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THE INFLUENCE OF SELF-INTEREST  
ON REWARD DISTRIBUTION DECISIONS

By

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ABSTRACT

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The present research investigated the role that self-interest plays in determining people's differential use of norms and differential attention to potential inputs when they make reward distribution decisions.

The two major theoretical positions in the area of reward distribution, the equality norm and the equity norm, make different predictions concerning the manner in which individuals distribute rewards. The equality norm states that people should ignore individuals' differences in task inputs and divide the rewards equally. In contrast, the equity norm prescribes that an allocator should reward individuals in proportion to their perceived task inputs. The equity prescription, however, is moderated by the first corollary of equity theory: individuals who perceive they can maximize their rewards by behaving equitably, do so; when they perceive they can maximize their rewards by behaving inequitably, they do so. Recent investigations suggests that allocators may selectively weigh the norms and inputs in their reward distribution that justify self-maximizing allocations. Thus, I hypothesized that subjects', especially males', ratings will change from one task to the other so that their evaluations of the importance of norms and inputs

promote self-interest.

In order to determine if allocators' reward distribution decisions were affected by self-interest, a two part study was conducted. Male (N = 137) and female (N = 165) subjects worked with other participants on two different functionally inter-dependent tasks. A subject worked with a partner on the first task, which was either a jig-saw puzzle construction or essay writing task, allocated the money, and rated the importance of selected norms and inputs. Later that same subject worked with a different partner on the other task, allocated the money, and rated the importance of the same norms and inputs.

To Joan and Matthew

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## CHAPTER I

### Introduction

The just distribution of rewards among individuals in social systems has been the subject of a considerable amount of theorizing and research (cf. Leventhal, 1976; Adams and Freedman, 1976; Berkowitz and Walster, 1976; Lerner, 1975). Despite this theoretical and empirical attention, however, researchers have yet to explore fully certain key issues in the area of distributive justice. Thus, the purpose of this experiment was to refine the theoretical perspectives concerning the role that self-interest plays in determining people's differential use of norms and differential attention to potential inputs when they make reward distribution decisions.

Adams (1965) proposes that the distribution of valued outcomes is based upon dimensions of evaluation (i.e., inputs), including quantity of output, quality of output, effort, time spent, seniority, skill, level of education, level of need, age, and sex. The relationships between the dimensions of evaluation and the allocated outcomes specify distribution rules. Although Deutsch (1975) notes that there are a variety of possible distribution rules, Piaget argued that distributive justice can be reduced primarily to the ideas of equality and equity. Leventhal, Popp, and

Sawyer (1973), Sampson (1975) and others appear to adopt Piaget's position that an individual who distributes rewards to another person (i.e., an allocator) follows one of two norms of fairness--equality or equity. The equality norm states that an allocator should ignore differences in the member's task inputs and divide the rewards equally. On the other hand, the equity norm prescribes that an allocator should reward individuals in proportion to their perceived task inputs. This prescription, however, is moderated by the first proposition of equity theory (cf. Walster, Berscheid, & Walster, 1976): individuals try to maximize their rewards and minimize their costs in a bargaining situation. Moreover, the first corollary of equity theory states that individuals who perceive they can maximize their rewards by behaving equitably, do so; when they perceive they can maximize their rewards by behaving inequitably, they do so (Walster, Berscheid, and Walster, 1976).

With the exception of Fullerton, Messe', and Vallacher (note 1) and Fullerton (1978), most research on reward distribution has examined reward distribution behavior under minimal social conditions (cf. Adams & Freedman, 1976). Typically, in most past studies individuals worked as a team on a task, such as multiplication of a series of numbers, answering multiple choice knowledge questions, proof-reading, or essay writing, that required little, if any, sharing of their resources or coordination of activities. Thus, the typical research paradigm fails to attend to the

manner in which reward distribution operates in social systems with functionally interdependent members.

Social psychologists investigating reward distribution have devoted most of their attention to the effects of the norm of equity (cf. Adams & Freedman, 1976) and to a lesser extent, the norm of equality (cf. Deutsch, 1975; Leventhal, 1976; Sampson, 1975). Recently, however, some theorists (Lerner, 1974 a, b; Leventhal, 1976) have suggested that an allocator may follow a number of alternative allocation rules. For example, an allocator may follow equity or equality as discussed above or she or he may follow the rule of altruism and distribute rewards and resources to the recipients with the greatest need; or the allocator might follow the rule of reciprocity and distribute rewards to reciprocate recipients' past favors and services. Thus, if one of the participants had the greatest need, had the best performance, and had allocated a large reward to the allocator in the past, the allocator could follow a combination of norms and allocate a higher reward to that person. However, if the different allocation rules favor different reward distributions the allocator could utilize any one of the rules, or some weighted combination of norms, when making the reward distribution decision. Thus, if one participant had the best performance but another had more need, an allocator may weight the norms equally and allocate a similar reward to both participants. This suggests that in situations of conflicting rules of justice, although a social

system typically favors some allocation rule, the allocator can decide which rule or weighted combination of rules he or she will follow. It could be that the allocator's decision to use a norm or combination of norms is influenced by self-interest because no consensus exists concerning what norm is most "appropriate".

Recent investigations suggest that subjects' self-interest affected the extent to which they divided the reward in accordance with member's performance (Leventhal, Weiss, & Long, 1969; Leventhal & Anderson, 1970) or divided the reward equally (Lane & Coon, 1972). For example, the results of Leventhal, Weiss, and Long (1969) showed that over rewarded subjects were less likely than under rewarded subjects to restore an equitable balance between inputs and outcomes. Similarly, subjects with inferior inputs took half of the reward (not less as equity dictates) and underestimated their partner's inputs (Leventhal and Anderson, 1970). Leventhal and Anderson (1970) suggest that these allocators took half of the reward because of self-interest and distorted their partner's performance to protect their self-esteem. The results of a study by Reis and Gruzen (1976) provide further indirect support for the hypothesized influence of self-interest on reward allocation decisions. Male subjects gave themselves more reward than either equity or equality would prescribe, when their reward distribution decisions were completely private. The results of research by Lane and Coon (1972) and Leventhal and Anderson suggest that male children who are superior performers violate the

norm of equality to maximize their rewards. Thus allocators may selectively weigh the norms in their reward allocation decisions according to the extent to which they help to maximize their outcomes. The extent to which an allocator changes these weights in different input situations to maximize her or his rewards would be a direct indication of the degree to which self-interest affected these reward distribution decisions.

The typical manner by which the norm used is determined in equity and equality research, however, masks the allocator's use of more than one norm. Typically this research examines the amount of rewards allocated in one situation only and infers from that amount the norm that was used. If the allocator takes more or less (depending on the input level) than 50% of the reward she or he is presumed to be using the norm of equity. On the other hand, if the allocator allocates 50% of the reward, regardless of the potentially "relevant input", he or she is presumed to be using the norm of equality. However, if the allocator is using another input or weighted sum of inputs rather than just the input that the experimenter links to the reward, the comparison of amounts of reward to the "experimenter's relevant input" may not present the total reward distribution decision.

