another and the level of group identity needs to be examined directly.

Later research conducted by Bouas and Komorita (1996) manipulated group identity using the common fate method from Kramer and Brewer (1984). Bouas and Komorita directly measured group identity using a 9-item Group Identity Scale (Hinkle, Taylor, Cox-Cardamone & Crook, 1989). Findings from this study were consistent with Kramer and Brewer (1984). There was no evidence that group identity affected behavior when a common fate manipulation was used on actual four-person groups.

In conclusion, Kramer and Brewer (1984) have shown that increases in cooperative behavior occur when a superordinate social identity is invoked (e.g., experiments 1 and 2). However, the results of their third experiment showed no support for the common fate manipulation as a stimulus for increasing social identity. This finding was repeated in Brewer and Kramer (1986), specifically with respect to large groups, and Bouas and Komorita (1996) when using smaller groups.

Environmental Uncertainty

More recently, van Dijk, Wilke, Wilke and Metman (1999) examined

contribution rates under conditions of environmental uncertainty in Public Goods and Common Resource situations. In typical social dilemma experiments, group members are informed about all relevant characteristics of the dilemma. For example, in experiments on the provision of public goods, participants know (a) exactly the number of endowments all group members possess, (b) the threshold for the realization of the public good, (c) the value of the public good, and (d) how the good will be distributed among the members of the group. However, in the real world, people are uncertain about the extent to which groups members can further the collective interest. Until recently, the dominating view has been that environmental uncertainty results in defection. However, van Dijk et al., (1999) found that under conditions of environmental uncertainty, where participants were only given information about their own endowment size and the number of members in their group, contributions reflected an equal division coordination rule. Under conditions of certainty, where participants were informed that some group members had greater endowment sizes than others, contribution rates reflected a coordination rule that was proportional to the sizes of the endowments. It may be that in past research, in which group size was manipulated, contribution rates in Public Goods dilemmas may have been attributable to the use of coordination rules that satisfied a fairness preference under conditions of environmental uncertainty.

The Present Study

The purpose of the present study was to further investigate social identity and its relationship to contribution behavior and group size differences in a Public Goods social dilemma. Past research has shown that when social identity is salient, cooperation increases. Smaller groups presumably obtain social identity more easily than larger groups because there is less chance of free riding in public goods dilemmas. The common fate manipulation used by Brewer and Kramer (1984), Kramer and Brewer (1986) and Bouas and Komorita (1996) may not have been strong enough to induce social identity to the extent that contribution behavior, specifically, would remain robust regardless of group size. Therefore, groups of individuals that attached a higher level of importance to a social issue, were recruited and compared with groups of individuals that did not believe the issue to be important.

In addition, fictitious groups were recruited and compared with actual groups. Many studies that have examined group size differences have employed fictitious groups, i.e., participants were led to believe they were members of a particular group size and that the other members were located elsewhere (e.g., Brewer & Kramer 1984; Kerr, 1989; Kramer & Brewer 1986). Fictitious groups offer a useful contrast to actual groups because there is no actual face to face contact between group members. Additionally, fictitious groups may be especially relevant with respect to the public goods paradigm because it is believed that individuals in the real world make contributions to public causes and charities primarily based on the importance they attach to a particular cause or charity and not necessarily because of social

identification with a group or based on the number of other people making similar contributions. It is important that empirical investigations not only examine the contents of group beliefs and how they impact behavior, but also how individuals behave when they share beliefs, and how personal values and priorities affect decisions. So, an assessment of personal identification with the issue was made.

In the present study, actual and fictitious groups of 4 and 8 participants were recruited. With respect to actual groups, I expected those groups that discussed an issue that each member considered important to have greater contribution rates, regardless of group size, due to enhanced social identity with the group. Research discussed earlier (e.g., Kramer & Brewer, 1986) has shown that as group size increases in a public goods social dilemma situation, contributions tend to decline. However, this research has never taken advantage of beliefs previously held by participants. Personal identification with the issue was also expected to be associated with greater contribution rates particularly when the issue is considered important.

In the case of fictitious groups, a similar pattern of contribution rates was expected. Contribution rates were expected to be greater when the issue was considered important than in conditions where the issue was not considered important, regardless of group size. Likewise, the same pattern was expected with personal identification with the issue. Finally, overall contribution rates in fictitious groups were expected to be lower than those in actual groups because there was no actual face to face contact with other group members.

A social identity measure was administered after contribution decisions were

made to confirm that social identification occurred (Hinkle, Taylor, Fox-Cardamone, & Crook, 1989). Similarly, a personal identification measure was administered.

Past research has shown that as group size increases, perceived self-efficacy tends to decline as the size of a collective increases. Feelings of perceived efficacy have been associated with lower rates of cooperation in social dilemma research (e.g., Kerr 1989; Kerr & Braun 1983). A measure of self-efficacy was administered after the social identity measure to examine whether perceived self-efficacy differs with respect to group size differences when participants view the public goods issue as important.

Methods

Participants

A total of 331 undergraduate students from the University of Oklahoma were recruited by phone from the introductory psychology course to participate as one alternative for fulfilling course requirements. Potential participants were identified as high or low in the extent to which they could personally identify with a list of social issues measured during a pre-testing session. The level of importance was measured on a 6-point likert scale that ranged from not at all important to very important (see Appendix A). A median split on the pretest score determined high vs. low level of importance of the issue. The specific issue was chosen based on approximately equal numbers of high and low levels of importance responses within the sample. Participants were then randomly assigned to one of two group sizes and to either actual or fictitious groups.

Procedure

Participants were first asked to read and sign an Informed Consent Form (see Appendix B). Actual group participants were brought into a room with their respective group members and seated in a circle facing each other. These participants were asked to read a vignette about a social issue framed in the context of a public good (see Appendix C). A volunteer from the group was solicited to read the vignette aloud while the other group members were instructed to read along silently to ensure that all members attended to the content of the vignette. After completing the reading, participants were instructed to each make a comment about the topic of the reading in

turn. In order to allow equal opportunity for each member to comment and make their position known to other group members, participants were told that their comments were not to last longer than one minute per person and that there was to be no interaction among the group members until all individuals had made their comments. The experimenter listened to the group discussion unobtrusively to ensure that these instructions were followed. The total reading and discussion time did not exceed 5 minutes for groups of 4, and 9 minutes for groups of 8. Participants were then asked to move into private cubicles facing away from each other.

