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Collective Action in Social Dilemmas:  
The Impact of Group Identification on  
the Selection and Cooperation with Leaders

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## Abstract

Two experimental studies investigated the role of group identification in the selection and cooperation with a leader to manage a public good dilemma. The findings of the first study revealed that there was a general preference to select leaders with a legitimate power base (i.e., democratic, elected, and internal, rather than autocratic, appointed, and external leaders), but these preferences were particularly pronounced when people's identification with their group was high rather than low. The second study complemented these findings by showing that when group identification was high a relational leader (i.e., who builds positive intragroup relations) was as efficient as an instrumental leader (i.e., who punishes noncontributing members) in raising contributions. However, when group identification was low an instrumental leader appeared to be far more effective. These findings suggest that the effectiveness of leaders in managing social dilemmas will depend upon the match between characteristics of the leader and group.

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The welfare of smaller and larger communities in society depends to a large extent on the amount and quality of services provided to members in the form of schools, community centres, churches, sport and social clubs. Although everyone perceives the importance of these services it can be difficult to maintain them, because they are in principle accessible to all citizens regardless of their individual contribution. In the social-psychological literature such problems are generally referred to as social dilemmas or, more specifically, public good dilemmas (Dawes; 1980; Komorita & Parks, 1994; Messick & Brewer, 1983; Stroebe & Frey, 1982; Van Lange, Liebrand, Messick, & Wilke, 1992). Efforts to provide and maintain these goods could entail activities to encourage group members to make voluntary donations from time to time. Perhaps more successful in the long run, however, are attempts to create a group structure which enforces regular contributions from group members (Buckley, Burns, & Meeker, 1974; Olson, 1965; Ostrom, 1990; Yamagishi, 1986). A common form of collective action is the adoption of a group authority or, particularly in small group dilemmas, a leader to regulate the provision of common goods (Edney, 1980; Messick & Brewer, 1983; Piatt, 1973).

Previous research has contributed much to our knowledge about conditions under which groups decide to appoint leaders to manage social dilemmas (Messick et al., 1983; Rutte & Wilke, 1984; 1985; Samuelson, 1991; Samuelson & Messick, 1986; 1995; Samuelson et al, 1984). It is fair to note, however, that this body of research has only partially addressed the role of leadership in social dilemmas, first, because it assumes that leaders are given **complete control over a particular resource or good. In the real-world however**

groups seldom prefer an autocratic leader; groups usually choose leaders that can be controlled to some extent (for recent overviews of the leadership literature, see Bass, 1990, 1997; Hollander, 1985; Smith, 1996). Moreover, a second unresolved issue in the literature is whether the adoption of a leader actually helps in solving social dilemmas. Previous research has been limited to studying when groups decide to appoint leaders rather than how a particular leader might contribute to solving the dilemma (Foddy & Cretenden, 1994; Tyler & Degoey, 1995). Adopting a leader, however, may not always be the most appropriate collective action. Indeed, this solution could fail if the attributes of the leader do not correspond to the features of the group or situation at hand (cf. contingency theories of leadership; Fiedler, 1978; Vroom & Yago, 1978).

The current research examines the functioning of leaders in managing public good conflicts by looking at two interrelated collective actions. The first study explores when groups select a leader to facilitate the provision of the common good and what kind of leader structures they prefer. The focus of the second study is on how the adoption of a leader affects group members' contribution decisions. It is proposed that these collective actions are importantly shaped by the strength and quality of the social relationships within the group.

### Leadership in Social Dilemmas

When group members wish to appoint a leader to regulate the provision of a common good, they have to make decisions about who they are going to assign as a leader, what the selection method will be, and how much power the leader should be given over group members (Bass, 1990; French & Raven, 1959; Hollander, 1985; Smith, 1996).

In terms of power position, groups could decide to adopt a leader with autocratic power, which gives the leader the freedom to do whatever he or she considers necessary to manage the good, including determining how much each of the group members should contribute. Although this leader structure

has been investigated frequently in social dilemma research (e.g., Messick et al., 1983; Rutte & Wilke, 1984, 1985; Samuelson et al., 1984), it is actually rarely found in modern society (i.e., except perhaps in religious cults; Hollander, 1985). In the real-world, groups usually assign democratic leaders who can exercise some control over group members, but they are accountable for the decisions they make and can be replaced when needed (Bass, 1990). Furthermore, groups could also choose a leader with instrumental power who attempts to manage the dilemma by imposing fines upon non-contributing group members (cf. sanctioning system; Yamagishi, 1986; 1988). Finally, a leader could be adopted whose primary aim is to establish good relationships with and between group members (i.e., relational leader; cf. Bass, 1990; French & Raven, 1959; Smith, 1996).

In terms of the selection method, there are broadly two distinct ways in which the leader can be assigned to the group. The leader could either be appointed by an external authority or he or she could be elected by the group members themselves (e.g., through a voting procedure; Hollander & Julian, 1970).

Finally, in helping to manage a dilemma situation group members could choose a leader from inside the group who shares the group attributes, norms, and values, or they could appoint somebody from outside. Previous social dilemma research has focused exclusively on the adoption of internal leaders (Messick et al., 1983; Samuelson et al., 1984), but groups might under some conditions prefer to appoint an external leader (Ostrom, 1990).

#### Antecedents of Choosing a Leader

When do groups choose to appoint a leader to manage a public good conflict and what kinds of leaders do they prefer? Firstly, groups may opt for a leader because they are dissatisfied with their outcomes obtained within the existing leaderless dilemma structure (Messick et al., 1983; Samuelson & Messick, 1995; Samuelson et al., 1984). For example, when groups repeatedly

fail to produce the desired good through voluntary cooperation, individual members could decide to move from an unstructured to a structured group situation to enforce contributions from group members. Social dilemma research has shown that group members will invest in the creation of an authority structure if they consider the good to be important, but realize it cannot be provided by voluntary contributions alone (Olson, 1965; Yamagishi, 1986; 1988).<sup>1</sup>

A common assumption underlying current theories of collective action (i.e., rational choice and structural goal/expectation theories; Hardin, 1968; Olson, 1965; Ostrom, 1990; Samuelson & Messick, 1995; Stroebe & Frey, 1982; Yamagishi, 1986) is that groups create an authority or leader structure primarily, because it facilitates the management of a particular collective good or resource. Although this may be true in general, we believe a purely instrumental perspective is too narrow to fully understand collective actions within groups. First, these theories fail to make predictions about the kind of leaders or authorities that groups are likely to adopt. If group members are primarily concerned about improving the group's outcomes they might decide to give up their decisional freedom and appoint an autocratic leader to secure the good. Yet, there is ample evidence from both experimental and field research to suggest that, even in crisis situations, group members wish to keep some personal control over their contribution decisions (Rutte & Wilke, 1984, 1985; Samuelson, 1993; Tyler & Degoey, 1995).

Second, current theories of collective action do not address the issue what happens once a collective solution is implemented in a dilemma situation (i.e., how does it change people's attitudes and decisions?; cf. Van Vugt, 1997; Van Vugt, Van Lange, Meertens, & Joireman, 1996). Obviously, the adoption of an autocratic leader will effectively eliminate the social dilemma as group members will have no choice whether to contribute or not. As mentioned earlier, however, in real-world dilemmas leaders are usually given only limited

power; hence, group members still have to decide if they wish to cooperate with the leader in solving the dilemma. It is rather unlikely that this decision will be determined solely by instrumental concerns (Bass, 1990; Hollander, 1985; Tyler, 1989, 1994; Tyler & Lind, 1992).

