

Leadership Selection and Cooperative Behavior in Social Dilemmas: An Empirical Exploration of Assigned versus Group-Chosen Leadership

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Abstract

This research explores the leadership selection process as an antecedent to group cooperation. We compare group-chosen and assigned leaders and explore their resulting influence upon the group process and outcome in a social dilemma context. In three empirical studies, we predict and provide support for the idea that group-chosen leaders will attend more to the social aspects of the group's interaction as opposed to the economic (bottom-line) ones than will assigned leaders. Additionally, we found that those groups with group-chosen leaders had more overall group cooperation (i.e., less economic self-interest), greater trust in one another and in the leader, and had leaders who displayed more socially oriented leadership behaviors.

In both large and small organizations, many individuals working in groups face challenges as they aim to maximize both the group output and their own individual needs. Organizations aim to solve this tension by providing incentives for both individual and group-level performance, but even well-designed incentive systems leave open the temptation for individuals to do as little as possible personally while still taking a share in the credit of the group's successes. Such a situation falls under the heading of a social dilemma, which is defined in the literature as a situation with two distinctive characteristics: "(a) at any given decision point, individuals receive higher payoffs for making selfish choices than they do for making cooperative choices regardless of the choices made by those with whom they interact, and (b) everyone involved receives lower payoffs if everyone makes selfish choices than if everyone makes cooperative choices" (for recent examples, see Dawes & Messick, 2000; Komorita & Parks, 1994; Liebrand, Messick, & Wilke, 1992; Messick & Brewer, 1983; Weber, Kopelman, & Messick, 2004).

Groups facing such a situation may have members that collectively do more for the overall good of the team (despite the cost to their personal needs), or may have members who protect their own time and resources more, at the expense of the overall team's productivity (but to the benefit of their own work, e.g., perhaps on other projects). Thus, the construct of group-level cooperation arises as the composite of the individual decisions to either take from the collective good to maximize immediate personal gain, or sacrifice it for the good of the collective (Dawes & Messick, 2000; Komorita & Parks, 1994; Liebrand et al., 1992; Messick & Brewer, 1983; Weber et al., 2004). It is generally considered uncooperative to take from the collective (i.e., hurt the other group members) to maximize immediate personal gain, while it is considered cooperative to support the collective good (even when at a lesser personal outcome) (Wade-Benzoni, Tenbrunsel, & Bazerman, 1996).

Understanding the contextual, or structural, predictors of cooperation in such groups is valuable. Here, we contribute to the literature by focusing on the particular context of group leadership and, more specifically, explore whether a group leader's *selection* process may change the willingness of group members to cooperate with each other in social dilemma, as well as have an effect on trust both within the group and of the leader. More specifically, we argue that having a voice in the selection of a leader will positively influence both the cooperation and the trust levels of the group's members, as well as influencing the behaviors of the leader him or herself.

Leaders of groups can arise in a multitude of ways. They can be assigned to the role by superiors, as is especially commonplace in more traditional organizations that are marked by centralized decision making and a top-down philosophy of control (Daft, 2013). Alternatively, they can be "elected" to the role by the group members themselves. This is a comparatively structured approach in that leadership is established prior to tackling the task at hand, often at the instruction of external management (Manz & Sims, 1987), but differs in terms of the control, and voice, that is given to the group members themselves about the specific individual selected as their leader. Or finally, a team may begin their work without a formal leader of any kind. In such cases, one of three dynamics is likely to develop: (a) A leader may emerge, whereby a group member organically steps up to lead the group without any explicit direction or selection, (b) the group may also find themselves sharing the leadership role and responsibilities across multiple members (such as might happen in an ad hoc committee or in a task force), or (c) the group may proceed with no leader whatsoever. Although group leaders in organizations can and do take on the job in many different ways, we know surprisingly little about whether and how this selection process may change the subsequent work of the group. In this article, we explore whether the *method* used to identify a group leader specifically changes the amount of trust and cooperation that ensue for a group facing a social dilemma.

Leadership in Social Dilemmas

Leadership, generally speaking, is a topic that has received substantial attention in both the popular press and the academic literature (for reviews, see Avolio, Walumbwa, & Weber, 2009; Bass, 1990, 1998; Dirks & Ferrin, 2002). While the importance of leadership is readily acknowledged and a variety of leadership styles have been identified (e.g., considerate, structuring, charismatic, autocratic, democratic, laissez-faire, etc.) with various effects on individuals, groups, and organizations, our question of whether the contextual cues of how the leader was selected may influence cooperation levels in group-level social dilemmas remains to be explored.

It is recognized that in general, groups prefer to have a leader, and that having a leader can promote cooperation (De Cremer, 2002; De Cremer & van Knippenberg, 2002; Rutte & Wilke, 1984; Schneider, Foddy, & Bilik, 2004; Van Vugt & De Cremer, 1999, 2002; Van Vugt, Jepson, Hart, & De Cremer, 2004), especially when members are dissatisfied with the status quo (Messick & Brewer, 1983; Wilke, 1991), or when the distribution or use of resources is viewed as being unfair (Samuelson & Mesick, 1986). Different leadership styles have also been examined with respect to their effect on group work. Autocratic leadership (vs. democratic or laissez-faire) tends to result in more members choosing to *leave* the group (Van Vugt et al., 2004), as group members generally have a preference for more democratic, consultative leaders (Rutte & Wilke, 1985; Van Vugt & De Cremer, 1999). Various leadership traits have also been associated with encouraging ethical/cooperative choices as well (Demirtas, 2013; Hansen, Alge, Brown, Jackson, & Dunford, 2013; Miao, Newman, Yu, & Xu, 2013). For example, charisma in a leader has been shown to particularly motivate cooperation in social dilemmas (De Cremer, 2002). Taken together, previous research has explored the extent to which groups desire to have a leader, and how a particular leadership style may motivate cooperation between group members. But it is unknown how group members react to the *process* of selecting their leadership in the first place. Thus, the overarching question that we

present remains: Is there a particular approach to leadership selection that is demonstrably superior when it comes to promoting group-level cooperation?

Selection of Leader, Voice, and Trust

We argue that a group operating within the context of a group-chosen leader will be more cooperative in social dilemmas than will those with an assigned leader. As has been demonstrated in the decision-making realm, the ability to actively participate in a decision is strongly related to commitment to and quality of the outcome (Black & Gregersen, 1997). In addition, the ability to participate in decision making has been shown to quite strongly and positively affect overall job satisfaction (Pacheco & Webber, 2016). The ability to voice opinions and concerns has also long been identified as a key element of feelings of fairness and justice in the workplace, in a process that has been termed the “voice effect” (Folger, 1977). The importance of this process has prompted some companies to include employee representatives at the decision-making tables to manage the inherent conflicts of interest that arise in employee–employer relationships (García, Munduate, Elgoibar, Wendt, & Euwema, 2017) and to help negotiate terms (Demoulin, Teixeira, Gillis, Goldoni, & Stinglhamber, 2016), all with the goal of encouraging feelings of active voice in the decisions that get made. Along these same lines, we propose here that having group members participate in the leader selection process itself (i.e., the leadership decision) is an even more direct way to encourage commitment to and involvement in the group and its tasks, particularly in a situation where individuals must decide between the competing interests of best-serving the self or the collective group.

Specifically, groups operating in the context of group-chosen leaders may have higher levels of interpersonal trust than groups with an assigned leader (designated by an authority outside the group). There are three different lines of logic on why trust may develop more fully in a group-chosen leader than in an assigned one. First, trust has often been argued to be a function of uncertainty (for a review see Rousseau, Sitkin, Burt, & Camerer, 1998), with higher levels of uncertainty about other group members (e.g., their motives, competence, etc.) leading to less trust in those others. An assigned leader may come with less certainty with respect to expectations and plans, and may result in less trust among the entire group as they decide whether to act in cooperation with each other or as agents for their own gain. This, in turn, may foster less solidarity and less willingness to make concessions on behalf of other group members versus their own self-interest. Although the relationship is not a simple one, some argue that trust in and of itself can inspire more cooperative actions (see Cohen & Dienhart, 2011; Watson, 2013 for discussion).