Fictitious participants were brought into the lab and seated in a private cubicle individually. They were told that they were members of a 4-person or 8-person group and that the other members of their group were at another location. These participants were never exposed to other participants. Each participant was asked to read the vignette about the issue. After reading the vignette, participants were instructed to engage in a thought-listing task adapted from Greenwald (1968). These participants were given a sheet of paper and told to number from 1 to 12 down the page. They were then asked to list 10 to 12 thoughts about the issue in the reading in no more than three words for each thought.

Following the discussion from actual groups and thought listing procedure from fictitious groups, the rules of the game were explained (see Appendix D). Participants were told that each individual in their group was being allotted an 8-point endowment. Each member was instructed to decide whether to allocate all of the points into either a personal account or a joint account. The points that were allocated

to the joint account would accrue 100% interest (double in value) and the total number of points in the joint account, after interest, would be divided equally among all group members. The points that group members allocated to the personal accounts would earn no interest but would not be shared by group members and returned to the individual in full (from Bouas & Komorita, 1996).

Participants were instructed to look at the payoff matrix in front of them (see Appendix E). They were informed that the number of points each member of the group would have after making the joint or personal decision was dependent on the decisions of all the group members. Examples were given with respect to possible outcomes that would occur depending on the number of individuals including themselves choosing to allocate their points to the joint account and the personal vs. joint accounts. They were told to think of the number of points they (as individuals) could end up with as the equivalent of the number of lottery tickets they would receive for a chance to win a \$50 lottery that was to take place at the end of the semester. Thus, the more points they accumulated the greater their chance of winning the prize. Participants were instructed to raise their hand if they did not understand the matrix. If participants did not understand the matrix, an additional example was given. Participants were told that their decisions would remain confidential and were then instructed to make their contributions by circling either joint account or personal account on a slip of paper that was provided and to fold the slip of paper in half to conceal their responses from the experimenter. Decision slips were then collected.

After completing the decision task, the social identity questionnaire was

administered (Hinkle, Taylor, Fox-Cardamone, & Crook, 1989). An additional item was added to this questionnaire as a measure of their personal identification to the issue in the vignette (see Appendix F). Perceived self-efficacy (Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs & Rogers, 1982) was measured to determine its relevance in this particular situation with regard to contribution behavior. After all participants had completed the questionnaires, they were given verbal feedback as to how many individuals in their group had chosen the joint account and how many had chosen the personal account. In the fictitious groups of 4 and 8, feedback was held constant by telling the participant that half of their group picked the joint account and half picked the personal account (regardless of which account the participant chose). For example, fictitious groups of 4 participants were told “two people in your group chose the joint account and two people chose the personal account.” Similarly, fictitious groups of 8 participants were told that 4 people in their group chose the joint account and 4 people chose the personal account. All participants were then asked again to indicate whether they would choose the joint account or personal account in light of the feedback they were given by again circling one of the accounts on the slip of paper provided to them and to fold it in half for privacy. Finally, participants were asked to indicate on an additional slip of paper whether they would like to keep the lottery winnings in the event that they win or donate the money to the cause in the vignette they read about earlier by circling ‘give’ or ‘keep’.

Participants were then debriefed (see Appendix J). Specifically, participants were told that the issue in the vignette was fictitious and that, if they did win the

lottery, they would keep the winnings regardless of how they answered the give or keep decision. Participants were also assured that their responses would remain confidential and that their names would only be associated with the sign-up sheets for their course credit and the number of points they accumulated for the lottery drawing. The primary dependent variables were donation decisions, contribution rates, level of social identification with the group, perceived self-efficacy and level of personal identification with the issue.

Results

Social identity, personal identification with the issue and self-efficacy were examined in a 2 (important/unimportant issue) $\times$ 2 ($n = 4$ or $n = 8$ group size) $\times$ 2 (actual/fictitious groups) between groups factorial MANOVA. The Games-Howell multiple comparison procedure was used for pairwise comparisons because of unequal sample sizes (Games & Howell, 1976). A main effect for issue importance was found for social identification with the group $F(1, 323) = 4.82, p = .0288, MS = 7.30$. As expected, participants showed significantly more social identity with the group when the issue was considered important ($M = 6.03$) than when considered unimportant ($M = 5.79$).

This analysis also revealed a significant main effect for actual vs. fictitious groups showing that actual groups ($M = 6.04$) had greater social identity with the group than did fictitious groups ($M = 5.39$), $F(1, 323) = 18.77, p = .0001, MS = 28.43$, and a significant group size by actual vs. fictitious group interaction $F(1, 323) = 6.32, p = .0124, MS = 9.57$. Further analysis of cell means using the Games-Howell multiple

comparison procedure showed that actual groups of 4 in the important issue condition had significantly more social identity with the group than fictitious groups of 4 in the unimportant issue condition as expected $t(36) = 6.56, p < .05$ but not for fictitious groups of 8 where the issue was unimportant. Actual groups of 8 in both the important and unimportant issue conditions also showed greater social identity than fictitious groups of 4 in the unimportant issue condition $t(34) = 6.13, p < .05$ and $t(29) = 4.17, p < .05$ respectively. There were no significant differences in group size within the actual groups or within the fictitious groups for social identity (see Figure 1).

A main effect for issue importance was also found on personal identification as expected revealing that groups in the important issue conditions identified with the issue significantly more ($M = 5.12$) than those in the unimportant issue conditions ($M = 3.75$), $F(1, 323) = 15.77, p = .0001, MS = 97.42$. A main effect for actual vs. fictitious groups was found. Curiously, fictitious groups identified with the issue significantly more than actual groups ($M = 5.42$) and ($M = 4.11$) respectively, $F(1, 323) = 12.07, p = .0006, MS = 74.51$. There was also a marginal importance by actual vs. fictitious by group size interaction $F(1, 323) = 3.44, p = .0647, MS = 21.21$. Further analysis of cell mean differences showed that there were no significant differences between groups of 4 and 8 when the issue was viewed as important in both actual and fictitious conditions as expected. However, there was a significant difference between actual and fictitious groups of 8 in the important issue conditions indicating that fictitious groups of 8 had greater personal identification with the issue than actual groups of 8 $t(35) = 3.48, p < .05$. This pattern was also noted with actual and fictitious

groups of 4 when the issue was considered unimportant $t(29) = 4.80, p < .05$.