### A Relational Model of Collective Action

The fundamental assumption of the current research is that collective actions (i.e., selecting and cooperating with leaders in solving dilemmas) are also shaped by relational motives, concerns about the effects of a leader on the social relationships within the group. For example, will a leader be able to develop a positive relation with group members, will he or she build trust between group members, and treat the group with dignity and respect? A major determinant of these concerns flows from the perceived legitimacy of the leader (French & Raven, 1959; Tyler & DeGoey, 1995; Tyler & Lind, 1992). The leader's legitimacy is derived from three main sources, the type of exercised power, the selection method of the leader, and their personal attributes and qualities (e.g., Bass, 1990; Hollander, 1985; Levine & Moreland, 1990).

First, the leader's legitimacy will be greater to the extent that group members can exert influence on the leader's decisions (i.e., decision control; Thibaut & Walker, 1975). Moreover, a leader will be considered more legitimate if group members are allowed to have a say in the choice of the leader and have the opportunity to replace him or her when necessary (Hollander, 1985; Hollander & Julian; 1970). Finally, leaders' legitimacy also derives from the perceived similarity between the leader and group in terms of shared attributes, norms and values (i.e., prototypical leader; Hains, Hogg, & Duck, 1997; Hogg, 1996).

Accordingly, if relational concerns play a role in determining the group's choice of a leader in managing a common good then we would expect groups to have a consistent preference for adopting leaders that are legitimate. Thus, groups should prefer democratic above autocratic leaders, elected above

appointed leaders, and leaders from inside rather than from outside the social group.

### Group Identification and the Selection of Leaders

An important implication of a relational model of collective actions is that such decisions should be moderated by the strength and importance of one's social ties with the group. Traditionally, collective action research has been relatively mute about the effects of social and group identification (cf. Kramer & Goldman, 1995; Tyler & DeGoey, 1995). Yet, there are good reasons to believe that people's sense of group identity does play a role in determining when they decide to adopt and cooperate with a leader in managing a public good.

First, individuals are more likely to contribute voluntarily to the provision of a good when their identification with the group is high (e.g., Brewer & Kramer, 1986; Brewer & Schneider, 1990; Kramer & Brewer, 1984). The extent of individual cooperation tends to be higher among these individuals either because they place greater value in the good itself (De Cremer & Van Vugt, 1998; Kerr, 1996) or because they have greater trust in the cooperative intentions of fellow group members (Brann & Foddy, 1987; Brewer & Kramer, 1986; Kramer & Brewer, 1984). Thus, high identifying group members might perceive it as unnecessary to appoint a leader as they believe the group will be able to provide the good by voluntary contributions of group members.

However, we believe that people's motives for adopting a leader may also fulfill important social and relational needs. For example, groups may decide to appoint leaders to highlight their group belongingness, to stress the importance of group membership, or to accentuate the differences between their group and other groups (Hogg, 1996; Smith & Fritz, 1987). These motives will have important implications for the kind of leader groups wish to adopt to manage a collective good. When group members' identification with their group is low, their primary concern will be to ensure the public good is provided rather than trying to maintain good relationships with other group members.



Accordingly, they may prefer a leader with a strong power position to enforce contributions from uncooperative group members. Moreover, because they lack trust in their fellow group members (e.g., Kramer & Brewer, 1984; Messick & Brewer, 1983), they might prefer to appoint a leader from outside the group, and preferably somebody who is externally appointed rather than elected by group members.

Yet, when people strongly identify with their group they will not only be focused on the provision of the good itself, but also on how the leader will affect the relationships within the group. Thus, they will seek for a leader who is able to protect the group's status and enhance the individual standing within the group - these are attributes from which people derive self-esteem in groups (cf. group/value model; Tyler & Lind, 1992). These relational needs are probably best fulfilled by leaders with a legitimate power base, in other words, leaders who share the group values, whose actions can be influenced and controlled by group members, and who can be replaced whenever it is considered necessary.

The above gives rise to the following hypotheses about the effects of group identification on individual and collective actions in public good dilemmas. First, it is expected that when group identification is high group members will make greater voluntary contributions (Hypothesis 1), and will have a weaker preference for collectively adopting a leader (Hypothesis 2). Second, consistent with most (but certainly not all) previous research (Messick et al., 1983; Samuelson et al., 1984) the preference for adopting a leader should be greater among groups that have previously failed to provide the good through voluntary contributions (Hypothesis 3). Third, in choosing between different leader structures group members will generally favor a legitimate leader, which culminates in a preference for a democratic rather than autocratic leader, an elected rather than appointed leader, and a leader from inside ("internal leader") rather than outside the group ("external leader"; Hypothesis 4a). Finally, in line

with a relational interpretation, the preferences for legitimate leaders are likely to be stronger among members whose group identification is high rather than low (Hypothesis 4b).

#### Differentiating Between Instrumental and Relational Needs Underlying Collective Action

Above we have offered two mutually non-exclusive explanations for why groups engage in collective action (i.e., selecting and cooperating with leaders). According to traditional theories of collective action, such decisions result from people's concerns with their immediate outcomes in the social dilemma (i.e., rational choice theory; structural goal/expectation theory; Olson, 1965; Ostrom, 1990; Samuelson & Messsick, 1995; Yamagishi, 1986). Additionally, we propose a relational model which argues that collective actions also reflect a concern with maintaining positive social relationships between group members (cf. Tyler & Dawes, 1993).

Is it possible to differentiate between these two models of collective action? First, we could look at how the group members' expectation about their group's performance affect their preferences for choosing a leader. The instrumental approach predicts that when the group has repeatedly failed to provide the good by voluntary contributions, group members will opt for the adoption of a leader (see Hypothesis 3). Moreover, following an instrumental model they should prefer a leader with a strong power base (i.e., autocratic), who is appointed externally rather than elected by the group and preferably comes from outside their group because this might increase the chances of obtaining the good the next time. Alternatively, a relational model would predict that regardless of the group's previous failure to obtain the good a democratic, elected, and internal group leader will be preferred (Hypothesis 4c).

Second, the relative importance of instrumental versus relational needs in collective action can be further assessed by looking at how groups actually perform under a leader structure that represents either one of these motives.

First, based upon an instrumental model of collective action we would expect group members' contributions to rise with an instrumental leader who is able to punish non-contributing group members (Hypothesis 5a).

Yet, if relational concerns also play a role in people's decision to cooperate with a leader then we would expect contributions to rise with a leader without any instrumental power, but one that promotes good intragroup relations, for example, by providing encouragement and building trust, and by treating group members fairly and respectfully. This relational leader, however, should only have an impact in groups where group members' attach importance to the social connections within the group (cf. group/value model; Tyler & Lind, 1992). When they do not assign much weight to the quality of social relationships, their decisions should be hardly influenced by a relational leader. Thus, when group identification is high a relational leader is likely to be as effective as an instrumental leader in raising contributions from group members; however, when identification with the group is low, an instrumental leader is likely to be far more effective than a relational leader (Hypothesis 5b).

Finally, following the group/value model (Tyler & Lind, 1992), it is hypothesized that a relational (rather than instrumental) leader will have a positive effect on the self-esteem of group members, in particular, among members whose group identification is high rather than low (Hypothesis 5c).