Second is the idea that groups allowed to choose their own leader may feel that the leader is a true member of their in-group, while having a leader chosen from without could feel that the leader is more like an out-group member who was put into a position of authority over the rest of the in-group members. Classic research in social psychology has shown that even when group membership is kept anonymous (the minimal group paradigm), people tend to identify with, trust, and cooperate more fully with members of their in-groups than with members considered to be outsiders (see, Tajfel & Turner, 1986).

Finally, the issue of personal voice in the group process may be at play here as well. It has been shown that group members facing a social dilemma prefer democratic-based solutions (Rutte & Wilke, 1985) on the whole, and having a group choose a leader is one such democratic process that might build early trust and loyalty in each other and in the cooperative way of solving problems. In addition, group members may specifically trust a *chosen* leader more than another type of leader because of the value they place on having had a say in the leadership decision.

Thus, we argue overall that although we understand that participation in group process will yield some positive outcomes in groups, we do not yet know how the choice of a leader specifically will influence trust and cooperation. Since leadership is such an important part of a group’s dynamics, we expect that having a voice in this process specifically would encourage a substantial effect on the group’s levels of

trust and cooperation. The resulting higher levels of trust that these groups may experience may lead to a tendency toward more cooperative individual decisions and fewer decisions based on self-interest alone.

Hypothesis 1: Groups with group-chosen leadership will result in more cooperative outcomes than groups with assigned leadership.

Hypothesis 2: Groups with group-chosen leadership will result in higher perceptions of trust in the collective than groups with assigned leadership.

It is also possible that the nature of a group's leadership selection process will influence the activities of the leader as an individual. The psychological principle of reciprocity states that we feel tremendous pressure to respond in kind to the type of treatment that has been bestowed on us by others. Based on this concept, it seems reasonable that leaders selected by their fellow group members may feel a greater obligation to return the favor by paying more attention to their social needs by creating a positive atmosphere and supporting the team members. Much the same as the way psychologists have identified the tendency for people to rise, or sink, in their performance abilities based on the expectations of those around them (Rosenthal & Jacobson, 1963), leaders may also change their behaviors in ways that fit their perceptions of the context in which they were selected. We propose that the way by which a group leader is selected may well provide a contextual signal for guiding leadership style. Thus, assigned leaders may decide to focus on accomplishing the objective task at hand, and may do this without as much attention to the more social nature of the relationships within the group. By contrast, the leaders selected by the team may be more socially oriented, with more concern for the group members who were instrumental in selecting him/her for the job.

Hypothesis 3A: Groups with assigned leaders, as opposed to group-chosen leaders, will result in a greater leadership focus on task accomplishment.

Hypothesis 3B: Groups with group-chosen leadership, as opposed to assigned leaders, will result in greater leadership focus on the social needs of the collective.

Study 1

Methods

Participants and Research Design

Participants were 236 part-time graduate-level business students who participated in this study as part of an organizational behavior class assignment. The experimental design had three conditions: The four-person group had either (a) no designated leader (the control condition), where the first few minutes were spent on a shared task unrelated to leadership ($n = 19$ groups), (b) a group-chosen leader, where the group spent the first few minutes of their meeting selecting their leader ($n = 20$ groups), or (c) a randomly assigned group leader ($n = 20$ groups), where the first few minutes were spent acknowledging the assigned leader. In all three conditions, the group members shared a joint task. The exact wording of the instructions for the conditions were on a cover sheet attached to the case and can be seen in Appendix A. Note that even in the control condition, participants were also given a group task in which they must come to some consensus (a filler task about ranking items for survival), but it had nothing to do with identifying a leader. Participants were randomly assigned to experimental conditions and to their case roles.

Procedures and Materials

The group exercise used in this experiment was called SHARC (Wade-Benzoni, Tenbrunsel, & Bazerman, 1997), which is a resource-based social dilemma (i.e., the group members are taking from a

commonly shared resource). This case presents a four-member group with the task of deciding whether they will cooperate with other group members or prioritize immediate personal gain instead in a simulation based on harvesting shark. In this case, participants represent the interests of various fishing organizations and their cooperation is measured by their harvest decision. All group members share common access to a resource (sharks), which they all harvest for various reasons—some for their livelihood and others for pleasure or sport. There are four roles in the case: large commercial fisher, small commercial fisher, recreational competitive fisher, and recreational tours. In this dilemma, if all members choose to harvest as much as possible, the resource level (shark population) will be depleted. More specifically, the shark population will be depleted if the total harvest levels remain above 2,500 metric tons, in which case all members would be worse off than if they had cooperated with each other and reduced their combined harvest to a level below 2,500 metric tons. At the start of the exercise, the current harvest level is stated at 5,000 metric tons with large commercial fisher currently harvesting 1,400 metric tons, the small commercial fisher harvesting 1,300, the recreational competitive fisher 1,200, and the recreational tours harvesting 1,100 metric tons, so each player must decide whether to maintain the current level or change their harvesting activity going forward. Thus, ideally, the group members must effectively manage the commonly shared resource by cooperating with each other and coordinating their harvest levels so that the overall harvest for the coming year would be one-half of what it had been in the past year. The case provides specific payoffs for each role as a function of both the individual harvest level and the group harvest total such that each role has a differing incentive to maximize their own profits immediately. The exact payoff schedule is presented in the Appendix B.

It is critical to understand that all parties actually had all of the information before their discussion period, so the discussion is *not* about information exchange. Instead, it is about coming to understand the perspectives of the others and potentially cooperating to conserve resources for the benefit of all.

Participants were instructed to have a group discussion or meeting with the three other group members. All participants were given one hour to meet with one another and were explicitly told in both the written and oral instructions that no “agreements” during the meeting period were binding and that each party was to “check in” with their constituent group before making a final decision. In other words, the discussion permitted nonbinding solutions to be developed, but no commitment could be made until after each individual read their final role instructions from their constituents, thus allowing each individual to have complete autonomy from the group during the actual decision process.

After the meeting, all participants completed their harvesting decision privately (with no group members around) in class after reading their final instructions from their constituents (which in all cases provided no new information). Before making their harvesting decision, participants were again informed that their decision was to be independent, as no prior agreements were binding. They then filled out a questionnaire (see Appendices C and D) prior to finding out how much the other group members harvested. In the following class meeting, the harvesting results were revealed and discussed.

Dependent Measures

Manipulation Check. We did a manipulation check to see whether an individual leader was in place during the group meeting.¹ We did not measure whether that identified leader was group-chosen or assigned. However, if an individual leader was in place, it seems logical that the case material instructions

¹An additional 5-item scale, for satisfaction, was completed but was dropped from analyses for failure to effectively aggregate into a group-level construct.

were followed in the leadership conditions (except in the control condition, in which case an identified leader would have been emergent without our prompting). Our manipulation check, as can be seen in Appendix C, asked participants to rate their level of agreement with the statement, “By and large, one person acted as our group leader.”

Group Harvest. We explored the total group harvest level by aggregating the individual harvest levels of all four participants in each group. Higher values signify less cooperation.

Group Cooperation. A reduction in harvest levels to a sustainable shark population, 2,500 metric tons, was coded as being a cooperative group, while those groups that overharvested (creating an unsustainable resource) were considered uncooperative. Cooperative groups with a harvest of 2,500 metric tons or less were coded as “1” and those who overharvested were coded as “0”.

