Goal Orientation, Mode of Payment, and the Distribution of Outcomes in Cooperative Groups

Marilyn Seiler and Morton Deutsch

Teachers College, Columbia University

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Deutsch (Note 1) suggests that distributive justice takes various forms in our society and specifies some of the conditions under which the various forms are most likely to appear. Consistent with this viewpoint the present study hypothesized that the goal orientation of a cooperative group and the manner in which it is paid determine which distribution principle will be used. It was predicted that economically-oriented dyads would prefer equity, while equality would be preferred by solidarity-oriented groups. It was also predicted that groups paid as a function of their group output would allocate their resources according to the equity principle, while groups paid a lump sum amount would adhere to the equality norm. Using male dyads, the results clearly supported the contention that economic groups prefer equity and solidarity groups prefer equality. Weak evidence indicating that lump sum payment groups tended to choose an equal distribution while the function of group output payment groups tended to use an equity distribution was also obtained. Some possible interpretations and implications of these findings are discussed.
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Until recently, social psychologists interested in the psychology of justice have concentrated on issues relating to equity (Adams, 1965; Pritchard, 1969; Walster, Berscheid, & Walster, 1973). Basically, the equity model assumes that group members, when distributing their group outcome, will maintain proportionality between their own outcomes (rewards) and inputs (work contributions) and those of their coworkers.

Currently, theoretical interest is being focused on the variety of allocation rules that persons utilize in determining a just distribution of desired resources. Lerner (1974), as well as Loventhal (in press), have indicated that there are a variety of principles that can be used as a basis for distributing outcomes, and have stated a number of hypotheses about the conditions which give rise to the different principles. Deutsch (Note 1) has proposed similar ideas. Namely, in cooperative relations in which economic productivity is a primary goal, equity will be the dominant principle; in cooperative relations in which the fostering or maintenance of enjoyable social relations is the common goal, equality will be the dominant principle; in cooperative relations in which the fostering of personal development and personal welfare is the common goal, need will be the dominant principle of distributive justice.

Elsewhere, Deutsch (in press) has outlined the theoretical underpinnings of these hypotheses. Since this study is concerned with the first two of these hypotheses, their rationales are presented briefly below:
1. In cooperative relations in which economic productivity is a primary goal, equity will be the dominant principle of justice. The rational allocation of resources to achieve desired ends, given a condition of scarcity such that not all desired ends can be achieved by the available means, results in a competition among ends for the available, limited means. In a cooperative system which is trying to maximize production, the end which can produce the highest return from the use of a given means should be assigned that means. By similar reasoning, one could deduce that a person who can more effectively utilize a given scarce resource as a means of production than another person should have greater claim to its use. Assigning scarce resources of production to those most able to use them is likely to result in the largest production and is socially equitable in the sense that those who receive the largest input of resources from a cooperative system should be the ones who produce the largest amount for that system.

The psychological assumption underlying the above hypothesis is that people will be unwilling to make relatively high inputs unless they can look forward to relatively high individual outcomes. Presumably, their reluctance is based on some inherent notion of "fairness": "fairness" is necessary to account for those who experience an inequitable advantage (get more than their input warrants) as well as those who feel they get less than their contribution deserves. However, many ethical systems would not consider it "fair" for someone to be given a relatively greater or smaller reward simply because he possesses greater resources for contributing to the group's productivity. Such systems assume that it is the obligation of all members to contribute as fully as they can and if they do so they are all entitled to equal shares or to shares that are proportionate to their needs.
What, then, gives the individual who contributes more to a group’s product the seeming legitimacy for a greater share of the group’s rewards? Much research has documented this legitimacy (for summaries see Adams & Freedman, in press; Leventhal, in press; Walster, Berscheid, & Walster, 1973) and everyday observation is consistent with this research. The question has two related answers: (1) Inherent in economic rationality is a tendency for economic values to spread throughout a culture with the consequence that people come to be regarded primarily in terms of their economic utility (see Diesing, 1962). The evaluation of people in terms of their usefulness leads to the view that it is more optimal economically to fulfill the needs of those who are more rather than less useful. (2) A second basis of the legitimization of differential rewards for differential contributions inheres in the potential power available to those who have the capability of contributing much to the group’s welfare. They may be tempted to use their superior productivity to obtain power over other group members and over the group decision-making processes. Under some conditions, such attempts will be successful and will enable those who succeed to determine what principle of justice will be employed in allocating the group’s product. It seems likely that those who have been tempted to accumulate power will find some version of the equity principle congenial to their interests since it can be readily interpreted to justify greater rewards to those who have greater power.