### Study 1

The main purpose of Study 1 was to look at the moderating effects of group identification on the selection of leaders in a social dilemma situation (i.e., Hypotheses 1 to 4). To test our hypotheses we utilized a traditional step level public goods paradigm (Van de Kragt, Orbell, & Dawes, 1983), whereby experimentally created groups are able to provide a good for themselves if a sufficient number of group members is willing to contribute their endowment. In this task environment we manipulated the level of group identification - by highlighting the comparisons with referent social groups - as well as the

number of contributors needed to provide the bonus (i.e., provision point).<sup>2</sup> Moreover, after the first contribution session false feedback was provided about the previous success or failure of the group in providing the bonus. After receiving this information, participants indicated their preference for a leader structure to regulate the provision of the bonus in a second (and final) contribution session.

### Method

Participants and design. Participants in this computer-led experiment were 96 undergraduate students from Southampton University (i.e., 62 females, 33 males and one gender anonymous), aged between 18 and 22. For each experimental session six people were invited to the laboratory simultaneously. Within each session they were randomly assigned to one out of eight experimental conditions, following a 2(Group Identification: High vs. Low) by 2(Provision Point: High vs. Low) by 2(Feedback: Success vs. Failure) between participants design.

Procedure. Upon arrival at the laboratory, each participant was placed in a separate experimental cubicle where they were seated in front of a computer screen. All information was transferred via the computer. The experiment started with a brief introduction how to use the computer. Thereafter, participants were informed about the nature of the study. It was explained they were going to play an investment game with their group, the structure of which was said to resemble a diversity of investment problems in modern society (e.g., buying a television license). At the start of the game, each group member would receive an endowment of £3 (approximately \$5), which they could either keep for themselves or invest in a fund in order to acquire a group bonus of £30 (i.e., £5 per person). It was explained that there was a minimum number of contributors needed to achieve the group bonus (i.e., for a similar procedure, see Van de Kragt, Orbell, & Dawes, 1983). Furthermore, it was explicitly stated that if the group succeeded in acquiring the

£30 bonus then each of the six group members would receive £5, regardless of whether they made a contribution. However, if the group failed then only those who invested would lose their endowment. After the experimental sessions, we told participants that we could not afford to pay all participating individuals the amount of money they earned. Instead, there would be a lottery at the end of the study, whereby all groups competed for one prize of £48 (£8 per group member).

Manipulation of provision point. In half of the experimental conditions it was explained that at least five out of six group members needed to invest their endowment in order to acquire the group bonus. In the other conditions it was stated that at least three people needed to contribute their endowment.

Manipulation of group identification. After these instructions, participants received information about the context of the study. First, they were told that the experiment was conducted simultaneously at various universities in the South of England (i.e., Reading, Bristol, Portsmouth, Exeter, Southampton). These universities were chosen, because they were geographically close to Southampton University, and fairly similar in size and entry requirements for undergraduate study. Accordingly, they were believed to provide a relevant comparison target for our participants. Subsequently, half of the participants were explicitly told that the aim of the experiment was to compare how well student groups from Southampton University were doing in these situations compared to groups from the other universities (High identification-condition). The other half were told that the primary aim of the study was to examine how well students in general were doing in these kind of situations (Low identification-condition).

Several results indicated that the manipulation of group identification had been successful. First, it was found that participants in the high (vs. low) identification groups indeed identified more strongly with their group ( $M$ 's = 4.69 vs. 3.87;  $SD$ 's = 1.54 and 1.70),  $F(1, 94) = 6.14$ ,  $p < .01$  ("How much do you

identify with your group; 1 = not at all, 7 = very much). Secondly, in the high (vs. low) identification groups the fellow group members were rated as both more trustworthy ( $M$ 's = 5.20 vs. 4.42;  $SD$ 's = 1.31 and 1.39),  $F(1, 94) = 13.74$ ,  $p < .001$ , and honest ( $M$ 's = 5.12 vs. 4.07;  $SD$ 's = 1.52 and 1.57),  $F(1, 94) = 4.02$ ,  $p < .05$  ("How .....do you consider your fellow group members to be? 1 = not at all..., 7 = very much...").

Contribution decisions. After participants read these instructions and answered questions referring to them, they were asked if they wished to contribute their endowment to the group (1 = yes, 2 = no).

Feedback manipulation. Subsequently, they were informed about the group outcome. In half of the experimental conditions, participants were informed that their group had failed to obtain the bonus (Failure-condition). Accordingly, those who had invested their endowment had lost it. In the other conditions, the group was successful in obtaining the bonus (Success-condition) and every member was promised a bonus of £5.

Opportunity to choose leader. Participants were then told that they would play a second round of the investment game. It was explained to them that in the real-world many groups facing a similar kind of problem had chosen a group leader to ensure the provision of the collective good. Subsequently, participants were asked to indicate whether they preferred to appoint a group leader (7), or maintain the status quo situation (1).

Thereafter, they were told that for the second session a group leader would be allocated to their group, but that the group could decide what kind of leader they would like to have. Accordingly, they received descriptions of six different leader types, and they were asked to make a selection between two "antagonistic" leader types on a bipolar seven point scale. Subsequently, they indicated their preference for each leader type separately (1 = no preference at all, 7 = very strong preference). After these questions the experiment was

interrupted. Participants were then debriefed about the purpose of the research and they were thanked for their participation.

Democratic vs. autocratic leader. The democratic group leader was described as "a leader who will ask each member of your group informally about their intended contribution decision, and then makes a decision which group members should contribute their endowment." In contrast, the autocratic leader was portrayed as "a leader who decides for the group which group members should contribute their endowment."

Elected vs. appointed leader. The person to serve as the group leader was someone who would either be "chosen by the majority of the group members" (elected) or "appointed by the experimenter" (appointed).

Internal vs. external leader. The internal leader was described as "a person from Southampton university" and the external as "a person from one of the other universities participating in this experiment."

### Results and Discussion

Contribution decisions. A crosstabs analysis was performed to examine the impact of group identification on contribution decisions. Consistent with Hypothesis 1, this analysis revealed that there was a greater proportion of contributors in the high (88%) than low identification conditions (70%),  $\chi^2(1, N = 96) = 4.47, p < .05$ . This effect was found to be independent of the provision point to obtain the bonus,  $\chi^2(1, N = 96) < 1$ .

Preference for leader vs. status quo. To test Hypothesis 2, we analyzed the preference for (1) maintaining the status quo versus (7) adopting a leader in a ANOVA with the full factorial design: 2(Group Identification: High vs. Low) by 2(Provision Point: High vs. Low) by 2(Feedback: Success vs. Failure).

First, this analysis revealed a main effect for group identification,  $F(1, 92) = 8.41, p < .01$ . Consistent with Hypothesis 2, the means showed that people in the high identification-condition ( $M = 3.78; SD = 1.83$ ) exhibited a weaker preference for adopting a leader than people in the low identification-condition

( $M = 4.74$ ;  $SD = 1.91$ ). This effect was not qualified by information about the provision point or by the group's success or failure to obtain the good (both  $F$ 's  $< 1$ ).

Second, a main effect was found for feedback,  $F(1, 92) = 24.30$ ,  $p < .001$ , which is consistent with Hypothesis 3. Individuals were found to exhibit a stronger preference for adopting a leader when the group had previously failed to obtain the bonus ( $M = 5.08$ ;  $SD = 1.57$ ) than when it had been successful ( $M = 3.78$ ;  $SD = 1.82$ ).

Choosing between different leader structures. In Hypotheses 4a to 4c we made predictions regarding the kind of leaders that group members would select to help the group provide the good in the second contribution session.