Group Trustworthiness. To assess interpersonal trustworthiness in their group partners, we used the Organizational Trust Inventory—Short Form (OTI-SF) developed and validated by Cummings and Bromiley (Cummings & Bromiley, 1996). This scale uses 12 items geared toward assessing three dimensions of trustworthiness: (a) reliability, (b) honesty, and (c) good faith in the other party with respect to fulfilling their commitments. We slightly modified the OTI-SF to be more appropriate for a meeting/negotiation setting (e.g., substituting the words “the other parties” where the original questionnaire stated the name of the “other department” or “unit”). The reliability for this measure in the presented study was acceptable with Cronbach’s $\alpha = .70$. The items themselves can be seen in Appendix C. Group trustworthiness reported in the analysis is calculated by aggregating the individual group members’ perceptions of trust (ICC = 0.81).

Leadership Behavior. We examined leadership behaviors along two dimensions: task-oriented behaviors and socially oriented behaviors. We used a scale developed by Fiedler, Chemers, & Mahar (1976), who coded for the leadership behaviors required in problem-solving groups (such as presented in the SHARC case). Task-oriented leadership behaviors (labeled as “task 1” through “task 6” in Appendix D) include the following:

- (1) Defined the problem.
- (2) Facilitated information exchange.
- (3) Facilitated evaluation and analysis of possible solutions.
- (4) Developed plans and strategies for coping with a task or problem.
- (5) Coordinated or directed actions.
- (6) Removed barriers and obtained resources.

Socially oriented leadership behaviors (labeled as “E1” to “E4” in Appendix D) include the following:

- (1) Enhanced task motivation.
- (2) Showed concern and support for others.
- (3) Managed conflict within the team.
- (4) Developed a positive group atmosphere.

The reliability for the task and social leadership behavior scales were acceptable with Cronbach’s $\alpha = .89$ and $.64$, respectively.² As with the trustworthiness measure, leadership behaviors were also aggregated to the group level. Hence, both the group leader’s task leadership behaviors and social leadership behaviors were aggregated from the individual group members (ICC = 0.78 and ICC = 0.72 for task and social leadership, respectively).

²Note that with scales of fewer than 10 items, Cronbach’s alpha levels may be lower.

Results

Manipulation Check

Our manipulation check indicates that there was an identified leader in place in both the group-chosen ($M = 6.72, SD = 0.45$) and assigned leader ($M = 6.81, SD = 0.39$) conditions. This was not the case in the control condition where there was not a leadership manipulation ($M = 1.96, SD = 2.25$). An overall ANOVA found significant difference among the three conditions, $F(2, 56) = 80.12, p = .00, \eta^2 = .74$, with the group-chosen condition and appointed leadership condition being significantly greater than the control condition, $F(1, 37) = 80.91, p = .00, \eta^2 = .69$ and $F(1, 37) = 85.11, p = .00, \eta^2 = .70$, respectively, indicating that our manipulation was successful, and suggesting that emergent leaders were not likely in this situation.

Group Harvest

Although an overall ANOVA for harvest level found only marginally significant differences among the three conditions, $F(2, 56) = 2.66, p = .079$, significant differences were found in group-level harvest when comparing specific leadership conditions against one another (see Tables 1 and 2). More specifically, we found no difference between the control (i.e., no leadership manipulation) ($M = 3005.51, SD = 751.12$) and assigned leadership conditions ($M = 2975.25, SD = 730.90$). However, those in the group-chosen leadership condition ($M = 2592.05, SD = 265.38$) had lower group harvest levels (i.e., were more cooperative) than those in either the control ($M = 3005.51, SD = 751.12$), $F(1, 37) = 5.14, p = .03, \eta^2 = .13$ or those in the assigned leadership condition ($M = 2975.25, SD = 730.90$), $F(1, 38) = 4.86, p = .034, \eta^2 = .11$, suggesting that the group-chosen leadership groups were the *most* cooperative in that their harvests were the most collectively reduced. Thus, hypothesis 1 was supported.

Group Cooperation

Recall that group-level cooperation is coded such that if a group manages to harvest at a sustainable level, 2,500 metric tons or less, they are considered to be cooperative (coded as 1 in the data) and if they overharvest, they are considered to be uncooperative with one another (and coded as 0 in the data). An overall chi-squared analysis revealed no statistical difference among the three conditions in regard to group-level cooperation, $\chi^2(2, N = 58) = 4.23, ns$. When comparing specific experimental conditions against one another (see Tables 1 and 2), however, one marginally significant difference emerged. Specifically, while those in the group-chosen leadership condition ($M = .65, SD = 0.49$) tended to have more group-level cooperation than those in the assigned leadership condition ($M = .35, SD = 0.49$), it was only marginally statistically significant, $\chi^2(1, N = 40) = 3.60, p = .06$. Those in the group-chosen leadership condition ($M = .65, SD = 0.49$) also were not statistically different than those in the control ($M = .39, SD = 0.50$), $\chi^2(1, N = 38) = 2.59$. In addition, no difference was found between the control (i.e., no

Table 1
Study 1 Descriptive Statistics and Correlations

Variable	M	SD	1	2	3	4	5	6
1. Manipulation†	1.03	0.82	–					
2. Group harvest	2857.60	633.37	–.00	–				
3. Group cooperation	0.47	0.50	–.04	–.55**	–			
4. Group trust	4.75	0.62	.09	–.64**	.50**	–		
5. Leadership—task	5.96	0.42	.01	.24	–.18	–.07	–	
6. Leadership—social	4.64	0.67	–.32*	–.75**	.67**	.43**	–.35*	–

Notes. * $p < .05$; ** $p < .01$.

†The manipulation was coded as either “0” (control), “1” (group-chosen), or “2” (assigned).

Table 2
 Study 1 Mean and Standard Deviations by Experimental Condition

	Control		Group-chosen leader		Assigned leader	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group harvest	3005.51	751.12	2592.05	265.38	2975.25	730.90
Cooperation	0.39	0.50	0.65	0.49	0.35	0.48
Trust	4.52	0.58	5.10	0.50	4.62	0.59
Leadership—task	n/a	n/a	5.95	0.48	5.96	0.36
Leadership—social	n/a	n/a	4.85	0.59	4.43	0.69

leadership manipulation) ($M = .39$, $SD = 0.50$) and assigned leadership conditions ($M = .35$, $SD = 0.49$), $\chi^2(1, N = 38) = .062$.

Looking at this from the perspective of percentages of groups that are cooperative, those in the group-chosen leader condition managed to reach a sustainable harvest 65% of the time, while those in appointed leader condition reached a sustainable harvest 35% of the time, and those in the control reached a sustainable harvest 44% of the time. Though in the predicted direction, these percentile differences reached only marginal statistical significance, and thus provide only limited additional support for Hypothesis 1.

Group Trustworthiness

An overall ANOVA revealed significant differences between experimental conditions for the trustworthiness variable, $F(2, 59) = 6.59$, $p = .003$, $\eta^2 = .19$. Exploring this difference in greater detail, we found no difference between the control ($M = 4.52$, $SD = 0.58$) and assigned leadership conditions ($M = 4.62$, $SD = 0.59$), $F(1, 37) = .62$, *ns*. But those in the group-chosen leadership condition ($M = 5.10$, $SD = 0.50$) were more trusting of their group members than those in either the control, $F(1, 37) = 12.68$, $p = .001$, $\eta^2 = .26$, or those in the assigned leadership conditions, $F(1, 38) = 7.43$, $p = .01$, $\eta^2 = .16$. This supports Hypothesis 2 (Tables 3–6).