2. In cooperative relations in which the fostering or maintenance of enjoyable social relations is the common goal, equality will be the dominant principle of distributive justice. An enjoyable social relation presupposes that one feels respected and esteemed by the other persons involved in the
relationship; and, if the primary purpose of the relationship is its intrinsic enjoyment, then mutual esteem is a necessary condition for its survival. It is suggested that allocation according to the principle of equity tends to be disruptive of social relations because it undermines the bases for mutual respect and self-respect necessary for enjoyment of such relations. It does this by signifying that the different participants in the relationship do not have the same value. A relatively low evaluation may lead to envy, self-devaluation, or conflict over thevaluations; all of which may destroy the enjoyability of the relationship for those who are favored as well as those who are not by "equitable" allocations. Moreover, respect and esteem are more valuable if they are received from those whom one respects; equal status relations is the optimum distribution of status for the mutual support of self-esteem. Thus, the principle of equality is more congenial to the fostering of enjoyable, personal relations. It supports the basis for mutual respect which underlies such relations and it does not evoke the deleterious emotions which undermine them.

There has been little research bearing directly upon these hypotheses. However, several experiments provide some support for the contention that the principle of equality is used in distributing outcomes among persons who feel "friendly" toward one another. Renton (1971) found that both his productive and unproductive female subjects preferred equal outcomes for themselves and their partners if their partners were friends. In a bargaining situation employing pairs of male classmates, Morgan and Sawyer (1967) found that strict equality was most often preferred to an equity solution. Data from a study by Leventhal and Anderson (1970) show that kindergarten classmates tend to divide rewards according to the equality notion regardless of their relative
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performances. Finally, a cross-cultural experiment by Mikula (1974) demonstrated a preference for the equality norm among American male and female students in Austria who believed they performed better than their partners. None of these studies, however, systematically varied the relative strengths of the economic and social orientations of the subjects. Thus, they do not directly bear on how goal orientation influences the form of justice used.

Lerner (1974, Exp. 3) offers the most relevant experimental evidence. In his study he directly tested the importance of being defined as part of either a unit or non-unit as a determinant of the equality or equity forms of justice. His findings indicate that children who received "team" instructions distributed rewards in a pattern resembling the justice of equality, whereas children who received "non-team" instructions followed a reward distribution pattern resembling the justice of equity. However, the results of Lerner's study are made ambiguous because the payment of the subjects in the team conditions was a function of their group output whereas in the non-team conditions the basis of payment was not clearly specified. Thus, his results may be a function of the conditions of payment rather than of "team" or "non-team" orientation.

The aim of the present investigation is to test some of the implications of Deutsch's (Note 1) hypotheses concerning the tendency for economically-oriented cooperative groups to use the principle of equity and for solidarity-oriented cooperative groups to use the principle of equality. In addition to studying the effects of different orientations, the present study inquires into the effects of mode of payment. As was pointed out earlier, the Lerner (1974, Exp. 3) study may have confounded the orientation with the mode of
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payment. One could speculate how the mode of payment might influence the division of resources between group members. For example, it seems reasonable to assume that when there is a relationship between productivity and outcome, performance becomes more salient and economic values more enhanced than when there is no such relationship. It is hypothesized, therefore, that cooperative groups whose outcomes are a function of their group output will distribute their outcomes according to the equity principle, whereas groups paid a lump sum amount will adhere to the equality norm.