Significant differences were found between actual groups of 4 when the issue was important and actual groups of 4 and 8 when the issue was viewed as unimportant $t(89) = 3.50, p < .05$ and $t(86) = 3.90, p < .05$, respectively. As expected, the important issue group had greater personal identification with the issue. However, important issue groups of 8 in actual groups were not significantly different from unimportant actual or fictitious groups of 4 and 8. Fictitious groups of 8 in the important issue condition had significantly greater personal identification than unimportant actual and fictitious groups of 8 $t(29) = 5.56, p < .05$ and $t(32) = 3.67, p < .05$, respectively, as well as actual groups of 4 in the unimportant issue conditions $t(40) = 5.05, p < .05$. There were no significant differences between actual groups of 4 and actual or fictitious groups of 8 in the unimportant conditions (see Figure 2).

A significant main effect for actual vs. fictitious groups was found on self-efficacy. Fictitious groups were significantly higher in self-efficacy than were actual groups, ($M = 4.01$) and ($M = 3.85$) respectively, $F(1, 323) = 4.78, p = .0295, MS = 1.18$. There were no group size or importance of the issue differences with respect to self-efficacy in either actual or fictitious groups.

The three decision variables (contribution decisions 1 and 2 and donation decisions) were each examined using a logit analysis. Proportions of cooperative decisions were calculated for each cell for decision 1 (see Table 1). There was an importance of issue $\times$ group size interaction, $\chi^2(1, N = 331) = 9.88, p = .0017$. People were more likely to choose the joint account if they viewed the issue as important and

were in groups of 4. In actual groups of 4 where the issue was viewed as important, 78% of participants made a cooperative decision. Fifty-one percent of both actual groups of 4 and 8 in the unimportant issue conditions made a cooperative decision and 49% of participants in actual groups of 8 where the issue was considered important made a cooperative decision. In fictitious groups, 94% of participants in important issue groups of 4 made a cooperative choice, followed by important issue groups of 8 with 67% cooperating. In unimportant issue conditions of 4 and 8, 47% and 64% made cooperative choices, respectively.

Decision 2 was made after participants received feedback about the contribution decisions made by their respective group members. The importance of the issue and group size interaction remained significant with participants in groups of 4 in conditions where the issue was viewed as important were more likely to choose the joint account $\chi^2(1, N = 331) = 8.08, p = .0045$. Proportions of cooperative choices showed a similar pattern of results to those with decision 1 (see Table 2). For actual groups, participants in important issue groups of 4 were cooperative 68% of the time, followed by 49% in unimportant groups of 8 cooperating. For important groups of 8 and unimportant groups of 4, 45% and 44% of participants cooperated respectively. For fictitious conditions, 70% of participants in 4-person groups who viewed the issue as important cooperated, followed by 44% in 8-person groups and the issue viewed as important. In unimportant issue groups of 4 and 8, 23% and 41% participants made a cooperative choice respectively.

Finally, the decision to keep the lottery winnings or donate the lottery winnings

to the cause described in the vignette yielded a main effect for importance of the issue, $\chi^2 (1, N = 331) = 10.46, p = .0012$. People viewing the issue as important were more likely to donate their lottery winnings to the cause described in the vignette in support of the hypothesis. Proportions of donation decisions to give the lottery winnings away were calculated for each cell (see Table 3). The highest percentage of donations in actual groups were from groups of 4 and 8 in the important issue conditions with 51% and 52% choosing to donate the money, respectively. Only 40% of participants in unimportant issue groups of 4 and 33% in unimportant groups of 8 chose to donate the money. The same pattern of donation decisions were found for fictitious groups with 64% of participants in groups of 4 and 72% in groups of 8 and the issue seen as important chose to donate the money. Only 35% of participants in fictitious groups of 4 and 23% in fictitious groups of 8 with the issue viewed as unimportant chose to donate the money.

Discussion

Overview

The primary purpose of the present study was to examine the effects of issue importance and group size differences with respect to social identity, personal identification with the issue, and contribution decisions in a public goods social dilemma paradigm.

Before further discussion, some limitations of this study should be pointed out. First, although participants were randomly assigned to groups for the establishment of initial equivalence of conditions, ongoing equivalence may have been compromised with face to face discussions. Other subject variables such as personality, SES, demographic differences, etc., may have become apparent within the discussions and thus influence social identity for actual groups. In addition, although attempts were made to control for levels of issue importance and levels of agreement/disagreement with the issue, median splits were utilized to establish high and low levels of issue importance and levels of agreement/disagreement with the issue. The use of extreme scores on issue importance would have been preferred; however, this was not feasible for this study due to inadequate size of the population available for sampling. Finally, and for the same reason, treatment conditions had unequal numbers of observations.

Social identity. Fictitious groups showed less social identity than actual groups. Clearly, face-to-face contact facilitated social identity, but to explore the impact of group size, issue importance must be taken into consideration. Subjects in the

important conditions indicated greater social identity than those in the unimportant conditions, regardless of group size. There were no group size or importance of issue differences in social identity *within* actual groups or *within* fictitious groups. However, group size effects were evident when actual groups were contrasted with fictitious groups. Social identity was greatest in actual groups of 4, and least in fictitious groups of 4. More specifically, actual groups of 4 who viewed the issue as important differed significantly from fictitious groups of 4 and 8 when the issue was not considered important.

Personal identification. The results for the personal identification measure showed a different pattern. Not surprisingly, personal identification with the issue was greater when the issue was important. Surprisingly, a main effect for actual vs. fictitious revealed that fictitious groups had significantly greater personal identification with the issue than actual groups. On the one hand it might be that people in actual groups identified more with the group after face to face discussions than with the issue. On the other hand, fictitious groups had only the issue at hand for which to identify without the distraction of other group members. With the absence of other members and the lack of live feedback, subject in fictitious groups may have felt more personal responsibility for the issue, even in issue unimportance conditions.

Individual comparisons revealed that actual groups of 4 who viewed the issue as important differed significantly from actual groups of 4 and 8 where the issue was considered unimportant. This finding is somewhat similar to the pattern of differences noted with fictitious groups. Fictitious groups of 4 and 8 in the important issue

condition did not differ from one another. Furthermore, fictitious groups of 8 in the important issue condition differed significantly with fictitious groups 8 in the unimportant issue condition, but they did not differ from fictitious groups of 4 in the unimportant issue condition.

Self-efficacy. The main effect for actual vs. fictitious groups on self-efficacy revealed that fictitious groups had significantly higher levels of self-efficacy than actual groups.

Contribution decisions. There were three contribution decision variables, decision 1, decision 2, and the donation decision. In decision 1, the highest levels of cooperation occurred in groups of 4 when the issue was important. The lowest levels of cooperation occurred in groups of 4 when the issue was unimportant. Issue importance had no impact on the cooperativeness of the larger groups. This provides partial support for the hypothesis that issue importance contributes to cooperative decisions. It should be noted, however, that cooperative decisions were proportionately greater in fictitious groups of 4 and 8 than actual groups in the important issue conditions. (As will be noted below, this finding seems supportive of the idea that the activation of personal identification with the issue was more influential when it comes to cooperative contribution decisions.)