Leadership—Tasks

This variable was measured only in the group-chosen or assigned leadership conditions, and not the control (i.e., no leadership). We found no difference in task-based leadership between the group-chosen ($M = 5.95$, $SD = 0.48$) and assigned leadership conditions ($M = 5.96$, $SD = 0.36$), $F(1, 38) = .01$, *ns*, thus disconfirming Hypothesis 3A.

Leadership—Social

Socially based leadership behaviors were also not measured in the control condition, where there was no leadership manipulation. Significant differences were found between the two manipulated leadership conditions. Specifically, those in the group-chosen condition reported more social-based leadership activity ($M = 4.85$, $SD = 0.59$) than those in the assigned leadership condition ($M = 4.43$, $SD = 0.69$), $F(1, 38) = 4.39$, $p = .043$, $\eta^2 = .10$, supporting Hypothesis 3B.

Study 2

While Study 1 provides some initial support for many of the hypotheses, several areas of concern could arise from its specific methodology. For one, the trust measure explored trust in the entire group, and not in the leader specifically. While trusting the group is an important aspect of acting in a more selfless way in a social dilemma, this study's manipulation of leadership selection prompts the question about

trust in the leader specifically. In addition, although we asked group members about the degree to which one person acted as a leader, we could not be sure that they were thinking of the same leader, since we did not ask them to identify which person was the leader. Finally, there could also be some question as to the validity of the “assigned” leader since no rationale was given to group members for why that person was chosen for the job. Study 2 was designed to replicate the experiment with slightly different methods so as to account for these issues and hopefully bring more confidence to the findings.

Methods

Participants and Research Design

In this second study, there were a total of 352 participants that comprised 88 four-person groups. Participants were a mix of part-time and full-time graduate-level business students who partook in this exercise as part of their orientation into graduate school. The experimental design had two conditions—the four-person group had either (a) a group-chosen leader where the group spent the first few minutes of their meeting selecting their leader ($n = 41$ groups), or (b) a randomly assigned group leader ($n = 47$ groups), where groups were told that the person chosen was specifically selected “based on a composite of criteria by the professors running this exercise” and the first few minutes were spent by first acknowledging the assigned leader and then by doing a “filler” task of ranking the importance of several items to their jobs as fishermen. Thus, in both conditions, groups did a common task at the outset at which they had to reach agreement on a decision. Participants were randomly assigned to experimental conditions and to their roles within the group. The exact wording of the instructions for the conditions were on a cover sheet attached to the case and can be seen in Appendix E.

Procedures and Materials

The group exercise used in this second experiment, SHARC (Wade-Benzoni et al., 1997), is identical to the one used in Study 1. However, the postmeeting questionnaire was slightly altered. First, unlike in Study 1 where the focus of the trust items was on the entire group, the focus of this questionnaire was now shifted to ask about the group leader specifically. Second, this new study also utilized a new manipulation check to be more focused on a specific leader. These dependent measures are outlined in greater detail below and presented in Appendices F and G.

Dependent Measures

Manipulation Check. We did a manipulation check in order to see whether an individual leader was in place during the group meeting, and also to assess agreement regarding who that group leader was. Our manipulation check, as can be seen in Appendix F, asked participants the following open-ended statement: “Did anybody in your group act as the leader for the group? If yes, then who (this may be yourself)? Write their name on the blank line below. And if there was not a group leader then please leave this answer blank.”

Group Harvest. As with Study 1, we explored the total group harvest level by aggregating the individual harvest levels of all four participants in each group.

Group Cooperation. A reduction in harvest levels to a sustainable shark population, 2,500 metric tons, indicated a cooperative group, while those groups that overharvested (creating an unsustainable resource) were considered uncooperative. Cooperative groups with a harvest of 2,500 metric tons or less were coded as “1” and those who overharvested were coded as “0”.

Leader Trustworthiness. To assess interpersonal trustworthiness in the group leader, we again used the Organizational Trust Inventory—Short Form (OTI-SF) developed and validated by Cummings and Bromiley (1996). The questions here were modified, however, to measure trustworthiness in the group

leader (and not in the collective group, as in Study 1). The reliability for this measure was acceptable with Cronbach’s $\alpha = .71$. The specific items themselves can be seen in Appendix F. Leader trustworthiness as reported in the analyses is calculated by aggregating the individual group members’ perceptions of trust in their leader ($ICC = 0.95$).

Leadership Behavior. Leadership behaviors were identical to that of Study 1 in that we examined leadership behaviors along two dimensions: task-oriented behaviors and socially oriented behaviors. As opposed to those used in Study 1, the questions now explicitly asked about the behaviors of the “group leader.” The specific questions can be seen in Appendix G. The reliability for the group leader’s task leadership behavior (6 questions) and social leadership behaviors (4 questions) was acceptable with Cronbach’s $\alpha = .62$ and $.68$, respectively. Both the group leader’s task leadership behaviors and social leadership behaviors were aggregated from the individual group members ($ICC = 0.70$ and $ICC = 0.79$ for social and task leadership, respectively).

Results

Manipulation Check

Our manipulation check indicates that there was 100% agreement on the identity of their group leader in 93.18% of the 88 groups. Those groups who did not have 100% agreement on the identity of their group leader were removed, leaving a total of 82 groups in the analyses reported below.

Group Harvest

Replicating Study 1, this second study found a significant difference in harvest levels between experimental conditions. Those in the group-chosen leadership condition ($M = 2686.63, SD = 412.35$) had lower

Table 3
Study 2 Descriptive Statistics and Correlations

Variable	M	SD	1	2	3	4	5
1. Manipulation†	1.52	0.50	–				
2. Group harvest	2960.90	1267.04	.29**	–			
3. Group cooperation‡	0.28	0.45	–.28*	–.43**	–		
4. Trust	5.26	0.59	–.49**	–.19	.47**	–	
5. Leadership—task	3.79	0.26	–.04	.09	–.02	.048	–
6. Leadership—social	3.90	0.99	–.60**	–.02	.19	.54**	.31**

Notes. * $p < .05$; ** $p < .01$.

†The manipulation was coded as either “1” (group-chosen) or “2” (assigned).

‡This was coded as “1” for sustainable harvest of 2,500 or below, and “0” otherwise.

Table 4
Study 2 Mean and Standard Deviations by Experimental Condition

	Group-chosen leader		Assigned leader	
	M	SD	M	SD
Group harvest	2686.13	412.35	2974.70	531.72
Group cooperation	0.41	0.50	0.16	0.37
Trust	5.56	0.21	4.98	0.69
Leadership—task	3.80	0.27	3.78	0.25
Leadership—social	4.52	0.90	3.33	0.71

group harvest levels (i.e., were more cooperative) than those in the assigned leadership condition ($M = 2974.69$, $SD = 531.72$), $F(1, 80) = 7.40$, $p = .008$, $\eta^2 = .09$.

Group Cooperation

Those in the group-chosen leadership condition were also more likely to cooperatively reduce their harvest levels to sustainable levels ($M = .41$, $SD = 0.50$) than those in the assigned leadership condition ($M = .16$, $SD = 0.37$), $\chi^2(1, N = 82) = 5.08$, $p = .02$. This can also be interpreted that 41% of groups in the group-chosen leadership condition worked together to reduce the group harvest level to a sustainable 2,500 metric tons versus 16% of groups in the assigned leadership condition.³

Leader Trustworthiness

Similar to the findings from Study 1, participants in the group-chosen leadership condition were more trusting of their group leader ($M = 5.56$, $SD = 0.21$) than those in the assigned leadership conditions ($M = 4.98$, $SD = 0.69$), $F(1, 80) = 26.02$, $p = .001$, $\eta^2 = .25$. Recall that Study 1 measured trust in the entire group, while Study 2 measured trust in the leader, yet the pattern of results remains the same across the two.