The difficulty of determining whether an allocator is following the norm of equity or the norm of equality (or some combination of both) is demonstrated by a comparison

of the results and interpretations of studies by Lane and Coon (1972) and Leventhal and Anderson (1970). Lane and Coon asserted that their findings indicated their preschool children subjects tended to follow the norm of equality. They found that boys and girls with inferior performance divided the rewards equally because they were following the norm of equality, while boys with superior performance violated the norm of equality to further their self-interest (i.e., in order to maximize their own share of the reward). Leventhal and Anderson obtained similar results for a comparable group of children. However, they concluded that some of their results--i.e., boys with superior performance self-allocated more than half of the reward--suggest the boys were attempting to distribute rewards equitably, while other results--i.e., boys and girls with inferior performance divided rewards equally--suggested that subjects violated the norm of equity to further their self-interest because they did not want to accept less than half of the reward. Generally, and specifically in these two particular studies, the norm is inferred from the proportion of outcomes the allocator retains. Thus, the interpretations of norms used from the comparison of the experimenter's relevant input and the amount of reward allocated may not be accurate.

Theoretically, the equity and equality norms, under some circumstances, would have opposing effects on the allocator's decisions, but in other circumstances would dictate

the same allocation response and thus have mutually supportive effects. In some studies (Lane and Messe', 1971, 1972) the task inputs were equal and, therefore, equity and equality dictated the same response--the equal division of the reward. However, in these studies the norm used was determined by the amount of money allocated, and therefore, whether subjects used both or either norm could not be determined (Leventhal, Popp, & Sawyer, 1973). Thus, with the exception of Fullerton (1978) and studies offering post hoc explanations of results that do not fit completely either equity or equality predictions the utilization of more than one norm has not been directly examined.

When an allocator does not divide the reward according to either exact equity or equality predictions, the researcher typically explains that both norms are providing a compromise response that to some extent satisfies both norms. In Leventhal, Michaels, and Sanford's (1972) first experiment the result of their manipulation of conflict prevention suggested that allocators who are instructed to prevent conflict will give more reward to the worst performer, and less to the best, while allocators who are told to disregard potential conflict allocated in accordance with equity predictions (and their previous allocation). Later, Leventhal (1976) speculated that this reward difference probably was a compromise between the opposing demands of equity and equality. The results of Fullerton (1978) directly

support the allocator's theorized use of more than one norm when distributing rewards. As predicted, subjects rated more than one norm as important to their reward distribution decision, and these ratings, in combination (via multiple regression), accurately predicted behavior.

The results of the ratings of norms suggested that people differentially weigh the importance of norms on their reward allocation decisions and different weightings corresponded with different reward allocations. Thus, it is possible for allocators to weigh as important norms that arouse incompatible response tendencies in them; under such circumstances, allocators must reconcile these competing forces by a compromise response which partially satisfies each response. This interpretation is consistent with the results of many equity and equality studies in which subjects allocated rewards in a manner that did not exactly fit either equity or equality predictions (e.g., Lane & Coon, 1972; Leventhal & Anderson, 1970; Leventhal, Michaels, & Sanford, 1972).

In the present research, the hypothesized use of more than one norm was examined in two different reward allocation situations. In this study a procedure was used that replicated and extended my past work (i.e., Fullerton, 1978). Subjects were asked to rate the importance of four norms (equity, equality, altruism, and consideration) on their decision to distribute rewards in two different reward allocation situations. These four norms are of theoretical



relevance and were evaluated both by examining both the subjects' ratings of their importance and actual monetary distributions.

Equity. An equitable response is one in which a person divides the rewards according to differences between participants in levels of their (perceiver-defined) relevant input(s).

Equality. An equality response minimizes the difference in reward regardless of differences of relevant inputs.

Altruism. An altruistic response is one in which a person maximizes the amount of reward that the other person obtains.

Consideration. A considerate response is one which indicates compliance with co-workers' expectation.

Although the majority of research concerning reward distribution concentrates on equity (see, e.g., the review by Adams & Freedman, 1976), one key element, the perception of inputs, to date has not been adequately examined. A relationship is equitable when a person (either one of the participants or an outside observer) perceives that all the participants are receiving equal relative outcomes from the relationship (Walster, Berscheid, & Walster, 1973). Adams (1965) suggests that a difficulty in the evaluation of relationships as equitable or not is that the perception of one person, A, of his or her rewards, costs, and investments are not necessarily identical with another person's perception of A's situation (and vice versa). Inputs are

defined as "what a person perceives is his contribution to the exchange, for which he expects a just return" (Walster & Walster, 1975, p. 21) -- "Justice" requires that everyone receives outcomes proportional to his or her relevant inputs.

Equity theory is imprecise concerning the specification of what are potentially relevant inputs (Lerner, 1975). Is the relevant input (a) duration of work, (b) effort expended, (c) skill, (d) quantity of work, (e) quality of inputs, and/or (f) the number of decisions one was required to make? Adams (1963) suggests there are two conceptually distinct characteristics of inputs, recognition and relevance. Either party to the exchange or both may recognize the existence of the attribute (i.e., sex, age, effort, time spent, work units completed) in the possessor; if either does, the attribute has the potentiality of being an input. Whether an attribute having the potential of being an input is an input is dependent on the person's (either party or both) perception of its relevance to the exchange. In addition, perception of a relationship as equitable depends on the person's assessment of the relevance (recognition and relevance) and the value of the participant's inputs (and outcomes). Therefore, even if all members agree on what the relevant investments are, they may still weigh their own and other's inputs (and outcomes) differently.

Adams (1965) states that the allocator who is evaluating recipients' inputs often gives weights to different aspects of their task behavior. In addition, Leventhal and

Michaels (1969) propose that the allocator attributes to a member a weighted sum of behaviors (for example, effort, quantity of performance, and duration of performance). Typically, relevant inputs have been assumed to be the set of inputs that the experimenter attempted to link to reward. This set has included performance (Leventhal & Anderson, 1970; Reis & Gruzen, 1976; Lerner, 1974; Leventhal & Lane, 1970; Leventhal, 1976), time (Lane & Messe', 1971, 1972; Lane, Messe' & Phillips, 1971), difficulty of the task (Adams, 1961), quality of work (Leventhal & Michaels, 1969), or quantity and quality of work (Lane & Messe', 1971). Both Walster et al. (1973) and Adams and Freedman (1976) state that different persons --i.e., participants, "objective" outside observers (such as experimenters)--are likely to calculate inputs and outputs differently, and, therefore, the perception of the extent of the equitableness of a relationship can differ depending on who the perceiver is and his or her role.