The same pattern of results was found with decision 2, but to a lesser degree. The percentage of cooperative decisions in 4 person groups remained highest in the important issue conditions, and lowest in the unimportant issue conditions (both actual and fictitious). Cooperation rates for all the treatment conditions were lower than

decision 1, and the decline in cooperative decisions was most dramatic for fictitious conditions. This might have occurred because feedback was held constant in the fictitious group conditions, thus creating a feeling of competition (or lack of cooperation) with others in their group. It should also be noted here, as a reminder, that feedback in actual groups varied according to the actual decisions made within each group. The percentage of cooperative decisions remained greater than 50% for participants in groups of 4, both actual and fictitious, when the issue was viewed as important. This was not the case for the other conditions.

The pattern for decision to donate lottery winnings is different, as it perhaps should be. The likelihood of donating was highest in actual groups vs. fictitious groups, and when the issue was considered important rather than unimportant. To better understand the implications of this and our other findings, we will spend the remainder of this paper looking at what each measure might have to say about the other measures.

Implications

Several theories associated with the activation of social and personal identities were discussed previously. According to the social identity perspective described by Chase (1992), judgments of in-group variability will depend on whether social identity or personal identity has been engaged at the time the judgment is made. It appears that for actual groups, social identification with the group was enhanced, and for fictitious groups personal identification with this issue was enhanced.

Past research in social dilemmas has shown that face to face discussions have a positive impact on contribution rates in public goods situations by enhancing group identity (Orbell, van de Kragt & Dawes, 1988). However, Bouas and Komorita (1996) found that even though face to face discussion enhanced social identity, it did not necessarily lead to cooperative decisions. Findings from the present investigation are consistent with Bouas and Komorita with respect to social identity. Actual groups engaged in face to face discussions had greater social identity than those in fictitious groups. In fact, even people that viewed the issue as unimportant, and had face to face discussions about the issue, were no different with respect to social identity than those that viewed the issue as important. In addition, contribution decisions were not consistent with levels of social identity with respect to actual groups..

The pattern of cooperative contribution decisions made for decision 1 in fictitious groups was consistent with their pattern of social identity achieved. However, it is also the case that personal identity with the issue was engaged to a greater degree in fictitious groups than in actual groups. Groups of 4 and 8 in important conditions, as well as groups of 8 in unimportant issue conditions, made more cooperative decisions than groups of 4 in unimportant issue conditions. When comparing the patterns of social identity, personal identification with the issue, and decision 1 cooperativeness, it would seem that face to face discussions were successful in activating social identity to the detriment of personal identification with the issue in actual groups but not fictitious groups. Personal identification with the issue seems to have been more influential than social identity with respect to cooperative contribution

decisions in fictitious groups; fictitious groups indicated (with the exception of unimportant issue groups of 4), higher levels of personal identification and cooperativeness at decision 1.

For decision 2, cooperative contributions dropped in both actual and fictitious groups. However, this decrease in contributions was most pronounced in fictitious groups. Social identity seems to have remained salient in actual groups compared to fictitious groups, possibly serving as a buffer from the effects of feedback about decision 1. Although differences in feedback between actual and fictitious groups may have contributed to differences in the degree of decline in cooperative contributions, the public goods dilemma game was not directly associated with issue importance. The public goods game was, however, associated with the social behavior of the group. Therefore, if personal identification with the issue was activated more in fictitious groups than social identity, it is reasonable to expect more of a decline in cooperativeness in the fictitious groups.

Findings from the self-efficacy measure are similar to the ideas of Dunleavy (1988). According to Dunleavy, perceived self-efficacy at the individual level may be enhanced if one believes the perceived collective is strong enough to achieve the collective goal. Similarly, if personal identification with the issue was activated in fictitious groups, perceived self-efficacy may have been enhanced for these participants if they believed the issue was strong.

The pattern of results for contribution decisions 1 and 2 in the public goods game were different from the actual decision to donate the lottery winnings

(decision3), as perhaps it should have been. There was only a main effect for issue importance. People who viewed the issue as important were most likely to donate the money to the cause in the vignette. Over 50% of participants in actual and fictitious groups of 4 and 8 with the issue viewed as important chose to donate the money to the cause. This was not the case for non-important issue conditions. This pattern of donation decisions was most pronounced in fictitious groups where personal identification with the issue was greater relative to actual groups.

One might conclude that when face to face discussion was not available, and the issue was important, subjects' personal identification with the issue was promoted and donations were more likely. In contrast, a donation decision was least likely when conditions did not promote personal identification with the issue, i.e., in actual and fictitious groups of 4 and 8, when the issue was unimportant.

The use of fictitious groups for research concerned with contributions toward public goods may be more reflective of real world circumstances, not only with respect to social dilemmas but also because of an increasing reliance on computer mediated communication. These results suggest that face to face discussions may be conducive toward enhancing social identity, as seen with individuals in actual groups in unimportant issue conditions. These results also reveal that social identity can be achieved without face to face discussion. Indeed, face to face discussions may be a distraction when trying to achieve some objective. In other words, without face to face discussion, groups may be able to focus more on the issue at hand. Although there were no distinctions between actual and fictitious groups when it came to contribution

decisions in the public goods game with respect to issue importance and group size differences, fictitious groups had significantly higher levels of personal identification with the issue and perceived self-efficacy than actual groups. Also, donation decisions to give up the lottery winnings were highest in the important issue conditions in fictitious groups.

The information obtained from this study is illustrative of how level of personal identification with an issue considered important and social identity compare (and perhaps combine) in a public goods situation. One might conclude that most social dilemma games in the lab may not be reflective of actual real life processes that are associated with contribution decisions for public goods. According to these data, cooperative contribution decisions made in this study were not reflective of social identity in actual groups. Even though cooperative contribution decisions were greater when the issue was viewed as important, groups size effects remained. Neither personal identification with the issue nor social identity with the group were strong enough to maintain cooperative contribution decisions after feedback in either actual or fictitious groups. The data show that the main hypothesis was supported: Actual donation decisions were significantly greater when the issue was viewed as important, regardless of group size, even in the face of the potentially detrimental effects of feedback.

This study also demonstrates that fictitious groups may represent a more valid model of actual behaviors when it comes to studying public goods social dilemmas. Results appear to be clearer without the possible extraneous effects that may occur

with group discussion. This may be especially true for studies of public goods when decisions to donate seem to be primarily based on personal identity with an issue and not necessarily on social identity with a group.