Leadership Behavior—Tasks

As with Study 1, no difference in task-based leadership behaviors were found between the group-chosen ($M = 3.80$, $SD = 0.27$) and assigned leadership conditions ($M = 3.78$, $SD = 0.25$), $F(1, 80) = .11$, *ns*.

Leadership Behavior—Social

Replicating Study 1, participants in the group-chosen condition reported more social-based behaviors from their leaders ($M = 4.52$, $SD = 0.90$) than those in the assigned leadership condition ($M = 3.33$, $SD = 0.71$), $F(1, 80) = 45.26$, $p < .001$, $\eta^2 = .36$.

Leader Trustworthiness as a Mediator

It is interesting to note that there is no significant correlation between trust in the group leader and overall group harvest levels—yet there is a significant correlation between trust in a group leader and group cooperation (i.e., a reduction in harvest level to a sustainable 2,500 metric tons). Hence, we explored the potential mediating role that trust may play between leadership selection and group cooperation. While a variety of mediation statistical techniques are in use today, we chose to use Kenny et al. (1998)'s four-step process. A regression analyses demonstrated each that (a) whether the group leader was assigned or group-chosen (our manipulation) predicted group cooperation, $\beta = .28$, $t(80) = -2.56$, $p = .012$, (b) leadership selection also predicted the perceptions of trust in the group leader, $\beta = -.49$, $t(80) = -5.10$, $p = .00$, (c) perceptions of trust in the group leader predicted group cooperation, $\beta = .47$, $t(80) = 4.71$, $p = .00$, and remained significant even when controlling for our manipulation, $\beta = .44$, $t(79) = 3.82$, $p = .00$, and (d) when controlling for group leader trust, the significant relationship between our manipulation (group leader selection) and group cooperation, $\beta = -.28$, $t(80) = -2.56$, $p = .012$, was no longer significant, $\beta = -.06$, $t(79) = -.51$, *ns*. A Sobel test of the mediation strength (the indirect effect of the relationship between the manipulation and group cooperation via perceptions of trust in the group leader) was significant, $Z = -3.058$, $p = .001$. In sum, the perceptions of trust in the group leader mediates the relationship between leadership selection (group-chosen or assigned) and group cooperation (cooperating to reduce harvest levels to 2,500 metric tons).

³Note that although these cooperation rates are significantly lower than those in Study 1, the continuous variable (group harvest rates) are not significantly different, indicating that the levels between the two studies are not in the end as far apart as this dichotomous variable makes them appear.

Study 3

To further clarify and further reinforce the findings, we designed a third study with two alterations to the methodology. First, in prior studies, there is the possibility that in the assigned leadership conditions (especially in Study 2) the leader, chosen from outside the group, could be seen as something of an “out-group” member. In addition, the task that the groups in the assigned leadership condition completed before beginning the actual case is not completely parallel to the leadership-related task that the group-chosen leadership condition experienced. To address this, Study 3 allows *all* teams to attend to the problem of selecting a leader, but in the assigned leader condition, their decision will not be honored with selection of their top choice. Second, the trust measure used in Studies 1 and 2, though well-validated in the research community, might not be an ideal fit for our newly created and short-lived teams. Instead, those questions may rely on a deeper set of experiences to truly be of value. Study 3 instead uses a new two-item trust measure designed specifically to capture impressions of trust based on this one-time interaction. Replication of our results under these new conditions would give us yet more confidence in the robustness of the overall phenomena.

Methods

Participants and Research Design

In this third study, there were a total of 204 participants that comprised 51 four-person groups. Participants were a mix of part-time and full-time graduate-level business students who partook in this exercise as part of an organizational behavior class. As in previous studies, the experimental design had two conditions—the four-person group had either (a) a group-chosen leader where the group spent the first few minutes of their meeting selecting their leader ($n = 24$ groups), or (b) an assigned group leader ($n = 27$ groups). In both conditions, participants had to discuss their group’s leadership prior to doing the exercise. Unlike previous studies, in the assigned leader condition, they ranked their preferences for their group’s leader from one to four, with one being their top choice. Unbeknownst to the participants in the assigned leader condition, we systematically assigned the leadership role to the group’s third choice.⁴ Thus, in both conditions, groups did a common task at the outset during which they had to reach agreement regarding group leadership. Participants were randomly assigned to experimental conditions and to their roles within the group. The exact wording of the instructions for the conditions was on a cover sheet attached to the case and can be seen in Appendix H.

Procedures and Materials

The group exercise used, SHARC (Wade-Benzoni et al., 1997), is identical to the previous studies. However, the pre-exercise task was altered slightly as discussed above. The postexercise questionnaire was also modified with a new 2-item measure of trust. The new trust measure is discussed below.

Dependent Measures

Group Harvest. As with prior studies, we explored the total group harvest level by aggregating the individual harvest levels of all four participants in each group.

Group Cooperation. A reduction in harvest levels to a sustainable shark population, 2,500 metric tons, indicated a cooperative group, while those groups that overharvested (creating an unsustainable

⁴We thank an anonymous reviewer for suggesting this process.

resource) were considered uncooperative. Cooperative groups with a harvest of 2,500 metric tons or less were coded as “1” and those who overharvested were coded as “0”.

Leader Trustworthiness. To assess trustworthiness in the group leader, we asked two questions and their responses were on the same 1–7 scale used in the prior studies. The specific questions for leader trustworthiness are as follows:

Based on this one interaction, how much do you think you would trust this leader in future interactions?

Based on this one interaction, how much do you think this leader would act in a responsible manner for his/her team in other interactions?

Perceived leader trustworthiness reported in the analysis was calculated by aggregating the two questions (Cronbach’s $\alpha = .79$) and is reported as a group construct. The inter-rater reliability between group members for this aggregated measure was acceptable (ICC = 0.91).

Leadership Behavior. Measures of leadership behaviors were identical to that of Study 2 in that we examined leadership behaviors along two dimensions: task-oriented behaviors and socially oriented behaviors. The reliability for group leader’s task behaviors (6 questions) was acceptable with Cronbach’s $\alpha = .77$. The reliability for the group leader’s social leadership behaviors (4 questions) was acceptable with Cronbach’s $\alpha = .73$. As before, these questions were aggregated into group-level constructs. The inter-rater reliability between group members for these aggregated constructs was also acceptable (ICC = .72 for task-oriented behaviors and ICC = .81 for socially oriented behaviors).

Results

Group Harvest

Replicating the prior studies, we again found a significant difference in harvest levels between experimental conditions. Those in the group-chosen leadership condition ($M = 2743.67, SD = 315.27$) had lower group harvest levels (i.e., were more cooperative) than those in the assigned leadership condition ($M = 3138.78.21, SD = 576.35$), $F(1, 49) = 13.97, p = .00, \eta^2 = .22$.

Group Cooperation

Groups in both conditions tended to overharvest and deplete the SHARC population (a harvest over 2,500 metric tons). However, those in the group-chosen leadership condition had more cooperative groups (harvesting 2,500 metric tons or less) ($M = 54.17\%, SD = 0.51$) than those in the assigned leadership condition ($M = 22.22\%, SD = 0.42$), $F(1, 49) = 5.98, p = .018, \eta^2 = .11$.

Table 5
Study 3 Descriptive Statistics and Correlations

Variable	M	SD	1	2	3	4	5
1. Manipulation†	1.53	0.50	–				
2. Group harvest	2900.78	529.85	.47**	–			
3. Group cooperation‡	0.37	0.49	–.33*	–.67**	–		
4. Trust	5.07	1.06	–.50**	–.35*	.30*	–	
5. Leadership—tasks	4.43	0.43	.01	.03	–.00	–.09	–
6. Leadership—social	4.17	1.10	–.68**	–.26	.24	.50**	.28*

Notes. * $p < .05$; ** $p < .01$.