Although the differential weighing of inputs is an element of Adams' (1965) theory, this proposition has only recently been directly examined empirically. However, there is some earlier work that bears indirectly on this issue. For example, Zaleznik, Christensen, and Roethlisberger (1958) tested some equity predictions concerning reward and investments in an industrial setting. They compared an individual's pay (reward) to his or her rank in five social

status factors--investments--(seniority, sex, age, education, and ethnicity). These authors proposed that respondents would sum the five equally weighted inputs, but their data analyses did not substantiate this prediction. The lack of support for their hypothesis could indicate that inputs as diverse as seniority, sex, age, education, and ethnicity are not weighted equally or that a nonlinear, non-compensating model or combination of models is needed (Einhorn, 1971).

Leventhal, Popp and Sawyer (1973) found that there was a disparity between relative inputs (pegs placed) and the manner in which subjects' distributed rewards, suggesting that they did not conform to the norm of equity precisely. They speculated that this deviation could be due to the norm of equality also influencing the subjects' allocation responses. They, also, speculated that the allocators may have taken into account other facets of a recipients' task behavior when evaluating work inputs. This post hoc explanation is congruent with the results of Leventhal and Lane (1970), which show that females with superior performance were less likely than females with inferior performance to indicate that they had taken into account performance--the "experimenter's relevant input" --when dividing rewards.

The results of Fullerton (1978) directly support the proposition that allocators examine different inputs and their combination when allocating rewards. As predicted, subjects who divided the rewards so that the superior

performer received more rated success at the task--i.e., puzzle pieces placed, the input linked to the reward and on which team members varied--as the most important input on their reward distribution decision; on the other hand, subjects who divided the rewards equally rated time spent --an input on which team members did not vary--as the most important input. Thus, the results suggest that some subjects perceived not only pieces placed (the experimenter's relevant input) but also time spent, and need as relevant inputs. In addition, the results suggest that allocators differentially weighed the importance of inputs on reward distribution decisions, as theorized by Adams (1965) and Walster and Walster (1975). The differential weighting of inputs also supports Leventhal's (1976) theorizing concerning the confluence of norms.

Thus, one purpose of the present study was to explore subjects' ratings of the importance of various norms and potential inputs across different task contexts.

The equity norm prescribes that an allocator should reward individuals in proportion with their perceived task inputs. The research has generally supported the equity model (see, e.g., the review by Adams & Freedman, 1976). However, numerous studies have found that males and females apply reward distribution rules differently as a function of relative performance (Lane & Messer, 1971; Messer & Lichtman, note 2; Leventhal & Lane, 1970; Leventhal, 1975).

Studies of reward allocation have consistently found that female allocators pay themselves less than do males and less than equity theory predicts (Lane & Messe', 1971; Leventhal & Lane, 1970; Mikula, 1974). Results also suggest that females make fewer self-maximizing allocation (Lane & Messe', 1971). Katz and Messe' (note 3) state that females tend not to behave in ways that are to their economic advantage. Thus, the present study investigated the allocation of females and males in two different situations. Time and performance inputs were independently manipulated (to appear to be superior, equal, or inferior to that of a coworker) to determine if male and female allocators differentially weigh norms to maximize their own rewards when paying themselves and that coworker.

Thus, another purpose of the study was to explore the patterns of ratings and changes in ratings across tasks to determine if male and females differential weigh the importance of norms and potential inputs. The major purpose of the present study, however, was to explore the previously hypothesized role of self-interest in reward allocation decisions.

### Hypotheses

The basic purpose of this research was to explore the influence of self-interest on allocators' weightings of norms. Previous research suggests that allocators will weigh the importance of several norms in their reward distribution decisions. I predicted that subjects' ratings of the importance of various norms and potential inputs will

differ across different task contexts.

Previous research indicates that males and females differentially weigh norms. In addition, results of Lane and Messe' (1971) suggest that females make fewer self-maximizing allocations. Specifically, I hypothesized that the patterns of ratings and changes in ratings across tasks will differ for males and females.

It was predicted that allocators will selectively weigh the importance of norms and inputs to maximize their self-interest. By manipulating the input levels of performance and time in two different nonrelated reward distribution situations, changes in norm and potential input weighings could be assessed. Specifically, I hypothesized that subjects', especially males', ratings will change such that they will evaluate norm and inputs in ways that promote their self-interest.

## CHAPTER II

### Method

#### Overview of the Study

Male and female subjects worked with other participants on two different functionally interdependent tasks. A subject worked with a partner on the first task, which was either a jigsaw puzzle construction or essay writing (brainstorming) task, allocated the money, and rated the importance of selected norms and inputs. Later that same subject worked with a different partner on the other task, allocated the money, and rated the importance of the same norms and inputs. The experimenter used different tasks, different experimenters and confederates, and some different standardized scales as part of the post-experimental questionnaire in an attempt to have subjects perceive the two tasks as separate studies that had some common features.

#### Subjects

Subjects were 137 male and 165 female undergraduates at Michigan State University. Subjects participated in the study for pay.

#### Design

A 2x2x2x2x2 factorial design was used in this study. By pre-arrangement, the confederate in the portion of the



study using a writing task (brainstroming) either worked twice as long (subject inferior time inputs) or half as long (subject superior time inputs) as the subjects did. Also by prearrangement, the confederate in the portion using a puzzle task (puzzle) either placed twice as many pieces in the puzzle (subject inferior performance inputs) or half as many (subject superior performance inputs) as the subject did. The experiment also varied (for reasons of control) order of task presentation (either puzzle then brainstorming or brainstorming then puzzle) and the order of total rewards available to a work dyad for performing a given task (either \$4.50 then \$4.00 or \$4.00 then \$4.50). Thus, the 2x2x2x2 factorial represents the combination of puzzle performance inputs, brainstorming time inputs, order of task presentation, order of money presentation, and sex of the subject. The crossing of performance inputs and time inputs provide the test of the self-interest hypotheses. The major dependent measures were the amount of money allocated and the ratings of importance of norms and inputs.