Conclusions

This study revealed that, although social identity was obtained, it seems more likely to have occurred due to face to face discussion rather than with the issue importance manipulation. Actual groups had significantly greater social identity than fictitious groups overall, and actual unimportant issue groups had comparable levels of social identity to actual/important issue groups. Although important issue conditions had higher levels of social identity and cooperative decisions, groups of 4 had greater social identity than groups of 8. The pattern of cooperative contributions in both decision 1 and decision 2 were, however, consistent with social identity, i.e., cooperative contributions were greatest in actual groups of 4 with the issue viewed as important. This last finding indicates that, while social identity might facilitate cooperative decisions, it does not appear to be an effective means of dealing with the negative effects of group size in public goods dilemma games.

Personal identification with the issue was a stronger indicator of cooperative decisions in public goods games. Fictitious groups had significantly higher levels personal identification with the issue than actual groups. In addition, cooperative contributions were proportionally higher in these groups indicating that activating personal identification rather than social identity may be a more fruitful way to proceed when investigating contributions to public goods.

Finally, this study was effective in showing that issue importance is vital when making actual donations. When individual values and beliefs were activated, decision behavior became consistent with this identity. Issue importance was also effective in overriding the negative effects on donation decisions from group size differences. Social dilemma games may not provide the best task for studying the processes underlying actual donation decisions. Issue importance was the only factor directly associated with donation decisions.

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Figure Captions

Figure 1. Social identity as a function of issue importance, group size and actual vs. fictitious groups.

Figure 2. Personal identification with the issue as a function of issue importance, group size and actual vs. fictitious groups.