Method

Overview and Design

Two types of cooperative dyads, differing in goal orientation, were created: one type was "economically" oriented while the other type was "solidarity" oriented. The dyads that were "economically" oriented were told that their group goal should be to do as much of the task as possible in the time allowed and to work as efficiently as possible. The "solidarity" oriented dyads were told that their objective should be to get to know one another as well as possible while they worked on the task. Appropriate rationales for the different orientations were given. Both types of dyads worked on identical word puzzles which gave them the opportunity to divide money. The puzzle task was designed so that the experimenter could control the subjects' perceptions of how well they performed. Every dyad was informed that one member contributed more to the group product than the other member.1

In order to determine how the relationship between productivity and outcome influences the way a group divides money, two different modes of payment were instituted. Half of the dyads were informed that their group would be paid a lump sum for the time they worked, whereas the other half were told that their group payment would be a function of their group output. Thus, the experiment
employed a 2x2 factorial design varying goal orientation and mode of payment.  

Subjects

Eighty male undergraduate students from Columbia University were recruited from a list of students who had filled out a survey questionnaire during registration. Subjects were promised an unspecified payment for participating in a half-hour group problem-solving task.

Hidden Word Puzzle Task

Four different hidden word puzzles were used. Each puzzle consisted of an 18x18 matrix of letters in which approximately 40 words were embedded. At the top of each matrix of letters was a topic word or phrase; e.g., spices, drinks, fish, and sounds of the city. Subjects were told to find and circle only those words which related to the topic. They were also told that all of the puzzles were equal in difficulty in that each one contained words that were easy to find and words that were extremely difficult to find. It was stressed that, because of this, every word was weighted differently, i.e., some words were worth more points than other words. By having each dyad member use a different color pencil, the experimenter was able to give the subjects false performance feedback. The person using the red pencil always did better (earned more points) than the person using the blue pencil.

Procedure

When subjects arrived for the experiment, they were brought into a small room and seated at either end of a rectangular-shaped table. For several minutes the dyad listened to a tape-recording which contained the goal orientation and mode of payment manipulations as well as information about the task. Economic vs. Solidarity Orientation. Subjects in the Economic Orientation conditions were told that the purpose of the study was to determine how productive
people were on tasks that called for concentration and efficiency when they worked in various sized groups. It was suggested to the dyad that they divide up the work between them. They were also told that they could talk while they worked, although it was stressed that the goal of the task was to work efficiently and to circle as many words as they could in the ten-minute period. In the Solidarity Orientation conditions it was explained that the investigators were interested in the process of friendship formation and how it is affected by the context in which people interact. It was further explained that their particular session was concerned with how two persons form friendships when they are involved in a group task. They were told to get to know one another as well as possible as they worked on the word puzzles. They were also told they could talk, since the task served as a context for them to get to know each other and to begin forming friendships.

Lump Sum vs. Function of Group Output Mode of Payment. In the Lump Sum Mode of Payment conditions, dyads were told that their group would be paid $4.00 for the time they worked. To ensure that dyad members worked on the puzzles, they were told that an overall group total of at least seven words must be found in order for the group to receive their payment. The information for the Function of Group Output Mode of Payment subjects was exactly the same as that for the Lump Sum people except that dyads were told their group payment would be a function of their group output. It was further explained that their point earnings would be converted to money, i.e., for every point they earned they would receive one cent.

After the taped information was given, the experimenter showed a sample word puzzle to the subjects. She then gave them ten minutes to work on the four task puzzles. At the end of this time period, the experimenter collected
the puzzles and said she was going to score them. After three minutes she returned. In all conditions there was a total of 400 points earned. The person who had used the red pencil earned 240 of these points, while the subject using the blue pencil earned 160 points.

In all conditions, after the puzzles were presumably scored by the experimenter, she said: "You might like to know how your group did on the puzzles. I was able to tell how each of you did by the different color pencils you used." With that the experimenter wrote the points earned on a blackboard. As she wrote she repeated the information: "Mr. Red pencil you got 240 points. Mr. Blue pencil you got 160 points." In the Function of Group Output conditions the experimenter added: "That makes a total of 400 points for your group which means that your group earned $4.00."