#### Procedures Utilized to Heighten Realism and Control

I wanted the subjects to perceive that they had participated in two unrelated experiments and had real co-workers for both tasks. In an attempt to accomplish this, the two "studies" (i.e., the puzzle task and the brainstorming task) (a) were conducted in different experimental settings located approximately one-half a mile from each

other, (b) employed different groups of experimenters and confederates, (c) presented allocators with somewhat different amounts of team reward, and (d) had subjects complete somewhat different post experimental questionnaires. The setting for one part of the study was a large briefing room with 10 partial cubicles which provided only a visual barrier. The other setting was a small briefing room (less than one-third of the size of the room described above) with four soundproof cubicles. A different group of experimenters and confederates conducted each portion of the study. One task was a writing (brainstorming) task, while the other was a spatial ability (puzzle) task. After one part the team received \$4.00, after the other \$4.50. (As noted above, the experiment controlled for the order of money presentation.) Each of the post-session questionnaires had as the first measure the same nine dependent variables. This measure was presented to subjects as a standard questionnaire that was commonly used nationally in most "industrial simulation research". The booklets, however, also contained several different instruments. One post-experimental booklet (puzzle) contained work value scales (i.e., Gullahorn's Work and Family Orientation Questionnaire), the other contained primarily locus of control scales (i.e., Rotter's Internal-External Locus of Control Scale). The post experimental questionnaires are presented in Appendices A and B, respectively. In addition, the experimenter

conducted sessions in which all the participants both allocators and co-workers were real subjects. In these sessions, the allocators were randomly chosen and their co-workers received the amount that they actually were allocated. Only the allocators' responses, however, were analyzed. These sessions were instituted as an attempt to counteract possible rumors, (a) that there was no co-worker and (b) parts of the studies were "fixed".

#### Overview of the Brainstorming Portion of the Study

Male and female subjects worked on a functionally interdependent writing task with another participant (actually a confederate) whose sex was not specified. In this task, participants were led to believe that their time inputs differed, but their (quality of) performance inputs were equal. One participant wrote statements for or against 16 topics for 50 minutes. The other participant arrived 25 minutes after the first and wrote statements agreeing or disagreeing with the first participant's statements on the first eight topics. At the end of the work session, subjects allocated the money, rated the importance of selected norms and inputs and reported their guesses of the sex of their partner.

#### Setting, Task and Materials

A large experimental room with 10 cubicles and a common briefing area was used. The cubicles provided a visual barrier but only a partial sound barrier.

The experimental booklet was composed of two packets each containing eight campus related topics (e.g., should alcoholic beverages be allowed in dorms?, should professors instead of graduate students teach classes?, should triple rooming in dorms be abolished?). The list of topics is presented in Appendix A.

A three item post-experimental questionnaire was used. One item assessed the importance of effort, time spent, partner's expectation of how rewards should be allocated, and performance on reward allocation. The final item measured the subject's perception of the sex of his or her partner. (Appendix B presents the Time post-experimental questionnaire).

### Procedure

A male and a female experimenter informed the participants that they would be assisting in the development of a questionnaire by working on a writing task. The experimenters explained that one member of each team would work on the task 50 minutes, the other 25 minutes. In the subject inferior (SI) condition the confederate partners were the first group of participants and worked 50 minutes; the subjects arrived 25 minutes later and worked 25 minutes. In the subject superior (SS) condition the subjects were the first group of participants; the confederate partners arrived 25 minutes later. Sometimes subjects were the participants in both the 50 and 25 minute work groups, in which case, only the subjects in the pre-arranged time

condition (SS/SI) allocated the money.

Initially, the first group of participants was seated in the main portion of the room. The experimenters explained that their task was to respond with as many pro and/or con statements to the 16 campus related topics as they could. This group was told to spend approximately three minutes on each of the topics and to let their ideas flow freely without stopping to evaluate them. The experimenters told the first group of participants that their partners would be arriving in 25 minutes and would be agreeing and/or disagreeing with their statements concerning the first eight topics. The experimenters stated that since the tasks were of equal difficulty, each team would be paid according to the total amount of time the team worked, and that after the work period was over, one member of each team would be randomly selected to allocate the earnings of the team. After receiving the preliminary instructions the participants were led to the cubicles and told to commence work.

After 25 minutes the second group of participants arrived. This group was told that their partners already had been working on a writing task for 25 minutes. The experimenters explained that their task was to agree and/or disagree with their partners' statements concerning the first eight topics and to state why. They were also told that they should spend approximately three minutes per topic, that since both tasks were equally important, their team pay would be determined by the total amount of time

their team worked, and one member of each team would allocate the earnings of the team.

After the second group of participants were led to cubicles, the experimenters went to the cubicles of the first group, picked up their statements on the first eight topics, and took them to their partners. For the next 25 minutes the first group worked on the second packet of topics and their partners agreed and/or disagreed to the statements concerning the first eight topics.

After 25 minutes all the statements were collected and one of the subjects was asked to shuffle a stack of "I divide" and "partner divides" cards. Another participant (confederate) was asked to choose a card and the confederate said "partner (subject) divides". Each subject was given an envelope containing money, asked to keep the amount he or she deserved, and asked to put the amount of money the partner deserved in an envelope marked "partner". During the money division the confederates supposedly were completing a post-experimental questionnaire. After the money allocation, the confederates received the partner envelope and the subjects completed a post-experimental questionnaire. Then, after individual debriefings the session was terminated.

#### Overview of the Puzzle Portion of the Study

Male and female subjects attempted to finish a functionally interdependent jig-saw puzzle task with another participant (actually a confederate) whose sex was not

specified. The subject and confederate in each dyad alternated working on the task for six four minute periods. Thus, in this task participants' performances differed but their time inputs were equal. At the end of the work session, subjects recorded their team's inputs, allocated the money, rated the importance of selected norms and inputs, and reported their perception of the sex of their partner.

#### Task and materials

In a 2-person team, the subject and confederate individually worked to place 80 (40 per team member) preselected pieces of a 300-piece jig-saw puzzle; 220 pieces were already correctly positioned in the puzzle.

The three item post-experimental questionnaire previously described was used. (Appendix C presents the Pieces post-experimental questionnaire).

#### Procedure

At each experimental session a male and female experimenter tested four, six, or eight participants. The subjects were told that the study simulates conditions found in industry. Participants were informed that the purpose of the study was to test the difference between face-to-face and non-face-to-face working conditions. However, all participants then were told that they had been assigned to the non-face-to-face condition. The experimenters further explained that while each subject

would know that he or she was paired with one of other participants, no one would ever know which one. The subjects were briefed in groups composed of equal numbers of males and females to emphasize that each was paired with a real person, but the identity and sex of each partner would remain unknown. The experimenters explained that the members of a pair would work on the same puzzle, the dyad would receive a monetary reward for its work, and also that after the work period was over one of the members of each dyad would be selected by chance to allocate the earnings of that pair.

After receiving the preliminary instructions the subjects were led to cubicles. At this point, the experimenters gave the subjects the puzzles along with the 40 pieces that had been allocated to them as their task. After four minutes the experimenters took the puzzles to the confederates. Each confederate recorded the subject's performance and, depending on the performance condition, placed a predetermined number of pieces in the puzzle. After exactly four minutes the experimenters returned the puzzles to the subjects. On turns two and three the confederate continued to place one-half or twice as many pieces as the subjects, as dictated by the condition.