Figure 1

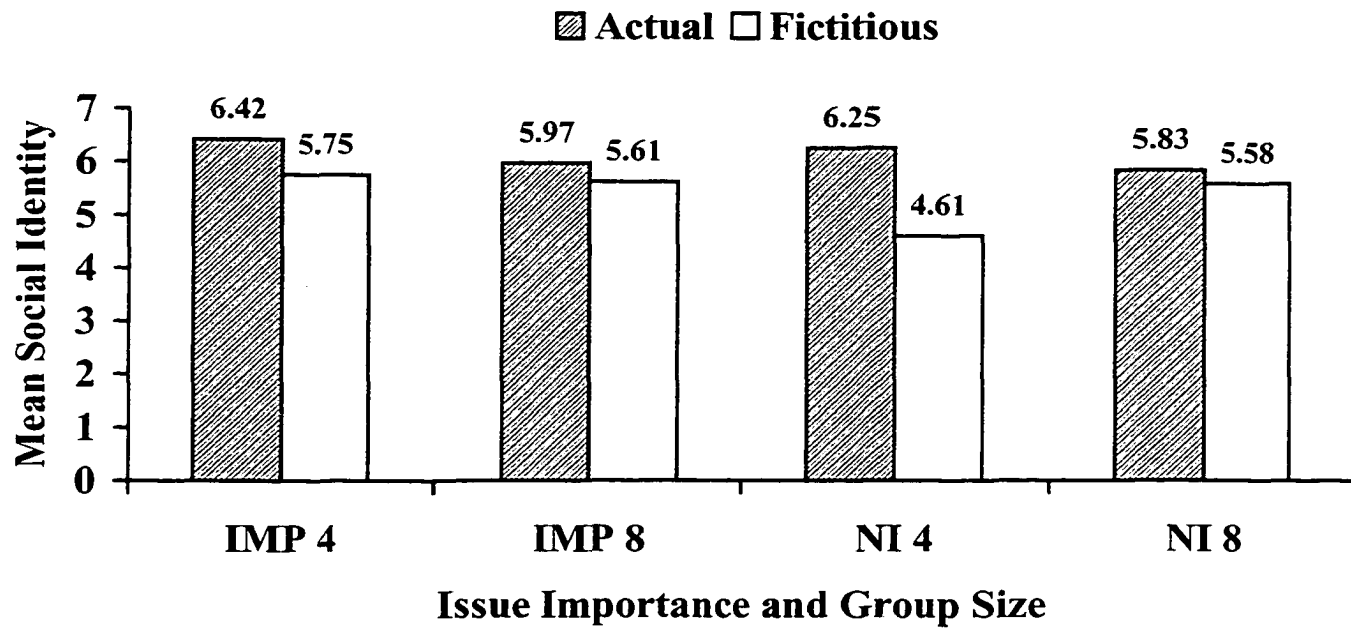


Figure 2

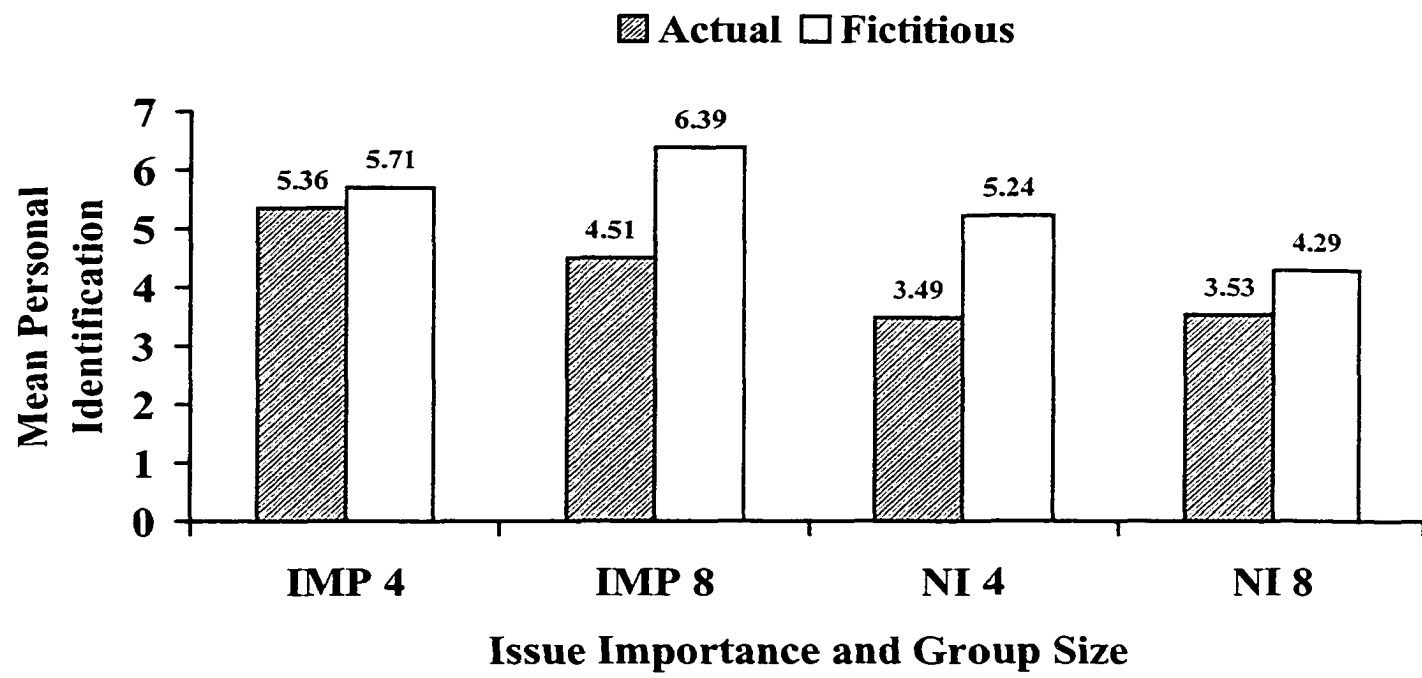


Table 1

Percentage of Participants Making a Cooperative Choice at Decision 1 For Actual and Fictitious Groups in Important and Unimportant Issue Conditions and in Groups of 4 and 8.

Group Size	Actual		Fictitious	
	Important	Unimportant	Important	Unimportant
4	.78	.51	.94	.47
8	.49	.51	.67	.64

Table 2

Percentage of Participants Making a Cooperative Choice at Decision 2 For Actual and Fictitious Groups in Important and Unimportant Issue Conditions and in Groups of 4 and 8.

Group Size	Actual		Fictitious	
	Important	Unimportant	Important	Unimportant
4	.68	.44	.70	.23
8	.45	.49	.44	.41

Table 3

Percentage of Participants Donating Lottery Winnings to the Cause in the Vignette For Actual and Fictitious Groups in Important and Unimportant Issue Conditions and in Groups of 4 and 8.

Group Size	Actual		Fictitious	
	Important	Unimportant	Important	Unimportant
4	.51	.40	.64	.35
8	.52	.33	.72	.23

Appendices

- A. Pre-test Measure
- B. Informed Consent Form
- C. Vignette of the Issue
- D. Verbatim Instructions for Prisoner's Dilemma Games
- E. Outcome Matrices for Group Sizes of 4 and 8
- F. Personal Identification Question
- G. Debriefing Form

Appendix A

This survey will be used to recruit participants for a study in social psychology. Social psychologists study the normal human behavior in the context of various social situations. Please note that all names and phone numbers will be used ONLY for the purpose of contacting you for further opportunities to participate in research to satisfy course requirements and/or extra credit. I would like to thank you for your time.

I. Instructions: Follow the steps below:

Step 1-- Fill in the bubbles indicating your name (**Last name, then first name**).

Step 2-- Bubble in your **Gender** to the right of the name bubbles.

Step 3-- Bubble in your birth date (**need only fill in the year**)

Step 4-- Bubble in your **LOCAL phone number under identification (do not enter your Social Security number)**.

II. Begin answering the following questions by filling in the corresponding bubble to indicate your answer.

1. Do you belong to a sorority or Fraternity? (a) Yes (b) No
2. Do you attend church regularly? (a) Yes (b) No
3. Religion: (a) Catholic
(b) Traditional Protestant, e.g., Lutheran, Methodist, Presbyterian, Episcopalian, Congregational, etc.,
(c) Evangelical Protestant, e.g., Baptist, Christian Assembly of God, etc.
(d) Jewish
(e) Other
(f) No religious affiliation
4. Political Affiliation? (a) Democrat (b) Republican (c) Independent
(d) Other
5. Are you registered to vote? (a) Yes (b) No
6. Are you a: (a) full-time student (b) part-time student
7. Are you employed? (a) part-time (b) full-time (c) not employed

- III.** Rate the following 10 items in terms of **their importance to you** by using the following scale (bubble in the corresponding letter with your choice). If you lack sufficient knowledge of the issue, then bubble in the letter J for no opinion.

A	-----	B	-----	C	-----	D	-----	E	-----	F		J
Not										Very		No
Important										Important		Opinion

8. Maintenance of the community blood supply
9. Impeachment of the president
10. Early release programs for prisoners
11. Being a Democrat
12. Being a Republican
13. Use of marijuana for medical purposes
14. Being in a Fraternity/Sorority
15. Raising the admission standards here at OU
16. Public Television
17. Raising Tuition at OU

- IV.** What is your college major?

18. (a) = Social Sciences (for example, psychology, sociology, anthropology, economics, political science, etc.)
 (b) = Humanities (for example, architecture, music, dance, art history, archaeology, western civilization and culture, etc)
 (c) = Natural Sciences (for example, biology, zoology, chemistry, astronomy, geography, geology, meteorology, physics, nursing, physical therapy, etc)
 (d) = Symbolic and Oral Communication (for example, communication, linguistics, English, foreign language)
 (e) = Education
 (f)= Business

(g)= Engineering
(h)= undecided

- V. Rate the following 10 items in terms of the extent that you **personally AGREE or DISAGREE** by using the following scale (bubble in the corresponding letter with your choice).). If you lack sufficient knowledge of the issue, then bubble in the letter J for no opinion.

A	-----	B	-----	C	-----	D	-----	E	-----	F		J
Strongly										Strongly		No
Agree										Disagree		Opinion

- | | |
|-----|--|
| 19. | Maintenance of the community blood supply |
| 20. | Impeachment of the president |
| 21. | Early release programs for prisoners |
| 22. | Being a Democrat |
| 23. | Being a Republican |
| 24. | Use of marijuana for medical purposes |
| 25. | Being in a Fraternity/Sorority |
| 26. | Raising the admission standards here at OU |
| 27. | Public Television |
| 28. | Raising Tuition at OU |

Appendix B

**Informed Consent Form
University of Oklahoma
Department of Psychology
Individual Consent to Voluntary Participation**

INTRODUCTION

I, _____, voluntarily agree to participate in this study entitled “group decision making.” I understand that this study involves research that will be carried out under the supervision of Dr. Kirby Gilliland.

It is important for me to understand: 1) that participation in this study is completely voluntary; 2) that I may not personally benefit from this study, but that the knowledge gained may benefit others; 3) that I am free to refuse to participate and to withdraw from the experiment at any time without prejudice to me; 4) that if I am participating in this experiment to gain course credit and I decide to withdraw from participating, I might not get the course credit from the experiment.