The experimenter then gave each dyad member a questionnaire and directed the subjects to fill them out individually and without talking. The primary purpose of this questionnaire was to find out how each person thought the earnings should be divided prior to the group discussion and decision.

When the questionnaires were completed and collected, the experimenter spoke to the dyad via an audio speaker. She reiterated in the Lump Sum conditions that their group would be paid $4.00 for the time they worked. She went on to say that since the investigation focused on productivity (or friendship formation), it did not really matter how the earnings were divided. She explained that what they had been doing was letting the group members decide between them how the earnings should be distributed. She then asked the dyad members to discuss how they wanted to distribute the group earnings and to write the decision down on one of the blank cards on their table when they agreed on a division that satisfied both of them. The ex-
perimenter said exactly the same thing in the Function of Group Output conditions except that she first reiterated that their group payment would be a function of how the group did on the task and, as they could see from the information she put on the blackboard, their group earned $4.00.

As soon as a group decision was reached, the experimenter collected it and gave each person a final questionnaire containing items pertaining to the group decision for distributing the earnings, as well as several manipulation checks and semantic differential scales. When this questionnaire was completed, the experimenter came in and thanked, paid, and thoroughly debriefed the subjects.

/ / Results

Manipulation Checks. Subjects' ratings on several different 7-point scales were used to assess whether they perceived themselves to be in the experimental condition to which they were assigned. The results indicate that the economic dyads perceived themselves to be significantly more work-oriented than the solidarity dyads, 5.75 vs. 5.12, $F (1, 36) = 4.533, p = .041$. Similarly, the solidarity-oriented dyads indicated that they tried to get to know each other more than did the economically-oriented dyads, 4.30 vs. 2.90, $F (1, 36) = 15.029, p < .001$. And, subjects who were told they scored higher than their partner perceived themselves as having contributed relatively more to the group product than did those who were told they scored lower, .75 vs. -1.32, $F (1, 72) = 47.877, p < .001$. Moreover, when asked to rate the other participant on several semantic differential scales, the high scorer was seen to be more competent, 6.15 vs. 5.70, $F (1, 72) = 5.134, p = .027$; faster, 5.32 vs. 4.30, $F (1, 72) = 20.417, p < .001$; and more active, 5.62 vs. 4.60, $F (1, 72) = 13.377, p < .001$ than the low scorer. Finally, the high scorer also viewed himself as signifi-
cantly more work-oriented than his partner, 5.80 vs. 5.15, $F(1, 72) = 4.875, p = .031$.

**Orientation.** As the data in Table 1 clearly indicate, there was a significant main effect of orientation. As expected, economically-oriented dyads awarded more money to the high scorer (preferred equity) than did the solidarity-oriented groups, $F(1, 36) = 4.361, p = .04$. Also, as can be seen in Table 2, a significantly higher proportion of economic dyads made equity choices than did solidarity dyads, $\chi^2(1) = 3.906, p < .05$. Finally, groups that were economically-oriented rated themselves as more satisfied with the money distribution than did groups that were solidarity-oriented, 6.37 vs. 5.65, $F(1, 36) = 9.741, p = .004$.

**Mode of Payment.** There was a marginally significant main effect of mode of payment, $F(1, 36) = 3.491, p = .07$. Looking at Table 1, we see that the function of group output payment dyads tended to distribute more money to the high scorer (use equity) while the lump sum payment groups tended to more evenly distribute the earnings (use equality). Two other interesting results emerged concerning the mode of payment. After the allocation decisions were made, the lump sum groups reported the money distribution to be more fair, 5.68 vs. 5.03, $F(1, 36) = 8.319, p = .007$, and rated themselves as higher on friendliness, 6.37 vs. 6.12, $F(1, 36) = 4.054, p = .052$ than the function of group output dyads.
High and Low Scoring Subjects. The data were analyzed not only for dyads but also for "high" and "low" scoring subjects as well. Table 3 shows the mean amount of money high and low scorers preferred to award to the high scorer prior to their group discussion and decision. As can be seen, the high scorers preferred to award significantly less money than did the low scorers, $F(1, 72) = 52.751, p < .001$. In fact, as indicated in Table 4, all of the high scorers preferred the equality rule while this was not true for the low scorers, $\chi^2(1) = 32.474, p < .001$.