The puzzles were collected after 24 minutes and the subjects were told that they have been randomly selected to be a team recorder. The experimenters informed them



that as the team recorders they would complete the confidential team reports, which consisted of the following information:

- a. time each member worked
- b. pieces completed by each member
- c. the pair's earnings
- d. each member of the pair's individual earnings

The experimenters gave the subject the information that they need for the first three items. Then, the subjects were handed three envelopes--one marked "my pay", a second marked "other's pay", a third marked "confidential team report"--and an amount of money in bills and coins. Subjects were requested to divide the money and record on the team report how they divided it. After they had chosen a division, a three-item questionnaire was administered. Then, after a debriefing the session was terminated.

## CHAPTER III

### Results

#### Analyses I

Unweighted means analysis of variance and planned comparisons were performed on two sets of repeated measures. The dependent variables of these analyses were (1) subjects' ratings of the importance of the performance and time inputs and (2) their ratings of the importance of the equity and equality norms on their reward allocation decisions (repeated measures). As noted above, the tests of the hypotheses were repeated measures of a subject's ratings in two different situations. Therefore, only the data of subjects who completed the measures on both questionnaires (85 males and 83 females) were analyzed. The independent variables were sex of the subject, performance input on the puzzle task, and the time input on the brainstorming task. Thus, a 2(sex of subject) x 2(performance input) x 2(time input) with two repeated measures -- the importance of equity and quality for reward allocation decisions made for the two tasks--analysis of variance was performed. A parallel analysis explored subjects' ratings of performance and time as inputs in their reward allocations for the two tasks. A precondition of performing these 2x2x2x2x2

(including the double repeated measures) ANOVAS was the absence of consistent order of money and order of tasks effects. The results of the second analyses indicated that this requirement was satisfied.

### Analyses II

Separate 2x2x2x2x2 unweighted means analyses of variance was performed on the nine dependent variables. The independent variables were sex of subject, performance input on the puzzle task, time input on the brainstorming task, order of task presentation, order of money presentation, and task from which data were derived (a puzzle or brainstorming repeated measure). The nine measures were the percentage of the total team pay that the participants' self-allocated and participants' ratings of the importance of different norms and inputs on their reward distribution decisions.

### Tests of the hypotheses

Self-interest. The underlying premise of this research was that the participants' self-interest would influence their ratings of the importance of selected norms and selected inputs on their reward allocation decisions.

Specifically, subjects were asked to rate the importance of four rules: contribution, same pay to each person, helping the person with the larger need, and partner's expectation of how the pay will be divided, they might have used in deciding how to divide the reward between themselves and co-workers. All norms and inputs were

rated on a seven point scale which ranged from 0 (not at all important) to 6 (very important). The major hypothesis was that some of the allocators would rate the norms in order to maximize their rewards. Specifically, it was predicted that workers would rate the equity norm as more important on the task they had superior inputs, but would rate the equality norm more important when they had inferior inputs. This rating change would enable the participants to self-allocate a larger share of the reward across the different input levels than if they used only one norm.

Thus, from the hypothesis, a four-way interaction, performance input x time input x task x norm ratings, was expected. The results of analysis I, however, revealed a significant five-way interaction, performance input x time input x task x rating x sex of the subject,  $F(1,159)=5.86$ ,  $p < .017$ , with sex of subject being the additional independent variable. Thus, as speculated, the results indicated differential ratings of norms by female and male allocators. Analysis of simple effects indicated that the predicted four-way interaction was significant for males but not for females,  $F(1,159)=11.894$ ,  $p < .001$  and  $F(1,159)=.289$ ,  $p < .59$  respectively. I predicted that allocators would rate the importance of equality higher when their co-workers outperformed them than when they outperformed their co-workers. Conversely, higher ratings of the importance of equity were predicted when the allocators outperformed their co-workers. To test this hypothesis,

comparisons as a function of input levels on the puzzle and brainstorming tasks were performed on the allocators' ratings of the importance of equity and equality on their reward distribution decisions. Because these means are the most crucial comparisons, the cell means and F ratios for the predicted four-way interaction and the male significant four-way interaction are presented in Tables 1 and 2 respectively.

Table 1

Means and F Ratios of Norms Relevant to Performance on  
Puzzle Task and Time Worked (Performance) on Brainstorming  
Task Simple Interactions

Task	Performance	Equity Rating	F	Equality Rating	F
Puzzle	Superior	4.5	1.97	4.25	3.1
Brainstorming	Superior	5		3.62	
Puzzle	Superior	4.77	.06	3.43	3.5
Brainstorming	Inferior	4.86		4.1	
Puzzle	Inferior	4.98	.72	3.48	.05
Brainstorming	Superior	5.28		3.55	
Puzzle	Inferior	5.1	.005	3.7	.005
Brainstorming	Inferior	5.12		3.68	

Table 1 indicates that the hypothesis was partially supported. The ratings of equality in one mixed input situation (i.e., superior inputs on puzzle task and inferior inputs on the brainstorming task) indicated that, as predicted, participants who were outperformed rated equality as more important than when they outperformed their co-workers, but this difference was only marginally significant

$F(1,159)=3.5$ ,  $p<.07$ . There were no significant findings for the other three mixed input situations.

This pattern of results was similar for the comparison of the male four-way interaction with the addition of a significant rating change for the equality measure for allocators who had superior inputs on both tasks,  $F(1,159)=8.94$ ,  $p<.005$ . This result indicates that males rated equality higher on the puzzle task than on the brainstorming task. The cell means and F ratios for males are presented in Table 2.

Table 2

Means and F Ratios of Norms Relevant to Performance on Puzzle Task and Time Worked (Performance) on Brainstorming Task Simple Interactions for Males

Task	Performance	Equity Rating	F	Equality Rating	F
Puzzle	Superior	4.54	.82	4.41	8.94
Brainstorming	Superior	5		2.91	
Puzzle	Superior	5.2	.25	3.15	3.22
Brainstorming	Inferior	4.95		4.05	
Puzzle	Inferior	5.55	.80	3.15	.25
Brainstorming	Superior	5.1		3.4	
Puzzle	Inferior	5.1	.25	3.5	.09
Brainstorming	Inferior	5.35		3.65	

These results provide partial support for the hypothesis. The results indicated that males rated higher the importance of the equality norm in the situation where their self-interest would be promoted (i.e., a person with inferior inputs would receive more of the reward if equal

pay to participants was important in the reward decision). To further explore the influence of self-interest on norm ratings, the significant results of the unweighted means ANOVA for each of the selected norms are presented below.

A number of significant effects emerged from analysis II. The  $2 \times 2 \times 2 \times 2 \times 2$  ANOVA was performed separately on the ratings of the equity, altruism, consideration, and equality norms. Overall, they revealed that males tended to rate norms as important that maximize their own rewards, while, females rated as important norms that would minimize their own rewards. Similarly, females rated equity as more important and equity as less important on their reward decision than males did.