RISKS/BENEFITS

I understand that the potential risks to my participation are minimal. The benefits associated with participation include exposure to the research process in psychology and course credit. The study is described as follows:

PURPOSE

The purpose of this study is to gather information on what factors might be associated with specific decisions made by groups and/or individuals.

DESCRIPTION

In this experiment, you will be asked to make some anonymous decisions. Based on your choice, and your fellow group members' choices, you will receive points. After all of the group members make their choice, the number of points you obtained will be calculated and converted to lottery tokens. Following the completion of the experiment (May of 2000), all tokens earned will be deposited into pools. One participant from each pool will be randomly selected to receive a cash bonus of \$50. After making the choices, you may be asked to complete some questionnaires. Following the questionnaires, you will be debriefed and dismissed individually. Your participation in this experiment will take no longer than 1 hour and you will not receive any less than 1 credit hour toward course research requirements.

SUBJECT ASSURANCES

By signing this consent form, I acknowledge that I have not waived my legal rights or released this institute from liability or negligence. I understand that if I am participating in this experiment to obtain course credit and I decide to withdraw from participating that I may not get course credit associated with the experiment. I understand that records from this study will be kept confidential, and that I will not be identifiable by name in any reports or publications of this study.

INFORMATION

You can get more information or answers to your questions about this study from Cathy Savage at 325-4543. If you have any questions about your rights as a research subject, you may contact the Office of Research Administration at 325-4757.

SIGNATURES

I have read this informed consent document. I understand its contents and I freely consent to participate in this study under the conditions described in this document. I understand that I will receive a copy of this signed consent form.

DATE _____ (research participant) _____

Appendix C

There are many public services and charities/causes, that depend on contributions to maintain a cause or organization. Organizations such as the American Cancer Society are available to everyone but depends on voluntary contributions. If individuals contribute enough money, these resources will continue to be available. If voluntary contributions fall below a certain point, however, these organizations will be under supported and cease to exist. Obviously, the more people who contribute, the less each has to give. But, of course, it is possible to contribute nothing and still enjoy the resource since access is open to all. However, if everyone fails to contribute, or if total contributions are insufficient, the resource cannot be sustained and no one will enjoy access to it. Thus, each person must decide whether to contribute to the resource and, if so, how much to contribute.

The following is an example:

A coalition of groups in Oklahoma has recently formed to support a lawsuit in the U.S. court of appeals asking for a review of the Drug Enforcement Administration's refusal to classify marijuana as a schedule 2 drug, which would make it more available for medical use. The DEA classifies marijuana as a schedule 1 narcotic which, like heroin, cannot be used for any medical purpose. Schedule 2 drugs such as morphine and cocaine are currently allowed for medical use in some cases. In 1996, an administrative law judge ruled in the coalition's favor by concluding that marijuana could relieve the distress of many critically patients. This ruling was later rejected by the DEA. The coalition groups believe the Drug Enforcement Administration should rewrite its opinion that marijuana has no medicinal value for cancer patients. The Oklahoma appeals court said that the DEA erred when it said that a drug generally must be available and recognized by a substantial segment of the population in order for DEA to rule that the drug has been currently accepted for medical uses. Because marijuana is illegal, the Oklahoma judges determined that it was impossible to meet that test. The coalitions groups are supported by the American Society of Clinical Oncology members who are running short of funds. If additional funding cannot be acquired from individuals supporting the medical use of marijuana the coalition's cause can not be maintained.

Appendix D

Lab Procedures for Actual Groups

1. Informed consent signatures. Have them bring consent forms into lab.
2. Have Ss sit in a circle. Tell them they have been recruited to this experiment based on the similarity of their responses in the pre-testing session with regard to the issue they are about to read and discuss. Hand out a vignette to each participant and ask for a volunteer to read the vignette out loud while the others read along silently. After the vignette is read, ask each participant to make a comment on the issue in the vignette, such as, if they think the issue is important and why, or if they would contribute to it or not. Each person's comment should not last longer than one minute. Instruct them to hold all comments to each other until the end. Keep them in the group NO LONGER than 5 (or 9) minutes.
3. Have Ss move chairs into the cubicles.
4. Collect the informed consent. Make sure that you keep track of who is in which cubicle without them noticing.
5. **Give instructions for allocating points:**

Instructions verbatim:

In front of you is a matrix for the 4 (or 8) members of this group. Each of you is being given 8 points. I will ask you to contribute all of your points to either a joint account or a personal account. The number of points you end up with is based on **the number of others** who choose to allocate their points to the joint account. We can see from the horizontal heading at the top of the matrix that the number of others choosing the joint account runs from zero others to 3 (or 7) others because there are 3 (or 7) other group members besides you. All points allocated to the joint account will earn 100% interest, which means that the total amount allocated to the joint account will be doubled in number. These points would then be distributed equally among all 4 (or 8) members of the group. For example, if you and one other person chose the joint account, there would be 16 points in that account. With this number doubled, there would be a total of 32 points that would be divided equally among you, therefore each member will get 4 (or 2) points. That is what you see on the matrix in the joint row that includes you and one other member choosing the joint account. If you choose to allocate your points to the personal account, the number of points you will end up with after your decision will, again, depend on the number of others who choose the joint account. Points allocated to the personal account will not earn interest but those points are yours and yours alone. For example, if you allocate your 8 points to the personal account and zero or no others choose the joint account you will end up with 8 points. If 2 other group members choose the joint account, and you choose the personal account, you will end up with 16 (or 12) points, and if 3 (or 7) or others choose

joint and you choose personal, you will have 20 (or 22) points. The number of points that you end up with after the decision will be converted into lottery tickets. A drawing will take place at the end of this semester for a prize of \$50. The more points you have the better your chances for winning the lottery. All of your choices will be made anonymously and kept confidential from the other group members.

Does everyone understand?

6. If someone does not understand explain again by giving another example.
7. Have them make their decision by circling either the joint account or the personal account on the slip of paper in front of them and to fold it in half to conceal it from the experimenter (before collecting them).
8. Collect their decision forms.
9. Have them turn over the packet of questionnaires on their left and fill them out in the order they're in.
10. After all Ss have finished filling out the questionnaires, tell them how many people in their group chose the joint account. Have them look at the matrix again and explain how many points they had if they chose the joint account and how many they had if they chose the personal account.
11. Hand them each another account decision slip and tell them they are being given another 8 points. Ask them to choose either the joint account or the personal account by circling one of these choices given the feedback they had received. Once they have all circled an account, ask them to write the words "GIVE" and "KEEP" on this decision slip.
12. Tell them that if they actually do win the lottery, please indicate whether they would like to keep the money or donate it to the cause they read about earlier by circling either give or keep. Have them fold the slip of paper in half to conceal it from the experimenter.
13. Collect the response slips.
14. Hand them the debriefing form and say: "Here is a debriefing about this study. Please note that if you win the lottery you will keep the money. The issue in the vignette is fictitious with respect to Oklahoma. The number of lottery tickets you receive will be based on the first allocation decision that you made. Thank you for participating."