First, we predicted that in choosing between different leader structures group members would favor leaders with a legitimate power base (Hypothesis 4a). To test this hypothesis, we analyzed the mean preference for each of the six possible leader types, and conducted pair wise comparisons between each set of leaders. Table 1 shows that participants drew a distinction between two groups of leaders, whereby they clearly favored democratic, elected, and internal leaders above autocratic, appointed, and external leaders (i.e., the low mean preferences indicate that they, in fact, dislike such leader structures). Hence, in accordance with our hypothesis groups clearly prefer to adopt leaders with a legitimate power base (i.e., in terms of position, selection method, and type of power).

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Insert Table 1 about here.

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Second, the expectation was that preference for a legitimate leader structure would be highest in high identification groups (Hypothesis 4b). To test this we conducted a MANOVA on the ratings between two contrasting leader



types (democratic [1] vs. autocratic [7], elected [1] vs. appointed [7], internal [1] vs. external leader [7]), using the full factorial design.

The multivariate analysis revealed a significant multivariate effect for group identification,  $F(3, 86) = 6.32$ ,  $p < .001$ . Univariate effects associated with this multivariate effect showed significant differences between two out of three contrasting leader structures, elected vs. appointed leader,  $F(1, 88) = 9.51$ ,  $p < .01$ , and internal vs. external leader,  $F(1, 88) = 10.76$ ,  $p < .001$ . No difference was found for the comparison between a democratic vs. autocratic leader,  $F(1, 88) < 1$ .

The means associated with these effects generally support Hypothesis 4b. Among the high identification group there was a relatively stronger preference for selecting an elected rather than appointed leader ( $M = 2.51$ ;  $SD = 1.78$ ) than among the low identification groups ( $M = 3.47$ ;  $SD = 1.24$ ). Also, in the high identification groups a greater preference was found for an internal (vs. external) leader ( $M = 2.59$ ;  $SD = 1.29$ ) than in the low identification groups ( $M = 3.51$ ;  $SD = 1.44$ ). But, both the high and low identification groups displayed an equally strong preference for choosing a democratic rather than autocratic leader ( $M$ 's = 2.53 vs. 2.64,  $SD$ 's = 1.67 and 1.81; n.s.).

Are these preferences shaped merely by relational concerns or by concerns about the group's outcomes? To explore this we examined how the leader preferences were affected by knowledge about the previous group's failure to obtain the good. In support of Hypothesis 4c, it was found that the preferences for a democratic (vs. autocratic), an elected (vs. appointed), and an internal (vs. external) leader were independent of the feedback about the previous group performance,  $F(3, 86) < 1$ . There was also no evidence for an interaction between feedback and group identification,  $F(3, 86) < 1$ .

Taken together, these results provide good support for our predictions that group identification influences both individual (i.e., contribution decision; Hypothesis 1) and collective actions in public good dilemmas (i.e., adopting

leader; Hypothesis 2). Moreover, replicating previous research the preference for adopting a leader was higher when groups had previously failed to obtain the good (Hypothesis 3). Finally, in accordance with a relational model, in choosing between different leader structures there appears to be a consistent preference to adopt a leader with a legitimate power base (democratic, elected, internal leader; Hypothesis 4a), but this preference is particularly strong among people in the high identification groups (Hypothesis 4b). Finally, these preferences are independent of expected poor group outcomes (Hypothesis 4c).

### Introduction to Study 2

The main purpose of the second study was to investigate a second aspect of collective action - the actual cooperation with a leader -- by examining how the implementation of a leader would affect the contribution decisions of group members in providing the common good. To differentiate between instrumental and relational motives, we examined how the contribution levels within these groups would vary with leaders with a different power base (i.e., instrumental vs. relational leader; Hypothesis 5a). Moreover, we tested the effectiveness of each of these leader types in promoting cooperation within groups differing in strength of group identification (Hypothesis 5b), and examined how these leaders would affect the self-esteem of group members (Hypothesis 5c).

To examine these hypotheses, we used a similar public goods task as in Study 1 with a few modifications. First, the contribution decisions were made continuous rather than dichotomous in order to detect finer changes in individuals' contribution behavior as a result of the implementation of a leader structure. Second, the task was extended to eight contribution sessions, the first block of four sessions without and the second block of four sessions with a group leader. Third, to justify the implementation of a group leader, the group members received consistently negative feedback about the group's performance in previous contribution sessions. Fourth and finally, based upon Study 1 there was no reason to expect behavioral differences as a result of the

provision point. Therefore, in Study 2 the provision point of the public good was fixed at an intermediate level of task difficulty.

### Method

Participants and design. Ninety three Southampton University undergraduate students participated in Study 2 (i.e., 59 females and 34 males, aged between 18 and 25). Six participants were invited simultaneously to the laboratory and each participant was randomly divided among the experimental conditions, using a 2 (Group Identification: High vs. Low) x 2 (Type of leader: Instrumental vs. Relational) x 8 (Contribution sessions) factorial design. The first two were between-participants factors, whereas the third was a within-participant factor. The cell sizes varied from 22 to 24 subjects per condition.

### Procedure

The experimental procedure was fairly similar to the one employed in Study 1. With regard to the public good task, it was explained that there would be eight contribution sessions, and that for each session each group member would receive an endowment of £3. A group bonus of £30 could be earned if the group as a whole contributed a total of £12. The participants were free to choose any amount between 0 and 300 pence to help the group provide the bonus.

After explaining these rules, participants were asked some questions to check their understanding of the task. After answering them, the manipulation of group identification was introduced.

Manipulation of group identification. The manipulation of group identification was the same as the one employed in Study 1. Participants were informed that the research was conducted simultaneously at different universities in the South of England. In the high identification conditions participants were told that the contribution decisions of Southampton University students would be compared with those of student groups from other universities. In the low identification conditions participants were told that the

experiment was concerned with examining how students generally behave in such situations.

Manipulation check. Before starting with the first contribution session, four questions were asked to check the identification manipulation (Brown et al., 1986; Ellemers, Van Knippenberg, De Vries & Wilke; 1988): "How much do you identify yourself with this group?" "Do you think that the members of this group are well suited to each other?" "Are you glad to belong to this group?" and "Do you consider yourself as belonging to this group? (1 = not at all, 7 = very much so)." These four questions were combined into a single identification score (Cronbach's alpha = 0.81).

A one-way ANOVA with group identification as sole factor on the average identification score revealed a significant effect for group identification,  $F(1, 91) = 21.16, p. < .001$ , showing that participants in the high identification groups identified more strongly with their group than participants in the low identifying groups ( $M = 4.09$  vs.  $M = 3.20$ ;  $SD$ 's = 0.97 and 0.91).

Contribution sessions 1-4. After these instructions, the first block of four contribution sessions started and participants indicated for each how much out of their endowment they were willing to contribute (i.e., any amount between 0 and 300 pence). At the end of each session they received feedback that their group had failed to obtain the bonus in the previous session. Before the fourth contribution session it was announced that a leader could be appointed to the group if it continued to fail to provide the good. After this session it was confirmed that a group leader was appointed to regulate contributions in the second block of sessions (5-8). Participants were told that the leader would monitor the group member's decisions and would address the group via computer messages. At this point, the leader introduced himself to the group via a mail message on the screen.

"Hi, I have been asked by the experimental officer to monitor your group in solving the task. On my computer screen I can see the contributions made

by each of the members of your group. Hence, I am fully informed about what is happening in your group."