There was a significant performance input  $\times$  order of task  $\times$  sex of subject interaction for equality,  $F(1,135)=5.15$ ,  $p<.025$ . For the initial task, female subjects who outperformed their partner on the puzzle task rated same pay to each member (equality) as more important ( $M=4.56$ ) than females who were outperformed ( $M=3.5$ ),  $F(1,135)=6.78$ ,  $p<.01$ . Females who outperformed their partners also rated equality as more important ( $M=4.56$ ) than males who outperformed their partners ( $M=3.56$ ),  $F(1,135)=5.9$ ,  $p<.02$ . In addition, for subjects whose team received \$4.50 on the first task, females rated same more important ( $M=4.2$ ) than males ( $M=2.9$ ),  $F(1,135)=7.22$ ,  $p<.01$ . Similarly, sex of subject interacted with order of money for the equity measure,  $F(1,135)=5.51$ ,  $p<.02$ . For subjects who received

\$4.00 for the first task, males rated equity more important ( $M=5.31$ ) than did females ( $M=4.62$ ),  $F(1,135)=9.45$ ,  $p<.005$ , there was no significant effect, however, for \$4.50 first condition.<sup>1</sup>

There was for equality a significant performance input x time input x order of tasks x data type interaction,  $F(1,135)=4.83$ ,  $p<.03$ . Subjects who were outperformed by their co-worker on the puzzle task, and whose partner worked twice as long on the brainstorming task rated same pay as more important on their second task. Thus, when subjects had inferior inputs on both tasks they rated same pay to each person more important the second time they had inferior inputs.

There was a significant sex of subject x performance input x time input x order of task x order of money interaction for the consideration measure,  $F(1,135)=5.047$ ,  $p<.026$ . For subjects who worked on puzzles as their first task, males who outperformed their partner rated pay partner according to partner's expectations as less important than males who were outperformed,  $F(1,135)=3.46$ ,  $p<.065$  ( $M=1.9$  and  $3.2$  respectively). Analysis of simple effects also indicated that subjects with mixed inputs rated consideration as more important than subjects who were

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<sup>1</sup>Only the final, most precise comparisons are reported for analyses of simple effects of higher order interactions.



outperformed on both tasks,  $F(1,135)=3.51$ ,  $p<.06$  ( $\underline{M}=4$  and  $\underline{M}=3.51$  respectively).

Finally, there was a significant sex of subject x performance input x time input x order of task x order of money x data type for the variable need,  $F(1,135)=3.94$ ,  $p<.049$ . For subjects whose team received \$4.00 after their first task (when it was brainstorming), males who outperformed their co-workers on both tasks rated the importance of a person's need for the money lower ( $\underline{M}=3$ ) than males with mixed inputs (i.e., superior inputs on the puzzle task and inferior inputs on the brainstorming task).

The significant effects from analysis II support the hypothesized use of more than one norm. Subjects rated equity, equality, need, and consideration as important to their reward allocation decisions. Generally, the analyses revealed that in both input situations subjects rated more than one norm as important on their reward distribution decision, males and females rated the importance of norms differently, and many subjects changed their ratings from one situation to the other.

Subjects were also asked to rate the importance of four inputs--performance, time spent, effort, and partner's expectations--they might have used in deciding how to divide the rewards. I predicted that self-interest would influence the ratings of the importance of the time and performance inputs in mixed input situations. A four way, performance input x time input x task x norm ratings,

interaction was predicted on analysis I. Note, however, that this interaction may not be as clear a test of self-interest as the norm interaction because the predicted shifts of the ratings of the importance of time and performance may be partially masked by the experimenter linking team reward with performance in the puzzle task and team reward with time in the brainstorming task. The cell means are in Table 3.

Table 3

Means and F Ratios Relevant to Ratings of the Inputs on the Puzzle and Brainstorming Tasks

Task	Time	Rating F	Performance
Puzzle	3.63	36.64	4.62
F	19.01		14.83
Brainstorming	4.34	4.65	3.99

Table 3 suggest that the experimenter effectively linked certain inputs with team pay. This linkage may have affected the test of the hypothesized influence of self-interest on subjects' ratings of the importance of selected inputs.

The results indicated a significant five-way interaction,  $F(1,159)=4.74$ ,  $p<.031$ , with sex of subject being the additional independent variable. Thus, as speculated the results indicate differential patterns of weightings of inputs by male and female allocators. Analysis of simple effects revealed that the predicted four-way interaction

was marginally significant for males,  $F(1,159)=3.19$ ,  $p<.078$ , but not for females,  $F(1,159)=1.73$ ,  $p<.19$ .

To test the hypothesis, changes of input ratings for different levels of performance and time inputs on the puzzle and brainstorming tasks were calculated. Cell means and  $F$  ratios for the predicted four-way interaction are presented in Table 4.

Table 4

Means and  $F$  Ratios of Inputs Relevant to Performance on Puzzle Task and Time Worked on the Brainstorming Task Simple Interactions

Task	Levels of the Experimenter's Relevant Input	Levels of Time Input	Time Rating	$F$	Levels of Performance Input	Performance Rating	$F$
Puzzle Brainstorming	Superior	Equal	4.05	.60	Superior	4.14	1.16
	Superior	Superior	4.31		Equal	3.78	
Puzzle Brainstorming	Superior	Equal	3.35	8.54	Superior	4.7	1.55
	Inferior	Inferior	4.31		Equal	4.2	
Puzzle Brainstorming	Inferior	Equal	3.7	4.53	Inferior	4.68	5.2
	Superior	Superior	4.4		Equal	3.92	
Puzzle Brainstorming	Inferior	Equal	3.4	8.35	Inferior	4.98	9.72
	Inferior	Inferior	4.35		Equal	3.95	

Table 4 indicates that the hypothesis was partially supported. For participants with superior time inputs on the brainstorming task and inferior performance inputs on the puzzle task, the subjects rated time more important on the brainstorming task (on which they had superior time inputs)

than on the puzzle task (on which they had equal time inputs). Although it did not reach significance, the rating of performance for subjects with superior performance inputs on the puzzle task and inferior time inputs on the brainstorming task was, as predicted, higher for the puzzle task (on which they had superior performance inputs) than the brainstorming task (on which they had equal performance inputs). However, the planned comparisons of the remaining cells indicated that two predicted simple interactions were significant in the non-predicted direction.

This pattern of results was replicated for the comparisons of the four-way interaction for males, with the exception that the previously non-significant simple effect for subjects with superior performance inputs on the puzzle task and inferior time inputs on the brainstorming task was marginally significant (again, in the predicted direction).