Appendix D

Lab Procedures for Fictitious Groups

6. Informed consent signatures. Have them bring consent forms into lab.
7. Seat each person in a cubicle. Tell them they are a member of a group of 4 (or 8) people and have been recruited to this experiment based on the similarity of their responses in the pre-testing session with regard to the issue they are about to read. Tell them that the other members are at a different location. Hand a vignette to each participant and ask them to turn it over and number down the page from 1 to 12. Have them turn over the sheet of paper and have them read vignette. Instruct them to list 10 to 12 thoughts (in 2 or 3 words for each thought) that occurred to them about the issue in the vignette after they have completed the reading. Leave them to read and list their thoughts for NO LONGER than 5 (or 9) minutes.
8. Collect the informed consent.
4. **Give instructions for allocating points:**

Instructions verbatim:

In front of you is a matrix for the 4 (or 8) members of this group. Each of you is being given 8 points. I will ask you to contribute all of your points to either a joint account or a personal account. The number of points you end up with is based on **the number of others** who choose to allocate their points to the joint account. We can see from the horizontal heading at the top of the matrix that the number of others choosing the joint account runs from zero others to 3 (or 7) others because there are 3 (or 7) other group members besides you. All points allocated to the joint account will earn 100% interest, which means that the total amount allocated to the joint account will be doubled in number. These points would then be distributed equally among all 4 (or 8) members of the group. For example, if you and one other person chose the joint account, there would be 16 points in that account. With this number doubled, there would be a total of 32 points that would be divided equally among you, therefore each member will get 4 (or 2) points. That is what you see on the matrix in the joint row that includes you and one other member choosing the joint account. If you choose to allocate your points to the personal account, the number of points you will end up with after your decision will, again, depend on the number of others who choose the joint account. Points allocated to the personal account will not earn interest but those points are yours and yours alone. For example, if you allocate your 8 points to the personal account and zero or no others choose the joint account you will end up with 8 points. If 2 other group members choose the joint account, and you choose the personal account, you will end up with 16 (or 12) points, and if 3 (or 7) or others choose joint and you choose personal, you will have 20 (or 22) points. The number of points that you end up with after the decision will be converted into lottery

tickets. A drawing will take place at the end of this semester for a prize of \$50. The more points you have the better your chances for winning the lottery. All of your choices will be made anonymously and kept confidential from the other group members.

Does everyone understand?

6. If someone does not understand explain again by giving another example.
15. Have them make their decision by circling either the joint account or the personal account on the slip of paper in front of them and to fold it in half to conceal it from the experimenter (before collecting them).
16. Collect their decision forms.
17. Have them turn over the packet of questionnaires on their left and fill them out in the order they're in.
18. After all Ss have finished filling out the questionnaires, tell them how many people in their group chose the joint account. Have them look at the matrix again and explain how many points they had if they chose the joint account and how many they had if they chose the personal account.
19. Hand them each another account decision slip and tell them they are being given another 8 points. Ask them to choose either the joint account or the personal account by circling one of these choices given the feedback they had received. Once they have all circled an account, ask them to write the words "GIVE" and "KEEP" on this decision slip.
20. Tell them that if they actually do win the lottery, please indicate whether they would like to keep the money or donate it to the cause they read about earlier by circling either give or keep. Have them fold the slip of paper in half to conceal it from the experimenter.
21. Collect the response slips.
22. Hand them the debriefing form and say: "Here is a debriefing about this study. Please note that if you win the lottery you will keep the money. The issue in the vignette is fictitious with respect to Oklahoma. The number of lottery tickets you receive will be based on the first allocation decision that you made. Thank you for participating."

Appendix E

Four-Person Matrix

Choice	Number of Others Choosing Joint			
	0	1	2	3
J (joint)	4	8	12	16
P (personal)	8	12	16	20

Eight-Person Matrix

Choice	Number of Others Choosing Joint							
	0	1	2	3	4	5	6	7
J (Joint)	2	4	6	8	10	12	14	16
P (personal)	8	10	12	14	16	18	20	22

Appendix F

I personally identify with the issue in this experiment.

1	2	3	4	5	6	7	8	9
STRONGLY							STRONGLY	
DISAGREE							AGREE	

Appendix G

DEBRIEFING FORM

Thank you for your participation. You were making choices in a social dilemma. A social dilemma is an experimental model of a variety of real life situations: For example, public television. Note that if everyone contributes (invests) in Public TV (the J account), everyone will receive a pretty good outcome. But if a person doesn't contribute (invests in the P account), he or she not only keeps his or her own contribution, but also gets to watch Public TV for free. Finally if everyone fails to contribute, then everyone will be worse off than if everyone had contributed—no Public TV versus programming on Public TV. Both choices, P and J, are justifiable in terms of points, but one is reasonable for an individual and the other is reasonable for a group.

In this study, we are interested in the effects of identification with a group on choice making in a social dilemma. Previous research tells us that if people share an interest that is important to them personally, a group identity with those relevant others might increase cooperation among the group members. We believe that group members will choose J more often. Will cooperation be greater when an interest in common is discussed vs. not discussed? Will cooperation be primed if group identity is high (pick J more often)? Will group identity be greater in the important issue group than those only in the discussion only group? Finally, will group size make a difference in cooperation rates when an important issue is shared? We are interested in finding out the answers to these questions.

The scenario that you read / discussed was fictitious, although the issue is real. At this point, you should also know that once the social dilemma/investment game began, you may or may not have received the actual feedback of your group members, but rather a pre-planned strategy where some groups are given cooperative feedback and some were given competitive feedback with respect to the other group members. These pre-planned strategies were used in the interest of experimental control.

The lottery will be held the first week in December and the results will be posted outside Room 731 in Dale Hall Tower. You can check the results there and if you won, you may claim your \$50 there, too. If you win, e-mail me at csavage@psychology.psy.ou.edu.

Finally we ask that you not discuss the specifics of this experiment with other students until the end of the semester.

Again, thank you very much for your participation. If you have any questions or comments about this work, feel free to contact Cathy Savage (709 DAHT 325-4511).