Interestingly, although all of the high scorers proposed to divide the money equally in their pre-discussion questionnaires, only 57.5% claimed that equality was the most just distribution principle. After the group decision, when asked to rate their partner on several 7-point semantic differential scales, the high scorers rated the low scorers as less friendly, 6.1 vs. 6.4, $F(1, 72) = 3.904, p = .053$; less democratic, 5.5 vs. 6.2, $F(1, 72) = 6.183, p = .016$; and less interesting, 4.68 vs. 5.25, $F(1, 72) = 5.454, p = .023$. It seems that the high scorers had a relatively negative opinion of their partners although they said they wanted to give them half the earnings.

Discussion

To summarize, the purpose of this study was to explore some of the implications of Deutsch's (Note 1) hypotheses about the conditions under which various principles of distributive justice are employed. The results indicated that orientation influences the rules used by cooperative dyads to
distribute outcomes. Specifically, groups that were economically-oriented were more likely to use an equity norm than solidarity-oriented dyads; the latter almost unanimously employed an equality norm. Furthermore, there was a tendency for groups that were paid as a function of their group output to favor equity while lump sum payment groups tended to favor equality.

The present study dovetails nicely not only with Lerner's (1974, Exp. 3) study but with two others as well. In a simulation study, Leventhal, Michaels, and Sanford (1972) found that subjects who were told to avoid conflict distributed money more equally than did subjects who were not given such an orientation. Using correlational techniques, Mikula (1974) reported that persons who were task-oriented tended to allocate rewards according to the equity norm whereas interaction-oriented subjects tended to divide rewards equally. The advantage of the present investigation is that it experimentally manipulated orientation (independently of mode of payment) thus avoiding many of the interpretative problems of the previous studies.

Since economically-oriented groups were concerned with maximizing production and since the function of group output payment groups were achievement-oriented (because their payments were a function of the group's achievement), it could be expected that an equity solution would have been most preferred by the Economic/Function of Group Output dyads. Likewise, an equality solution would have been most preferred by the Solidarity/Lump Sum subjects since solidarity-oriented groups were concerned with fostering enjoyable social relations and achievement cues were minimal in lump sum payment groups. In fact, post hoc mean comparisons (see Table 1) using the Bonferroni statistic (Miller, 1966) support this analysis, $t(36) = 2.125, p < .05$. It seems reasonable to conclude, therefore, that the function of group output
mode of payment reinforced the economic orientation while the lump sum mode of payment reinforced the solidarity orientation. Some support for this interpretation is found in the marginally significant interaction ($p < .08$) between mode of payment and orientation: among solidarity-oriented groups, lump sum payment subjects were more satisfied with the distribution of money than the function of group output payment subjects; among the economic dyads, the reverse result was obtained.

It is likely that performance was not as salient in the lump sum payment as in the function of group output payment situation. What, then, was salient in the lump sum payment conditions? We suggest that it was the overall personal (face-to-face), cooperative context. Because of the increased saliency of this cooperative context in the lump sum treatment, the group members might be expected to develop greater positive cathexis for one another (see Deutsch, 1973). Hence, they were predisposed to increase the outcomes of the other and did so by choosing an equal distribution. That the lump sum groups rated the distribution more fair and themselves higher on friendliness than did the function of group output dyads lends indirect support to this interpretation.

An unexpected, and intriguing, result of this study was that every high scorer expressed an initial preference to split the money evenly. A close examination of the literature reveals that similar findings have been reported (Mikula, 1974; Morgan & Sawyer, 1967). This phenomenon is clearly not general. Outside the laboratory, the more productive members of groups do not usually favor the equality rule. In view of this, the obvious question becomes: Why did all of the high scorers favor equality?

It is reasonable to hypothesize that a crucial factor in the present study was that all of the dyads were in a face-to-face, cooperative relation.
The personal, cooperative context could be expected to induce a high degree of solidarity sentiment even in the economically-oriented dyads. Future studies reducing the personal, face-to-face, cooperative context of the experimental situation could easily test this notion.