Manipulation of leader structure. Subsequently, in half of the experimental conditions participants were confronted with a leader with instrumental power who would try to regulate contributions by penalizing noncooperative members (instrumental leader-condition). This leader described his task as follows:

"I have to make sure your group will receive the bonus in the forthcoming sessions. However, I do not believe that each group member will contribute enough voluntarily. Hence, in the next sessions I will not hesitate to penalize the least contributing member. That is, in each session the group member contributing the least amount of the 300 pence endowment will get a fine of 220 pence. This amount will be subtracted from the amount of money he or she earned at the end of the sessions. Because people who do not contribute affect the group's success, I think a punishment is the best thing to ensure they will contribute enough next time."

In contrast, in the other conditions participants were confronted with a leader who tried to regulate the provision of the good by promoting good relations within the group (relational leader-condition). The following introduction was given by the leader:

"I have to make sure your group will receive the bonus in the forthcoming sessions. I trust each of you to contribute enough of your endowment to the provision of the good. If the group fails, however, I will send an encouraging message to noncooperative group members to ask them to contribute sufficiently the next time. I will not punish anyone, but I will try to give you support and explain things if necessary. You can trust me that everyone will be treated equally and with respect."

Finally, the instructions of both leaders ended with the following:

"Each time your group is successful, I will make sure that each individual receives the bonus. When all contribution sessions are over, each group member will receive the amount of money he or she is entitled to."

Contribution sessions 5-8. After the message from the leader, the second set of contribution sessions began. Similar to the previous sessions, the group members were asked to contribute any amount between 0 and 300 pence. After each session the group members received feedback from the leader that the group had failed in securing the bonus. These messages differed between the two leader-conditions, and they were slightly reworded after each contribution session. For example, after session 6 the instrumental leader sent the following message:

"Your group as a whole contributed less than 1200 pence or £12 in the previous session. Therefore I cannot give you the group bonus of £30. I will have to punish the least contributing group member within the group. This person will pay a fine of 220 pence, which will be subtracted from his or her earnings at the end of the experiment. Hopefully, this will encourage group members to contribute more the next time."

In session 6 the following feedback was given by the relational leader:

"Your group as a whole contributed less than 1200 pence or £12 in the previous session. Therefore I cannot give you the group bonus of £30. I trust upon each of you to contribute enough next time. I do not believe that anyone in this group is greedy, but please try to increase your contributions because it will help the group. Hopefully, the outcome will be different in the next round."

Finally, after the eight contribution session the experiment was interrupted, and participants were given a final set of questions to answer. They were then debriefed about the purpose of the experiment, and were told that, because it was impossible to check what each individual had earned, they all received a £2 bonus for their participation. They were then thanked for their participation and dismissed.

Self-esteem. Self-esteem was measured by three situation-specific items taken from the Rosenberg self-esteem scale (1979): "After having participated in these contribution sessions do you feel sure of yourself?" "....do you feel satisfied with yourself?" "...do you feel proud of what you have accomplished?" The responses were combined into a single self-esteem score (Cronbach's alpha = 0.78).

Legitimacy of leader. Finally, we examined the perceived legitimacy of the two leaders by measuring two interrelated aspects of legitimacy, the leader's trustworthiness and group members' identification with the leader (i.e., adopted from Tyler & Degoey, 1995).

A first set of questions addressed group members' trust in the leader for influencing the group members' contributions: "How trustworthy do you consider this leader?" "How competent is this leader?" "To what extent does this leader respect the group members?" (1 = not at all, 7 = very much so) "How respectful does this leader treat you?" "How honest do you think this leader is?" "To what extent do you think the leader trusts the group?"

Secondly, several questions addressed how much group members identified with their leader: "How much do you identify with this leader?" "Would you feel good if you were described as someone who's similar to this group leader?", "Would you be proud to be identified with this leader?" "Do you think that this leader and you are well-suited to each other?" "Do you think that you have more in common with this leader than with any other leader?" "How similar is this leader to you?"

A confirmatory factor analysis on these legitimacy measurements revealed that the item structure was best represented by a single underlying factor (CFI = 0.94) rather than by a model with two separate factors (CFI = 0.88) - a CFI above .90 is generally regarded as a sign of good fit. Hence, a single legitimacy scale was created by averaging the scores on all individual items. This scale had a good inter-item reliability (Cronbach's alpha = 0.92).

To examine the perceived legitimacy of both leader types, an analysis was conducted on the legitimacy score, using a 2 (Group Identification) by 2 (Type of leader) design. This analysis revealed a main effect for leader type,  $F(1,89) = 7.72$ ,  $p < .001$ , which showed that a relational leader was viewed to be more legitimate ( $M = 4.35$ ;  $SD = 0.85$ ) than an instrumental leader ( $M = 3.78$ ;  $SD = 1.14$ ). These legitimacy ratings were not further influenced by the level of group identification,  $F(1,89) = 1.72$ ,  $p = .20$ , nor by the interaction between leader type and group identification,  $F(1,89) < 1$ .

### Results and Discussion

Contribution decisions. For our main analyses, we grouped the contribution sessions with a leader (i.e., sessions 5-8) together into one block and compared them with the block of sessions without a leader (sessions 1-4). Accordingly, participants' contribution decisions were analysed in a 2 (Group Identification: High vs. Low) x 2 (Type of leader: Instrumental vs. Relational) x 2 (Sessions: Without vs. With Leader) factorial design ANOVA with repeated measures on the third factor.<sup>3</sup>

Hypothesis 1 predicted that group identification would have a beneficial effect on the level of contributions made within groups. Consistent with this hypothesis (and similar to the result in Study 1), a main effect was found for group identification,  $F(1, 89) = 8.76$ ,  $p < .005$ , indicating that in the high identification groups participants indeed contributed more ( $M = 215.58$ ;  $SD = 96.77$ ) than in the low identification groups ( $M = 187.95$ ;  $SD = 59.82$ ). This effect was not further influenced by the absence or presence of a leader  $F(1, 89) < 1$ .

Moreover, a main effect was found for session,  $F(1, 89) = 7.14$ ,  $p < .01$ , indicating that in the sessions with a leader the participants contributed more ( $M = 209.92$ ;  $SD = 59.60$ ) than in the sessions without a leader ( $M = 192.71$ ;  $SD = 55.14$ ).



Importantly, this main effect was qualified by a significant interaction effect between session and leader type,  $F(1, 89) = 6.45$ ,  $p < .05$ . To analyse this interaction more closely we conducted separate analyses for the samples with an instrumental and relational leader to compare their contributions before and after the leader was introduced. Using the instrumental leader sample, this test revealed a significant effect for sessions,  $F(1, 45) = 13.07$ ,  $p = .001$ . The means associated with this effect revealed that contributions rose after the instrumental leader was adopted ( $M$ 's = 227.28 vs. 194.02;  $SD$ 's = 50.17 and 52.09).

In contrast, for the sample with a relational leader no significant effect was found for sessions,  $F(1, 44) < 1$ . The means revealed that the contribution levels were indeed unaffected by the introduction of a relational leader ( $M$ 's = 192.37 vs. 193.22;  $SD$ 's = 58.71 and 63.65). These results are consistent with Hypothesis 5a by showing that the appointment of an instrumental leader is generally more effective in enhancing contribution levels within groups than a relational leader.