†The manipulation was coded as either “1” (self-selected), or “2” (assigned).

‡This was coded as “1” for sustainable harvest of 2,500 or below, and “0” otherwise.

Table 6
 Study 3 Mean and Standard Deviations by Experimental Condition

	Self-selected leader		Assigned leader	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group harvest	2743.76	315.27	3138.78	576.35
Group cooperation	0.54	0.51	0.22	0.43
Trust	5.63	0.46	4.58	1.20
Leadership—tasks	4.42	0.53	4.43	0.32
Leadership—social	4.89	0.94	3.53	0.51

Leader Trustworthiness

Although using a different measure for trust in this study than in Studies 1 and 2, a similar pattern of results was found. Participants in the group-chosen leadership condition were more trusting of their group leader ($M = 5.63$, $SD = 0.46$) than were those in the assigned leadership condition ($M = 4.58$, $SD = 1.20$), $F(1, 49) = 16.18$, $p = .001$, $\eta^2 = .25$.

Leadership Behavior—Tasks

As with the prior studies, no difference in task-based leadership behaviors was found between the group-chosen ($M = 4.42$, $SD = 0.53$) and assigned leadership conditions ($M = 4.43$, $SD = 0.32$), $F(1, 49) = .003$, *ns*.

Leadership Behavior—Social

Replicating Studies 1 and 2, participants in the group-chosen condition reported more social-based behaviors from their leaders ($M = 4.89$, $SD = 0.94$) than those in the assigned leadership condition ($M = 3.53$, $SD = 0.51$), $F(1, 49) = 42.72$, $p = .00$, $\eta^2 = .46$.

Leader Trustworthiness as a Mediator

Although not predicted, we also tested whether trust in the leader mediates the effect of leadership selection process and having a cooperative group, as was performed in Study 2, again using the Kenny et al. (1998)'s four-step process. Regression analyses demonstrated each that (a) whether the group leader was assigned or group-chosen (our manipulation) predicted group cooperation, $\beta = -.33$, $t(49) = -2.44$, $p = .018$, (b) leadership selection also predicted the perceptions of trust in the group leader, $\beta = -.49$, $t(49) = -4.02$, $p = .00$, (c) perceptions of trust in the group leader predicted group cooperation, $\beta = .30$, $t(49) = 2.18$, $p = .03$, and remained marginally significant when controlling for our manipulation, $\beta = -.25$, $t(49) = 1.84$, $p = .07$. Finally, (d) when controlling for group leader trust, the significant relationship between our manipulation (group leader selection) and group cooperation, $\beta = -.33$, $t(49) = -2.44$, $p = .018$, was no longer significant, $\beta = -.24$, $t(48) = -1.56$, *ns*. A Sobel test of the mediation strength (the indirect effect of the relationship between the manipulation and group cooperation via perceptions of trust in the group leader) was significant, $Z = -1.92$, $p = .05$. In sum, the perceptions of trust in the group leader at least marginally mediates the relationship between leadership selection (group-chosen or assigned) and group cooperation (cooperating to reduce harvest levels to 2,500 metric tons).⁵

⁵Based on the comments of an anonymous reviewer, we also checked a subset of the data on whether being selected by your group as a leader but then *not* being chosen as the actual leader in the end might affect one's cooperation rates and trust in the actual leader chosen. We did not find any significant effects of this kind.

Discussion

Results revealed that groups operating with group-chosen leaders have different dynamics than those operating with assigned leaders. Groups with group-chosen leaders proved to be more trusting of each other, more trusting of their leaders, and to make more cooperative decisions than were either assigned leader or no-leader groups. Furthermore, how the group leader is selected also seemed to influence the leadership behaviors, with group-chosen leaders being more in tune to the social aspects of the group.

While groups in the group-chosen leadership condition did indeed have one successful decision under their belts before they began their main task (i.e., mutually selecting their leader), the resulting higher levels of trust and cooperation that they demonstrated cannot be attributed solely to that. The control condition in Study 1 and the assigned leader conditions in Studies 2 and 3 also did a task in which they needed to come to agreement about a decision, and it had no relationship with improved cooperation in those cases. In fact, in Study 3, the task also required the group to come to a consensus about leadership choices. The difference is that only in the group-chosen leadership condition were participants able to enact their choice and have the ability to work with their chosen leader. Successfully choosing a leader thus seems to be a specific task that created a working environment with a more unique positive effect on trust and future cooperation.

The process of successfully selecting the leader in a group may serve as a prime—a signal that high levels of trust have been placed in the individual team members to guide this decision, and this trust may spread to the decisions to act in the best interest of that group, even if it means sacrificing economic self-interest for the good of the collective. Trust seems to spread to both the group leader specifically, as well as the group as a whole. Similarly, leaders who were selected by their teammates seemed to want to reciprocate by making sure the team had a positive atmosphere for working together. While all leaders in our studies were seen to attend to the task at hand, the group-chosen leaders alone seemed to work harder to maintain a motivated atmosphere that was free of conflict, and work in a more collaborative and problem-solving way. There is clearly something about the specific responsibility of selecting a leader that inspires a group, and its leader, to have a more socially oriented approach than those groups with assigned leaders. Additionally, previous work has shown that leaders with these types of tendencies may encourage more positive forms of upwards dissent from their subordinates (Redmond, Jameson, & Binder, 2016) while at the same time minimizing negative emotions and counterproductive work behaviors (Kessler, Bruursema, Rodopman, & Spector, 2013), so there may be yet further advantages to encouraging leaders to feel this connection with the rest of the team as well.

This finding aligns with previous work on the value of participative decision making more generally. Ironically, the field of participative leadership notes the value in leaders allowing followers to be more, rather than less, involved in making task decisions on the job (as opposed to having decisions being handed down from the top), but it says nothing about using the same process to actually select leaders. Yet, on a broader political scale, the findings mirror the democratic voting-based political systems found in most developed countries. Having a say in who will be the leader can, our results suggest, create an environment with both more trust in the entire group and more cooperative outcomes.

Theoretically, this set of findings has several important implications. For one, it gives us information about how and why groups facing a conflict may find a path toward cooperation by taking actions that specifically bolster trust. It contributes to the literature on voice and suggests that being able to participate in the decision about leadership selection may actively change one's feelings about (and trust in) both the collective group and the leader, as well as both decisions and actions in the group. The literature on voice has previously been primarily linked to feelings of fairness and to satisfaction, but here our results suggest that there may be implications for cooperative decisions as well. This would be a shift in the paradigm toward more behavioral changes from the process of having a voice, as opposed to one focused on frame of mind. Our participants, when given voice in their choice of a leader (more

specifically, one that was *heard* and respected) in their choice of leader, were more willing to give up individual gain for the sake of sustaining a natural resource over time. It would be interesting to further explore the nuances of this effect in other contexts. In addition, our findings may contribute to the area of leadership as well. The results suggest that being selected by one's peers may actively change the behaviors of the leader as well. This may have implications for the body of work on leader–member exchange (LMX), which is based on the premise that leaders do not act in a vacuum but are influenced by their followership to a large degree.

Practically speaking, the study has implications for groups working in organizations themselves, as well as for managers, since most groups do face elements of social dilemma choices of some kind. For groups, it is useful to know that making leadership selection an active and thoughtful process can reap benefits for the whole team in the work to come. Some types of groups, such as the ad hoc committees mentioned earlier, may tend to “float along” without a specific leader for a time, until one organically emerges. These results suggest that instead of using that process, the time would be well spent to make leadership selection a priority in the early part of a group's work together. For managers, it suggests that group leadership may be yet one more type of decision that needs to be pushed down to the “end users” instead of being handed down from above. Despite the reassurances that participants got in our second study that the leaders had been chosen specifically for this role for particular reasons, trust and cooperation did not seem to result from this approach. Nor did voice alone matter in Study 3, without influence on the final choice. This speaks to the increasing movement for empowerment and decision making at lower levels of the organization. The results also suggest that allowing employees more of a voice over issues of power and control, at least in team settings, may reap benefits in terms of inspiring more selflessness in contributing to the team. Of course, not all social dilemmas happen in an organizational setting, and our work has implications for larger social and political issues as well. The buy-in that results from the selection of a leader seems to offer valuable goodwill toward the future sacrifices needed to make for successful decisions in social dilemmas.