However, even if it is found that the face-to-face, cooperative context, per se, is responsible for the high scorers requesting equality, there would still be much to learn about the underlying mechanisms. For example, the current study yielded indirect evidence which suggests that although the high scorers in the economically-oriented dyads initially chose equality, they actually wanted equity and expected the low scorers to convince them of this. First of all, the data indicate that the low scorers were primarily responsible for the equity solutions. Secondly, the economically-oriented dyads that actually chose equity reported being significantly more satisfied than the dyads choosing equality. Finally, although all of the high scorers offered equality, only about one half reported that the equality rule was the most just.

It is entirely reasonable to argue from these data that the high scorers in the economically-oriented dyads experienced a conflict between the equality norm induced by the solidarity relations of the personalized, face-to-face interaction and the equity norm induced by the economic orientation. To avoid appearing "selfish" by requesting a larger share of the group's payment, the high scorers presented themselves "modestly" and asked for an equal sharing. By leaving the initiative for proposing unequal shares up to the low scorers, the high scorers also would presumably not be "rubbing salt" into the wounds of the low scorers and thus making the interaction unpleasant. On the other hand, if the low scorers did not propose a higher reward for the high scorers, the high scorers were apt to react relatively negative to them. Virtue, it seems, was not its own reward to the high scorers in the economically-oriented dyads.
References


Deutsch, M. "Equity," "equality," and "need": What determines which value will be used as the basis of distributive justice? *Journal of Social Issues, in press.*


Footnotes

1 Obviously, no dyad members were equal in productivity since such a condition would not discriminate between the equity and equality norms.

2 Complete transcripts of the orientation and mode of payment manipulations are available from the authors upon request.

3 To reinforce the overall cooperative context, a division of labor was introduced. This technique is consistent with "Deutsch's crude law of social relations" which states that "the characteristic processes and effects elicited by a given type of social relationship (cooperative or competitive) tend also to elicit that type of social relationship" (Deutsch, 1973).

4 Although the experimenter did not total up the points in the Lump Sum conditions, it is interesting to note that not one subject mentioned the "coincidence" that the total points equaled $100 and the group was to receive $4.00 for the time it worked.
Table 1

Mean Amount of Money Awarded to the High Scorer

as a Function of the Experimental Variables

<table>
<thead>
<tr>
<th>Mode of Payment</th>
<th>Economic</th>
<th>Solidarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lump Sum</td>
<td>2.06</td>
<td>2.00</td>
</tr>
<tr>
<td>Function of Group Output</td>
<td>2.18</td>
<td>2.05</td>
</tr>
</tbody>
</table>

Note. Amount shown in dollars.

Total amount to be divided was always $4.00.
Table 2

Frequency of Distribution Rules Used by the Dyads as a Function of Orientation

<table>
<thead>
<tr>
<th>Rules</th>
<th>Economic</th>
<th>Solidarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Equality</td>
<td>13</td>
<td>19</td>
</tr>
</tbody>
</table>
### Table 3

Mean Amount of Money Individuals Preferred to Award to the High Scorer as a Function of Orientation, Mode of Payment, and Performance Feedback

<table>
<thead>
<tr>
<th>Orientation</th>
<th>Performance Feedback</th>
<th>Lump Sum</th>
<th>Function of Group Output</th>
<th>Lump Sum</th>
<th>Function of Group Output</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Economic</td>
<td></td>
<td></td>
<td>Solidarity</td>
<td></td>
</tr>
<tr>
<td>Mode of Payment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Scorer</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>Low Scorer</td>
<td>2.32</td>
<td>2.32</td>
<td>2.16</td>
<td>2.25</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** Amount shown in dollars.

Total amount to be divided was always $4.00.
Table 4

Frequency of Distribution Rules Offered by Individuals as a Function of Performance Feedback

<table>
<thead>
<tr>
<th>Rules</th>
<th>High Scorer</th>
<th>Low Scorer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Equality</td>
<td>40</td>
<td>15</td>
</tr>
</tbody>
</table>