Our next hypothesis concerned the impact of group identification on the effectiveness of these leader types (Hypothesis 5b). More specifically, it was predicted that an instrumental leader would be most effective in raising contributions from low identification groups, whereas in high identification groups an instrumental and relational leader would be equally effective. Evidence for this hypothesis was provided by a significant threeway interaction between group identification, type of leader, and sessions,  $F(1, 89) = 4.13$ ,  $p < .05$ . The patterns of contribution levels associated with this interaction are shown in Table 2.

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Insert Table 2 about here.

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To examine this interaction in more detail, we analyzed the contribution patterns for the leader session separately. As expected, a 2 (Group identification) by 2 (Type of leader) ANOVA revealed a significant interaction between identification and leader,  $F(1, 89) = 4.99, p < .05$ . The contribution patterns in these conditions are shown in Table 2. Planned comparisons on the mean contribution showed that people in the low identification groups contributed much more when monitored by an instrumental leader ( $M = 228.03$ ) than by a relational leader ( $M = 168.44$ ),  $F(1, 46) = 10.35, p < .001$ .

In the high identification groups, however, this tendency was absent and participants in these groups contributed as much with a relational leader ( $M = 218.02$ ) as they did with an instrumental leader ( $M = 226.54$ ),  $F(1, 43) < 1$ .

Finally, a comparison between the mean contributions in the sessions with and without a leader revealed that an instrumental leader significantly enhanced contributions from both the high identifiers ( $M$ 's = 209.77 vs. 226.54;  $p < .01$ ) and low identifiers ( $M$ 's = 178.28 vs. 228.03;  $p < .001$ ). Yet, a relational leader enhanced the contributions from high identifiers only ( $M$ 's = 207.73 vs. 218.02;  $p < .05$ ) but had no effect on the contributions from low identifiers ( $M$ 's = 177.03 vs. 168.44; n.s.).

These findings extend and complement the results of Study 1, first, by replicating the positive effect of group identification on individual actions (i.e., Hypothesis 1). Furthermore, our results reveal that group members generally cooperate more with an instrumental rather than relational leader (Hypothesis 5a). However, when group identification is high a relational leader appears to be as effective in enforcing contributions (i.e., Hypothesis 5b).

Legitimacy of leader as mediator. How did perceptions of the leader's legitimacy affect people's contribution decisions? To examine this, an ANCOVA was conducted on the mean contribution score in the second block of sessions, including the full experimental design with the leader's legitimacy score as a covariate. This analysis revealed, firstly, a strong positive effect of the covariate

( $\beta = 0.32$ ),  $F(1, 88) = 11.25$ ,  $p < .001$ , on the average contribution level, indicating that people contributed more to the extent that they considered the leader to be more legitimate.

Moreover, when the effect of the covariate was accounted for, the main effect of leader type (i.e., in the original analysis:  $F[1, 89] = 8.88$ ,  $p < .01$ ) gained in strength,  $F(1, 88) = 15.73$ ,  $p < .001$ . This suggests that the relative effectiveness of an instrumental over a relational leader in raising the contribution level in groups is somewhat moderated by the fact that an instrumental leader was perceived to be less legitimate.

Effect of leader on self-esteem. Our final hypothesis addressed the effects of relational vs. instrumental leaders on group members' self-esteem (Hypothesis 5c). Based upon the group-value model (Tyler & Lind, 1992), it was expected that relational leaders would have a positive effect on people's self-esteem, particularly among group members with a high group identification.

To examine this, a 2 (Group Identification) x 2 (Type of leader) was performed on the average self-esteem score. Consistent with Hypothesis 5c, this analysis revealed a significant interaction effect between identification and type of leader,  $F(1, 89) = 4.47$ ,  $p < .05$ . A closer examination of the means (see Table 3) reveals that, in line with our prediction, the self-esteem of participants in the high identification groups was higher with a relational ( $M = 4.95$ ;  $SD = 1.22$ ) than with an instrumental leader ( $M = 4.51$ ;  $SD = 0.94$ ),  $t(45) = -1.48$ ,  $p < .05$  (one-tailed).

Surprisingly, however, this effect was reversed in the low identifying groups. Individuals in these groups exhibited a higher self-esteem with an instrumental leader ( $M = 4.97$ ;  $SD = 0.96$ ) than with a relational leader ( $M = 4.42$ ;  $SD = 0.94$ ),  $t(48) = 1.73$ ,  $p < .05$ .

These results indicate that, in line with Hypothesis 5c, people's self-esteem is positively affected when they are supervised by a relational leader, but only if their group identification is high. In contrast, if their group

identification is low people's self-esteem is boosted more by an instrumental leader than by a relational leader.

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Insert Table 3 about here.  
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### General Discussion

The current research utilized an experimental public good task to explore the role of group identification processes in two interrelated forms of collective action, (a) selecting and (b) cooperating with leaders in social dilemmas.

These studies replicated previous research on collective action in social dilemmas (e.g., Messick et al., 1983; Samuelson et al., 1984; Yamagishi, 1986; 1988) by showing that individuals are more likely to adopt a leader when they expect the group to fail in producing the good by voluntary contributions from group members (i.e., Hypothesis 3). The current findings delineate, however, that outcome concerns do not tell the whole story about when groups engage in collective action, at least not when group can choose between various alternative collective action structures. The current research suggests that, in the selection and cooperation with different leaders, group members also consider the potential influence of these leaders on the social relationships within the group.

#### Selection of Leaders

The findings of Study 1 revealed that in choosing between different leader structures individuals consistently preferred to adopt leaders with a legitimate power base. That is, group members preferred a democratic over an autocratic leader, an elected over an appointed leader, and a leader from inside over a leader from outside their group (i.e., Hypothesis 4a).

How can we explain these preferences? Firstly, in selecting a leader group members may be concerned about the amount of influence they can exercise over the leader's decisions. Particularly in social dilemma situations, group members may be quite reluctant to give away control over their contributions as this will

harm their self-interest (i.e., noncontributing is the dominant behavioral option; Dawes, 1980; Komorita & Parks, 1994; Van Lange et al., 1992; Yamagishi, 1986). Rather than choosing an autocratic leader, group members may therefore prefer a democratic leader, whose decisions can be influenced at least to some extent (i.e., decision control; Thibaut & Walker, 1975). Similarly, group members may consider it important to have a say in who will be assigned as leader to ensure that indeed the most appropriate person is appointed (Hollander & Julian, 1970). Thus, rather than looking at the potential success of a leader in proving the good per se, group members also evaluate these leaders in terms of how they will affect group members' control over their contribution decisions (Samuelson, 1993).

The desire for control and autonomy might well explain the preferences for democratic and elected leaders, but these motives are less likely to account for the preference for a leader from inside the group. To understand this, we have to consider various alternative functions of a group leader, perhaps the most important being to represent the group, promote group belongingness, and to enhance relationships between members (i.e., relational vs. task aspects of leadership; Bass, 1990; Smith, 1996). Such relational needs are most likely to be fulfilled by leaders that group members can identify with, for example, because they share the norms and values of the group (French & Raven, 1959) or are considered to be a representative or "prototypical" group member (Hogg, 1996; Hogg and Abrams, 1988). Accordingly, group members' preference for legitimate leaders might also reflect the significance of their group belongingness, which is perhaps most evident in the selection of internal over external leaders, and elected over appointed leaders.