Table 5

Means and F Ratios of Inputs Relevant to Performance on  
Puzzle Task and Time Worked on the Brainstorming Task Simple  
Interactions for Males

Task	Levels of the Exper- imenter's Relevant Input	Levels of Time In- put	Time Rating	F	Levels of Perfor- mance Input	Performance Rating	F
Puzzle Brain- storming	Superior	Equal	4.41	.09	Superior	4.32	1.16
	Superior	Superior	4.54		Equal	3.82	
Puzzle Brain- storming	Superior	Equal	2.7	8.43	Superior	5.4	3.75
	Inferior	Inferior	4.05		Equal	4.5	
Puzzle Brain- storming	Inferior	Equal	3.45	4.18	Inferior	4.95	7.23
	Superior	Superior	4.4		Equal	3.7	
Puzzle Brain- storming	Inferior	Equal	3.25	3.75	Inferior	5.1	2.27
	Inferior	Inferior	4.25		Equal	4.4	

The significant changes in ratings for subjects who were out-performed on both tasks may reflect the link of team reward to different inputs for each of the tasks.

Thus, these tests were supported when one task had superior predicted inputs versus equal inputs for the other task. The tests were not supported when the predicted inputs were equal on one task and inferior on the other. For example, the comparison of ratings for the input time were supported when the brainstorming task had superior time inputs versus equal time inputs for the puzzle task. The comparison of ratings for the input time were not supported when the puzzle task had equal time inputs and the

brainstorming task had inferior inputs. To further explore the influence of self-interest on input ratings, the results of the  $2 \times 2 \times 2 \times 2 \times 2$  unweighted means ANOVAs for four dependent measures (Analyses II) are presented below.

A number of significant effects emerged from the separate 26 unweighted means ANOVAs of participants' ratings of the importance of performance, time, effort, and need on their reward allocation decisions. The results of Analyses II are presented below in three sections. Table 6 presents the F ratios for the norm and input ANOVAs.

Table 6. Summary of Analysis of Variance for the Nine Repeated Measures (Analysis II)

<u>Source of Variation</u>	<u>df</u>	<u>% of \$ Taken</u>	<u>F Ratios</u>			
			<u>Effort</u>	<u>Time</u>	<u>Expectations</u>	<u>Performance</u>
Between Subjects						
Sex of Allocation (X)	1	.9	.8	.6	1.2	6.1
Puzzle Performance (P)	1	97.0	.0	.1	1.4	.8
B S Time (T)	1	34.4	.0	2.2	4.1	4.0
Order of Task (O)	1	3.4	.8	.3	.7	.5
Order of \$ (M)	1	.2	.4	.2	1.9	.2
C P	1	.9	2.2	.0	.6	.6
X T	1	.0	2.1	3.2	3.8	2.3
X O	1	.9	.0	1.6	.7	1.2
X M	1	.0	.5	.4	2.1	.2
P T	1	4.7	.4	.4	.6	1.3
P O	1	.1	1.0	1.9	.0	7.7
P M	1	1.8	.0	.0	.2	.1
T O	1	.1	4.4	.1	2.6	.1
T M	1	.1	1.2	.0	1.2	1.2
O M	1	.1	.3	5.8	2.7	3.1
X P T	1	.3	3.0	4.2	.4	.0
X P O	1	.0	.0	.0	2.9	1.0
X P M	1	1.0	1.8	1.0	.3	6.3
X T O	1	8.8	4.4	.0	2.4	1.9
X T M	1	1.0	.4	.0	1.1	.0
X O M	1	.0	.6	.5	.1	.3
P T O	1	.2	.1	.2	.1	2.3
P T M	1	2.7	.4	.1	.9	.0
P O M	1	.4	.0	.1	.2	.4
T O M	1	.5	.1	.5	.2	.0
X P T O	1	2.7	.0	.0	.4	4.0
X P T M	1	1.6	.2	1.4	2.1	.9
X P O M	1	.0	.3	1.9	2.2	.0
X T O M	1	1.8	.8	1.8	.8	2.8
P T O M	1	.3	1.7	.0	1.2	.1
X P T O M	1	.1	.4	.5	1.7	.7
Error:	135	(.006)	(1.96)	(3.2)	(2.4)	(2.8)
Between Subjects						

Table 6 (Cont'd.).

<u>Source of Variation</u>	<u>df</u>	<u>% of \$</u> <u>Taken</u>	<u>Equity</u>	<u>Equality</u>	<u>Altruism</u>	<u>Consideration</u>
Between Subjects						
Sex of Allocator (X)	1	.9	4.3	3.5	.9	.0
Puzzle Performance (P)	1	97.0	4.3	1.8	.2	1.9
B S Time (T)	1	34.4	.1	.0	1.2	3.3
Order of Task (O)	1	3.4	.3	.2	.3	4.5
Order of \$ (M)	1	.2	.2	.6	.0	.2
X P	1	.9	.1	.0	1.5	.2
X T	1	.0	.1	.3	.1	.5
X O	1	.9	.6	.3	.6	7.6
X M	1	.0	5.5	3.9	1.8	2.6
P T	1	4.7	.0	1.0	.1	.2
P O	1	.1	3.7	2.7	2.1	.3
P M	1	1.8	.3	.1	1.0	.2
T O	1	.1	.8	.7	2.3	4.2
T M	1	.1	.9	1.1	.0	1.6
O M	1	.1	.4	.8	.4	3.3
X P T	1	.3	1.5	.0	.1	1.4
X P O	1	.0	.3	5.1	3.2	.2
X P M	1	1.1	.0	.0	.3	.3
X T O	1	8.8	.2	.2	2.7	.1
X T M	1	1.0	.5	.6	1.0	3.6
X O M	1	.0	1.5	.2	.2	.5
P T O	1	.2	.2	.9	3.0	.1
P T M	1	2.7	.8	1.3	1.6	.1
P O M	1	.4	1.8	2.3	.6	1.6
T O M	1	.5	.1	.1	.1	1.2
X P T O	1	2.7	2.4	.0	.0	.4
X P T M	1	1.6	.2	1.0	.4	.2
X P O M	1	.0	.0	.3	3.7	1.4
X T O M	1	1.8	2.4	.0	1.8	.0
P T O M	1	.3	2.3	.3	.0	2.6
X P T O M	1	.1	.0	.0	2.2	5.0
Error	135	(.006)	(2)	(3.34)	(3.29)	(2.52)
Between Subjects						



Table 6 (cont'd).