There are, of course, limitations to note. The main limitation to our work stems from the experimental nature of the study. While due to random assignment, we have no reason to believe that students in any one condition would be different from those in another condition, the fact that these decisions were made in a classroom exercise instead of in the real world with real consequences should be noted as a limitation. Teams were created just for this one exercise and then disbanded, and team members may or may not have known each other well ahead of time. It may well be the case that future interactions and repeat exposure to the same team members and leaders would significantly change the way that trust forms and is maintained, and how teams (members and leaders both) choose to behave. For example, the nature of the social norms that develop in groups over time may provide strong pressures in and of themselves to cooperate with the group instead of valuing economic payouts at all costs (Elster, 1989). Finally, the task had a very well-defined payout schedule that is not always analogous to real-world decisions. In addition, the task did not seem to encourage emergent leaders to surface when a leader was not explicitly identified at the beginning, which may not mirror other tasks and groups in the world.

Perhaps, in a real situation, the importance of the decision at hand may act as a moderator for our effect. For example, it is possible that very serious or highly consequential decisions may naturally inspire more cooperation (or more competition) regardless of the leader in place. We also empirically explored only one type of group task, a mixed-motive resource-based social dilemma, and this may limit the generalizability of our study. Although this case provides a simulation that does mirror the types of constraints faced by those depending on dwindling natural resources for their livelihoods, it is far from the only type of situation that real interacting groups encounter. Future research can explore whether these results replicate in other types of group contexts.

Overall, in this article, we demonstrate that participation in the process of *selecting* a leader can influence cooperation in groups. Relative to groups with assigned leaders, groups of peers who chose their leaders may have been more in tune with the group's needs, and displayed more willingness to engage in

both cooperation and trust. This provides one more clue into mapping the relationship between leadership and group dynamics.

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APPENDIX A Cover Sheet Instructions for Study 1

Cover Sheet Instructions for the Group-chosen Leader condition

You represent the (Large Commercial fishers) (Small Commercial Fishers), (Recreational Competitive Fishers) (Recreational Tours Fishers). The other people you will be meeting and negotiating with represents others who also harvest SHARC. The information for your meeting is attached. Please review this information carefully before you begin your meeting.

Prior to discussing the issues at hand regarding SHARC, your group should first select one of the four members to act as the leader for the meeting. The exact responsibilities of this leader are open and will likely vary a function of the needs and desires of your group, but keep in mind that the leader of this meeting has no ability or authority to force a harvest decision upon you. You, and you alone, decide what you will actually harvest. Again, the identification of the leader should be performed *first*, before discussing the business at hand.

Cover Sheet Instructions for the Assigned Leader condition

You represent the (Large Commercial fishers) (Small Commercial Fishers), (Recreational Competitive Fishers) (Recreational Tours Fishers). The other people you will be meeting and negotiating with represents others who also harvest SHARC. The information for your meeting is attached. Please review this information carefully before you begin your meeting.

Prior to discussing the issues at hand regarding SHARC, your group should acknowledge the appointed leader of the meeting, (Large Commercial fishers) (Small Commercial Fishers), (Recreational Competitive Fishers) (Recreational Tours Fishers) representative. This leadership position was randomly assigned. The exact responsibilities of this leader are open and will likely vary a function of the needs and desires of your group, but keep in mind that the leader of this meeting has no ability or authority to force a harvest decision upon you. You, and you alone, decide what you will actually harvest. Again, a leader for this group meeting has been randomly assigned and that person is the (Large Commercial fishers) (Small Commercial Fishers), (Recreational Competitive Fishers) (Recreational Tours Fishers) representative. The identification of the leader should be performed *first*, before discussing the business at hand.

Cover Sheet Instructions for the Control condition

You represent the (Large Commercial fishers) (Small Commercial Fishers), (Recreational Competitive Fishers) (Recreational Tours Fishers). The other people you will be meeting and negotiating with represents others who also harvest SHARC. The information for your meeting is attached. Please review this information carefully before you begin your meeting.

Prior to discussing the issues at hand regarding SHARC, your group (as a collective) should first rank order the following four items for surviving at sea on a scale of 1 (most important) to 4 (least important): mirror, box of chocolates, 1 gallon of water, knife. This collective group ranking does not influence your harvest decision. You, and you alone, decide what you will actually harvest. Again, the ranking of these items should be performed *first*, before discussing the business at hand.

APPENDIX B Payoff Calculations for SHARC Roles for Studies 1 and 2

Current harvest levels in metric tons by role prior to meeting		
1	Large commercial harvest	1,400
2	Small commercial harvest	1,300
3	Recreational competitive harvest	1,200
4	Recreational tours harvest	1,100

Payoff calculations by role after meeting		
1	Large commercial payoff	$\$10,000 \times (\text{Harvest level}^* + 0.3(\text{Future}))$
2	Small commercial payoff	$\$10,000 \times (\text{Harvest level}^* + 0.4(\text{Future}))$
3	Recreational competitive payoff	$\$10,000 \times (\text{Harvest level}^* + 0.5(\text{Future}))$
4	Recreational tours payoff	$\$10,000 \times (\text{Harvest level}^* + 0.6(\text{Future}))$
5	Future	Smaller of 2,500 or (5,000—total harvest level)
6	*Harvest level	Harvest level for that particular role

APPENDIX C Trust¹ and Manipulation Check² Measures for Study 1

Directions: Please answer each statement below by putting a circle around the number that best reflects your degree of agreement or disagreement with that statement. Keep in mind that the “other group members” refers to those representing other roles in your meeting. Please use the following scale:

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree

						SD		SA
1	I think the other group members told the truth in the meeting. T1	1	2	3	4	5	6	7
2	I think the other group members are the type who meet obligations. T2	1	2	3	4	5	6	7
3	I consider the group members to be reliable. T3	1	2	3	4	5	6	7
4	I think my group members succeed by stepping on other people. T4 REV	1	2	3	4	5	6	7
5	I feel the group members strongly tried to get the upper hand. T5 REV	1	2	3	4	5	6	7
6	I think the other group members took advantage of me. T6 REV	1	2	3	4	5	6	7
7	I feel the group members negotiated with me honestly. T7	1	2	3	4	5	6	7
8	I feel that the other group members will keep their word. T8	1	2	3	4	5	6	7
9	I think the other group members did not mislead me. T9	1	2	3	4	5	6	7
10	I feel my other group members might try to get out of their commitments. T10 REV	1	2	3	4	5	6	7
11	I feel that the other group members negotiated fairly. T11	1	2	3	4	5	6	7
12	I feel that the group members might take advantage of vulnerability. T12 REV	1	2	3	4	5	6	7
13	By and large, one person acted as our group leader. M1	1	2	3	4	5	6	7

¹For the purposes of this Appendix, trust measures are marked “T1” through “T12” and “REV” if reverse scored.

²For the purposes of this Appendix, the manipulation check is marked “M1”.