More direct evidence for the importance of these relational concerns stems from the finding that a legitimate leader was particularly preferred when group membership was made salient (i.e., Hypothesis 4b). When group identification was high, individuals exhibited a stronger preference for adopting an internal (vs. external) and elected (vs. appointed) leader than when group identification was

low. These results are important because they delineate that social identification processes play a role in determining the type of collective solutions groups may choose to manage social dilemmas. Previous social dilemma research has stressed the beneficial effects of group identification in promoting individual solutions (i.e., these effects were replicated in the current studies; e.g., Brewer & Kramer, 1986; Kramer & Brewer, 1984; Kramer & Goldman, 1995), whilst ignoring its potential effect on preferences for collective solutions. The present results suggest, however, that the role of group identification in determining collective action should not be ignored. That is, in high identifying groups it is not only important that these solutions are instrumental in providing the good, but also that they positively affect the social ties within the group. This implies that in helping to manage their dilemmas such groups might prefer to adopt an identifiable leader figure rather than an anonymous rule structure (Tyler & Lind, 1992).

These findings are also relevant because they delineate the role of leaders in enhancing social identification. In the past, social identity theorists have been relatively quiet about the role of leadership in shaping social identities within groups (Hogg & Abrams, 1988; Tajfel & Turner, 1986; Turner et al., 1987). Some recent work, however, suggests that leaders might have a role in promoting group identity provided, however, that they are regarded as representative or "prototypical" group members (i.e., self-categorization theory of leadership; Hains et al., 1997; Hogg, 1996; Hogg & Abrams, 1988; Platw et al., 1997). Our findings provide support for a prototypical model of leadership by showing that when group membership was made salient individuals preferred to adopt a representative group leader (i.e., internal and elected leader).

It is good to note that the strength of group identification did not affect the preferences for a democratic over an autocratic leader. Across all groups there was, in fact, a general dislike for autocratic style leaders. This finding is quite common in social dilemma research (Rutte & Wilke, 1985; Samuelson, 1993), and it is not inconsistent with the above, because it suggests that the impact of group

identification on leader preferences is indeed primarily shaped by relational needs rather than instrumental or control-based needs. Indeed, most groups would wish to be able to exercise some control over their leader's decisions. In addition, however, highly identifying group members also want their leaders to symbolize the group and represent their group values. Thus, this could explain why differences were obtained between low and high identifying group members in the preference for elected (vs. appointed) and internal (vs. external) leaders, but not for democratic (vs. autocratic) leaders. In fact, outside the laboratory autocratic leadership is most likely to be found in highly cohesive groups, such as religious cults (Hollander, 1985).

Final evidence for a relational rather than instrumental interpretation of the leader preferences is derived from the fact that these preferences were not influenced by the expected group performance (i.e., Hypothesis 4c). That is, even when the group had previously failed to obtain the good, its members still preferred a democratic over an autocratic, an elected over an appointed, and an internal over an external leader. Particularly in the fail conditions, one might expect a preference for external or, at least, externally appointed leaders, because individuals may not regard their fellow group members as trustworthy enough to be granted leadership (Samuelson, 1991). Yet, these leader types may be perceived as lacking in legitimacy, because they are not seen as representative of their group.

#### Cooperation with Leaders

To further disentangle instrumental and relational motives underlying collective action we examined the influence of different leader types on the contributions of group members to a public good. The effectiveness of leadership in promoting cooperation has been an ignored theme in social dilemma research, mainly because previous studies assumed that the implementation of a leader structure would effectively solve the dilemma (Messick & Brewer, 1983; Messick et al., 1983; Samuelson & Messick, 1995). In real-life, however, leaders merely

restructure the dilemma situation, and group members still have to decide whether they want to contribute or not in the presence of a leader.

Consistent with Hypothesis 5a, our findings revealed that contribution levels were raised when groups were managed by a leader who imposed fines upon noncontributing group members (i.e., instrumental leader) rather than by a leader who simply encouraged members to contribute voluntarily (i.e., relational leader). More importantly, however, an instrumental leader was much more effective in enforcing contributions than a relational leader when group identification was low. Yet, when group identification was high, the difference in effectiveness of these leaders disappeared and both leaders were found to increase group members' contributions (Hypothesis 5b).

How can we account for these findings? First, the overall effectiveness of an instrumental leader parallels earlier research on the impact of sanctioning systems in public good dilemmas (Yamagishi, 1986; 1988; Yamagishi & Sato, 1986). Coercion might work either because it provides a direct punishment for noncontributing (i.e., greed-motive), or because it increases people's trust that their contribution will be reciprocated by others (i.e., fear-motive; Yamagishi, 1986). Both motives, fear and greed, might explain why among low identifying group members an instrumental leader was found to be far more efficient compared to a relational leader. In low identification groups individuals are primarily focused on their personal welfare rather than the welfare of others or the group (Brewer, 1979; Brewer & Kramer, 1986; De Cremer & Van Vugt, 1998; Hogg & Abrams, 1988). Accordingly, members of these groups might start to contribute only when it is in their direct self-interest to do so (i.e., under threat of a punishment). Alternatively, the adoption of an instrumental leader might ensure cooperative group members that their efforts will not be exploited by "selfish" others in the group. Consistent with the above, the results of the manipulation checks in Study 1 indeed revealed a link between group identification and trust in showing that low



identifiers considered their fellow group members to be generally less honest and trustworthy than did high identifiers.

These instrumental concerns, however, are less likely to account for the contribution patterns obtained for high identifying group members. Their contribution levels increased slightly, but significantly, once a leader structure was implemented in their group. Moreover, a relational leader had about the same impact as an instrumental leader in raising their contribution size. This is remarkable because, like all other participants in Study 2, they continued receiving negative feedback about the group performance in providing the good; hence, their willingness to remain cooperative under the supervision of a relational leader can be explained only by mechanisms which depart from their immediate self-interest.

Previous work has revealed that group leaders and authorities play a role in shaping social identification processes by providing people with information about their standing within the group (i.e., group value model; Lind & Tyler, 1988; Tyler & Dawes, 1993; Tyler & Lind, 1992). According to the group-value model, if group members are treated with respect by their leaders this can be seen as an indication of their status in the group, which is likely to enhance group identification and contribute to their self-esteem.

The present findings provide some support for the group/value model. By providing support and encouragement the relational leader communicated to group members that they were respected members of the group, and could be trusted to protect the group welfare. In the absence of any direct punishment, this may have persuaded them to keep on contributing despite the repeated group failure. That only high identifying group members responded to these messages is consistent with this interpretation. Theoretically, one would expect this status information to affect primarily people who regard their group membership to be important. Moreover, the impact of a relational leader was evidenced in the self-esteem ratings of the high identifying group members. Their self-esteem was found to be higher with a relational than with an instrumental leader, which

provides further support for our claim that relational concerns ("Am I trusted and treated with respect?") were indeed more important for high than for low identifying group members. Interestingly, the reverse pattern was found for low identifying group members. They actually reported a higher self-esteem when supervised by an instrumental leader. This would suggest that they were primarily interested in achieving good group outcomes, and therefore felt quite happy to be supervised by a leader with the ability to punish "greedy" group members.

The above findings thus contribute to the validity of the group/value model. To our knowledge, this research provides the first experimental test of predictions derived from this model. Previous evidence for the link between authority decisions, group identification, and support for authorities have all been based upon cross-sectional and correlational findings (e.g., Tyler & DeGoey, 1995; Tyler, DeGoey, & Smith, 1996). Hence, the model could be criticised for lacking in causality. In support of this model, however, our results demonstrate more rigorously that social identification processes do affect how people evaluate and respond to different authorities. Furthermore, our research extends previous findings by showing that treatment by leaders not only influences the perceived legitimacy of these leaders (Tyler & DeGoey, 1995), but also directly influences group members' self-esteem and their willingness to contribute to solving a group problem.

From a somewhat broader perspective, our findings are important because they delineate that the literature on leadership could be easily integrated in the domain of social dilemmas. Both literatures make a fundamental distinction between instrumental and relational concerns underlying people's motivations to cooperate. In leadership research a traditional dichotomy is made between two often conflicting leader types, task versus relation orientated leaders - the first focusing primarily on improving the group outcomes and the latter on maintaining viable social relationships within the group (Bass, 1990; Hollander, 1985; Smith, 1996). In social dilemmas, groups face a similar conflict between ensuring that

everyone cooperates for the group's benefit, but, at the same time, providing group members some personal control and responsibility (Komorita & Parks, 1994; Tyler & Dawes, 1993; Van Lange et al., 1992). Our findings show that the adoption of a leader might provide a solution to this conflict, but only to the extent that the style of the leader matches with the group needs. In this regard, our results are quite consistent with a contingency approach to leadership (Fiedler, 1978; Vroom & Jago, 1978). Future research will be needed to determine what leader styles are most successful given certain other group or situational characteristics (e.g., group size, severity of crisis).

#### Limitations, Conclusions, and Implications

Before closing we should note some limitations of the current research. A first apparent limitation is that we examined the effects of two rather extreme leader types, a leader with coercive power and a leader whose power flows from building a positive relationship with the group. In the real-world, these pure forms seldom appear and most leaders display a hybrid of different power styles. The manipulation of these contrasting types, however, enabled us to disentangle instrumental and relational motives, and therefore allowed us to carefully assess the validity of different models of collective action. Nevertheless, we believe that further research should look at the effects of leaders with a mixture of different power bases. For example, a further study could assess whether the method of selection (i.e., elected vs. appointed) makes a difference in the effectiveness of instrumental versus relational leaders in managing social dilemmas.

A second limitation is that group members in Study 2 received continuous negative feedback about their group performance, both in the four sessions before and four sessions after the introduction of the leader. This was done both to provide a justification for the introduction of a leader, and to investigate the influence of a leader on the contributions independent of their success in providing the group bonus. Yet, the systematic negative feedback that groups received was perhaps not quite realistic, and ideally we should have manipulated the expectation

of the group's success or failure in the same way as we did in Study 1. In this regard, however, it is remarkable that, despite the group's continuous failure, group members continued to support the leader -- except when low identifying group members were supervised by a relational leader. Perhaps this is due to the experimental situation, and the results may have been quite different in tasks where leaders repeatedly fail to provide a highly valued group outcome. Indeed, in real-life leaders or authorities may find it quite difficult to sustain cooperation from followers if they continue to disappoint in providing a good for the group (e.g., failed attempts by union representatives to negotiate salaries).

Beyond these limitations, a potential strength of our research is also worth noting. The current research sheds a new light on the role of leaders in managing social dilemma problems. Contrary to earlier suggestions (Messick & Brewer, 1983; Samuelson & Messick, 1995), our research stresses that the adoption of a leader is not a panacea to social problems as it will not automatically resolve the dilemma structure. Leaders may play a role in softening the dilemma for people, but their success depends upon the match between their characteristics and those of the group or situation at hand. For example, in raising money for a community centre there may be different campaign leaders required for different neighborhoods. In a strongly cohesive community, it may be sufficient to appoint a leader who simply encourages community members to contribute, for example, by emphasizing the importance of a centre for their community. This leader, however, is not likely to be very effective in low cohesive neighborhoods. In these communities, it will be more effective to appoint a campaign leader who can actually impose threats on uncooperative members, for example, by denying them access to the centre. Many of these smaller and larger social dilemmas in society will not be resolved without the implementation of some kind of authority structure. It is therefore of uttermost importance to develop an understanding which structures groups prefer and under what conditions they are willing to cooperate with them.

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## Footnotes

<sup>1</sup> Olson (1965) and Yamagishi (1986) have argued convincingly that the creation of an authority structure, in fact, constitutes a social dilemma of the second kind. It serves people's short-term self interest not to contribute to the establishment of an authority, but if none or only few group members cooperate there will be no authority in place to monitor the good, and therefore the good may fail to be provided.

<sup>2</sup> There were no a priori expectations about the influence of this factor on collective actions. Previous research had revealed that individual actions in public good dilemmas are shaped by the difficulty of getting the bonus (Dawes, Orbell, Simmons, & Van der Kragt, 1986), and therefore we introduced task difficulty as an exploratory factor in the design of Study 1.

<sup>3</sup> A preliminary analysis including the eight contribution sessions as an additional within-participant grouping variable revealed similar results as when the sessions were grouped into two blocks of four (i.e., without and with leader). Therefore, we only report the results of the latter analysis in the main text. The original analysis, however, revealed one additional main effect for sessions,  $F(3, 267) = 7.22, p < .001$ , but no evidence for any significant interactions with sessions. This main effect indicated that contributions were raised at the final session of each of the blocks, presumably because group members were aware that a leader structure could be installed (session 5) or that the experiment was about to finish (session 8). Such time effects are not uncommon in social dilemma experiments with repeated trials (Komorita & Parks, 1994).

## Authors notes

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Table 1

Preference Ratings for Various Leader Structures

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Leader structure	<u>M</u>	<u>SD</u>
Democratic leader	5.51 <sup>a</sup>	1.46
Elected leader	5.15 <sup>a</sup>	1.36
Internal leader	4.94 <sup>a</sup>	1.28
Appointed leader	3.22 <sup>b</sup>	1.63
External leader	3.08 <sup>b</sup>	1.37
Autocratic leader	2.55 <sup>b</sup>	1.62

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Note. Means with a different superscript differ significantly,  $p < .05$ ; scale (1 = no preference at all; 7 = very strong preference).

Table 2

Contributions as a Result of Session, Type of Leader, and Group identification.

		Session		
		Without leader	With leader	
Leader type				
Group identification				
Low	Instrumental	178.28 <sup>a</sup> (49.83)	228.03 <sup>c</sup> (61.89)	
	Relational	177.03 <sup>a</sup> (61.75)	168.44 <sup>a</sup> (66.35)	
		177.66 (55.51)	198.23 (64.12)	187.95 (59.82)
High	Instrumental	209.77 <sup>b</sup> (50.33)	226.54 <sup>c</sup> (35.46)	
	Relational	207.73 <sup>b</sup> (51.92)	218.02 <sup>c</sup> (50.17)	
		208.77 (50.54)	222.38 (42.99)	215.58 (46.77)
		192.71 (55.14)	209.92 (59.60)	

Note. Means with a different superscript differ significantly,  $p < .05$ ; the standard deviations are given in between parentheses; the range of possible contributions varies from 0 to 300 pence.

**Table 3**

Self-Esteem Scores as a Result of Type of Leader and Group Identification.

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	Type of Leader	
Group Identification	Instrumental leader	Relational leader
Low	4.97 <sup>a</sup> (0.96)	4.42 <sup>b</sup> (0.94)
High	4.51 <sup>b</sup> (0.94)	4.95 <sup>a</sup> (1.22)

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Note. Means with a different superscript differ significantly,  $p < .05$ ; standard deviations are given in between parentheses; a higher score indicates a greater reported self-esteem.