APPENDIX D Leadership Behavior Measure (Task¹ and Social²) for Study 1

Please use the following scale in evaluating your leader’s behavior:

		1	2	3	4	5	6	7
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
14	Defined the problem. Task1	1	2	3	4	5	6	7
15	Facilitated information exchange. Task2	1	2	3	4	5	6	7
16	Facilitated evaluation and analysis of possible solutions. Task3	1	2	3	4	5	6	7
17	Enhanced motivation. E1							
18	Showed concern and support for others. E2							
19	Developed plans and strategies for coping with a task or problem. Task4	1	2	3	4	5	6	7
20	Coordinated or directed actions. Task5	1	2	3	4	5	6	7
21	Managed conflict within the team. E3							
22	Removed barriers and obtained commitments. Task6	1	2	3	4	5	6	7
23	Developed a positive group atmosphere. E4	1	2	3	4	5	6	7

¹For the purposes of this Appendix, task-related leadership measures are marked “Task1” through “Task 6.”

²For the purposes of this Appendix, socially related leadership measures are marked “E1” through “E4.”

APPENDIX E Study 2 Cover Sheet Instructions

Cover Sheet Instructions for the Group-chosen Leader condition

You represent the (Large Commercial fishers) (Small Commercial Fishers), (Recreational Competitive Fishers) (Recreational Tours Fishers). The other people you will be meeting and negotiating with represents others who also harvest SHARC. The information for your meeting is attached. Please review this information carefully before you begin your meeting.

Prior to discussing the issues at hand regarding SHARC, your group should first select one of the four members to act as the leader for the meeting. The exact responsibilities of this leader are open and will likely vary a function of the needs and desires of your group, but keep in mind that the leader of this meeting has no ability or authority to force a harvest decision upon you. You, and you alone, decide what you will actually harvest. Again, the identification of your group’s leader should be performed *first*, before discussing the business at hand.

Cover Sheet Instructions for the Assigned Leader condition

You represent the (Large Commercial fishers) (Small Commercial Fishers), (Recreational Competitive Fishers) (Recreational Tours Fishers). The other people you will be meeting and negotiating with represents others who also harvest SHARC. The information for your meeting is attached. Please review this information carefully before you begin your meeting.

Prior to discussing the issues at hand regarding SHARC, your group should acknowledge the appointed leader of the meeting, (Large Commercial fishers) (Small Commercial Fishers), (Recreational Competitive Fishers) (Recreational Tours Fishers) representative. This leadership position was selected based on a composite of criteria by the professors running this exercise. The exact responsibilities of this leader are open and will likely vary a function of the needs and desires of your group, but keep in mind

that the leader of this meeting has no ability or authority to force a harvest decision upon you. You, and you alone, decide what you will actually harvest. Again, a leader for this group meeting has been randomly assigned and that person is the (Large Commercial fishers) (Small Commercial Fishers), (Recreational Competitive Fishers) (Recreational Tours Fishers) representative. The identification of the leader should be performed *first*, before discussing the business at hand.

In addition, prior to discussing the issues at hand regarding SHARC, your group (as a collective) should first rank order the following four items for surviving at sea on a scale of 1 (most important) to 4 (least important): mirror, box of chocolates, 1 gallon of water, knife. This collective group ranking does not influence your harvest decision.

APPENDIX F Study 2 Leadership Trust¹ Measures

Did anybody in your group act as the leader for the group? If yes, then who (this may be yourself)? Write their name on the blank line below. And if there was not a group leader then please leave this answer blank.

group leader name: _____

Please answer each statement below by putting a circle around the number that best reflects your degree of agreement or disagreement with that statement. Please use the following scale:

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree

1	I think my leader told the truth in the meeting. T1	1	2	3	4	5	6	7
2	I think my leader is the type who meets obligations. T2	1	2	3	4	5	6	7
3	I consider my leader to be reliable. T3	1	2	3	4	5	6	7
4	I think my leader succeeds by stepping on other people. T4 REV	1	2	3	4	5	6	7
5	I feel my leader strongly tried to get the upper hand. T5 REV	1	2	3	4	5	6	7
6	I think my leader took advantage of me. T6 REV	1	2	3	4	5	6	7
7	I feel my leader negotiated with me honestly. T7	1	2	3	4	5	6	7
8	I feel that my leader will keep their word. T8	1	2	3	4	5	6	7
9	I think my leader did not mislead me. T9	1	2	3	4	5	6	7
10	I feel my leader might try to get out of their commitments. T10 REV	1	2	3	4	5	6	7
11	I feel that my leader negotiated fairly. T11	1	2	3	4	5	6	7
12	I feel that my leader might take advantage of vulnerability. T12 REV	1	2	3	4	5	6	7

¹For the purposes of this Appendix, trust measures are marked “T1” through “T12” and “REV” if reverse scored.

APPENDIX G Study 2 Leadership Behavior Measure (Task¹ and Social²)

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree

13	My leader defined the problem. Task1	1	2	3	4	5	6	7
14	My leader facilitated information exchange. Task2	1	2	3	4	5	6	7
15	My leader facilitated evaluation and analysis of possible solutions. Task3	1	2	3	4	5	6	7
16	My leader enhanced motivation. E1	1	2	3	4	5	6	7
17	My leader showed concern and support for others. E2	1	2	3	4	5	6	7
18	My leader developed plans and strategies for coping with a task or problem. Task4	1	2	3	4	5	6	7
21	My leader coordinated or directed actions. Task5	1	2	3	4	5	6	7
22	My leader managed conflict within the team. E3	1	2	3	4	5	6	7
23	My leader removed barriers and obtained commitments. Task6	1	2	3	4	5	6	7
24	My leader developed a positive group atmosphere. E4	1	2	3	4	5	6	7

¹For the purposes of this Appendix, task-related leadership measures are marked “Task1” through “Task 6.”

²For the purposes of this Appendix, socially related leadership measures are marked “E1” through “E4.”

APPENDIX H Study 3 Cover Sheet Instructions

Cover Sheet Instructions for the Group-Selected Leader condition

You represent the (Large Commercial fishers) (Small Commercial Fishers), (Recreational Competitive Fishers) (Recreational Tours Fishers). The other people you will be meeting and negotiating with represents others who also harvest SHARC. The information for your meeting is attached. Please review this information carefully before you begin your meeting.

Prior to discussing the issues at hand regarding SHARC, your group should first select one of the four members to act as the leader for the meeting. The exact responsibilities of this leader are open and will likely vary as a function of the needs and desires of your group, but keep in mind that the leader of this meeting has no ability or authority to force a harvest decision upon you. You, and you alone, decide what you will actually harvest. Again, the identification of your group’s leader should be performed *first*, before discussing the business at hand.

One member (it does not matter who) write the name of the selected leader on this sheet in the space below. Tear off this cover page (cover page only) and provide this sheet to the instructor.

GROUP #:

SELECTED GROUP LEADER: _____

Cover Sheet Instructions for the Assigned Leader condition

You represent the (Large Commercial fishers) (Small Commercial Fishers), (Recreational Competitive Fishers) (Recreational Tours Fishers). The other people you will be meeting and negotiating with represents others who also harvest SHARC. The information for your meeting is attached. Please review this information carefully before you begin your meeting.

Prior to discussing the issues at hand regarding SHARC, your group should rank order the group’s preference to act as the leader for the meeting (from the top choice, 1, to the last choice, 4). The professor will select the leadership position based on a composite of criteria including your ranking. The exact responsibilities of this leader are open and will likely vary as a function of the needs and desires of your group, but keep in mind that the leader of this meeting has no ability or authority to force a harvest decision upon you. You, and you alone, decide what you will actually harvest. Again, the identification of your group’s leader should be performed *first*, before discussing the business at hand.

One member (it does not matter who) write the names of the ranked preference for leaders on this sheet in the space below. Tear off this cover page (cover page only) and provide this sheet to the instructor.

GROUP #: _____

RANKED GROUP LEADERS:

- 1 _____
- 2 _____
- 3 _____
- 4 _____

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