<u>Source of Variation</u>	<u>df</u>	<u>% of \$ Taken</u>	<u>Effort</u>	<u>Time</u>	<u>Expectations</u>	<u>Performance</u>
Within Subjects						
DATA TYPE	(C) 1	4.8	.1	22.4	3.7	24.3
X C	1	.4	3.2	.6	.1	2.4
P C	1	137.5	6.4	.5	.0	3.5
T C	1	88.1	.1	2.5	.1	.2
O C	1	31.8	.2	2.6	5.0	.6
M C	1	.2	.2	1.5	.3	.1
M P C	1	.1	.2	.0	.1	.8
M T C	1	1.8	.2	.1	3.6	.6
X O C	1	2.4	.9	.4	3.0	.9
X M C	1	.3	.8	1.1	1.4	.0
P T C	1	.7	.0	.6	.0	.4
P O C	1	5.2	.8	.0	.1	4.2
P M C	1	.2	1.0	2.4	.1	.0
T O C	1	.0	.6	1.2	.0	1.9
T M C	1	.0	.8	.0	.5	.0
O M C	1	2.0	.8	4.2	.7	.0
X P T C	1	.5	3.9	1.9	.5	5.5
X P O C	1	1.5	1.6	1.9	.0	.0
X P M C	1	.4	2.5	.0	3.2	.1
X T O C	1	.2	2.5	.0	.3	5.4
X T M C	1	.2	.0	2.0	.0	15.1
X O M C	1	.1	3.1	.2	.0	1.2
P T O C	1	.2	2.3	.5	.4	.4
P T M C	1	7.2	.2	1.6	2.6	1.2
P O M C	1	.4	1.3	.0	1.0	.2
T O M C	1	5.4	.0	.3	.4	.6
X P T O C	1	2.8	1.8	1.5	.3	.8
X P T M C	1	.2	.5	.2	6.0	.4
X P O M C	1	.3	.0	.0	3.6	.3
X T O M C	1	.2	1.6	2.5	3.8	.0
P T O M C	1	1.2	2.0	.6	.0	1.6
X P T O M C	1	2.7	.3	.8	1.3	.3
Error:	135	(.004)	(1.12)	(1.89)	(1.35)	(1.41)

Within subjects

Table 6. (cont'd)

<u>Source of Variance</u>	<u>df</u>	<u>% of \$ Taken</u>	<u>Equity</u>	<u>Equality</u>	<u>Altruism</u>	<u>Consideration</u>
Within Subjects						
DATA TYPE	(C) 1	4.8	2.4	.0	3.0	.5
X C	1	.4	2.6	.2	.1	3.0
P C	1	137.5	.5	.0	.0	3.0
T C	1	88.1	1.3	4.0	.2	1.4
O C	1	31.8	.0	.5	.1	.2
M C	1	.2	.0	.4	.0	.0
M P C	1	.1	.0	2.7	.4	.5
M T C	1	1.8	1.5	2.6	.0	.4
X O C	1	2.4	2.7	.2	.0	.2
X M C	1	.3	.3	.2	.7	.2
P T C	1	.7	.2	4.9	.7	.1
P O C	1	5.2	4.2	6.3	.5	1.4
P M C	1	.2	1.8	.5	2.1	.1
T O C	1	.0	3.1	3.2	.0	1.7
T M C	1	.0	.7	.3	1.3	.4
O M C	1	2.0	.8	.5	.2	.0
X P T C	1	.5	4.4	2.8	.0	.0
X P O C	1	1.5	.4	1.6	.4	.9
X P M C	1	.4	1.0	.0	.2	2.5
X T O C	1	.2	.1	.1	.0	.9
X T M C	1	.2	.3	.6	2.2	1.0
X O M C	1	.1	.0	.1	.3	2.3
P T O C	1	.2	1.9	4.8	1.3	1.0
P T M C	1	7.2	.1	.4	.3	.2
P O M C	1	.4	.3	.1	.4	.1
T O M C	1	5.4	.2	.1	1.7	1.8
X P T O C	1	2.8	.9	1.2	1.2	.3
X P T M C	1	.2	1.5	4.6	.8	.1
X P O M C	1	.3	.8	.2	.1	.2
X T O M C	1	.2	.0	.8	.2	.1
P T O M C	1	1.2	.0	.2	1.7	.8
X P T O M C	1	2.7	2.8	.0	3.9	.6
Error:	135	(.004)	(1.43)	(2.12)	(1.11)	(1.07)

Within subjects

Performance and Time. Analysis of simple effects for the significant sex of subject x time input x performance input interaction for the time variable revealed that males who worked longer than their co-worker rated the importance of time higher ( $\bar{M}=4.54$ ) than males who worked a shorter amount of time ( $\bar{M}=3.38$ ),  $F(1,135)=8.48$ ,  $p<.004$ . Analyses of simple effects for three four-way interactions for the performance variable, representing combination of sex of subject, performance input, time input, order of task, order of money, and data type, all indicated that males rated the importance of performance on the brainstorming task higher when their co-workers worked longer than when they worked longer,  $F$  ratios ranged from 3.93 to 12.05.

The analysis of simple effects for the significant sex of subject x time input x order of money x data type interaction revealed that females rated the importance of performance lower on the brainstorming task when their co-workers worked longer ( $\bar{M}=3.53$ ) than when they worked longer ( $\bar{M}=4.28$ ),  $F(1,135)=3.93$ ,  $p<.05$ . For the performance input, there was a significant sex of partner x performance input x order of money,  $F(1,135)=6.33$ ,  $p<.013$ . Female subjects with superior performance inputs rated the importance of performance lower ( $\bar{M}=3.65$ ) than male subjects with superior performance inputs,  $F(1,135)=9.162$ ,  $p<.003$ .

Expectations. There was a significant sex of subject x performance input x time input x order of money x data

type interaction for the variable expectations,  $F(1,135)=6.897$ ,  $p<.01$ . Male participants who had superior inputs on both tasks rated the importance of partner's expectations of the amount he or she was to receive lower than males who had inferior inputs on one of the tasks. In contrast, female participants who had superior inputs on both tasks rated the importance of partner's expectations higher than females who had inferior inputs on one of the tasks.

Effort. There was a significant sex of subject x performance input x time input x data type interaction for the effort variable,  $F(1,135)=3.88$ ,  $p<.05$ . Females who had superior inputs on both tasks rated the importance of effort lower than females with mixed inputs (i.e., superior time and inferior performance inputs),  $F(1,135)=4.69$ ,  $p<.03$ . ( $M=4.65$  and  $M=5.5$  respectively). There also was a significant three-way interaction, sex of subject x time input x order of task,  $F(1,135)=4.368$ ,  $p>.039$ . Males who worked longer than their co-worker on the brainstorming task rated effort higher ( $M=5$ ) than subjects whose partner worked longer ( $M=4.2$ ),  $F(1,135)=8.279$ ,  $p<.005$ .

The significant effects for the input items support the hypothesized use of more than one input. The subjects rated performance, time spent, effort, and partner's expectations as important to their reward distribution decisions. Generally, the analyses revealed that in both input situations subjects rated more than one input as

important, males and females rated the importance of inputs differently, and many subjects changed their ratings from one situation to the other. They also revealed that males tended to rate the importance of an input higher on the task that would maximize their reward. Females, on the other hand, tended to rate the importance of an input higher that would minimize their reward.

### Other results

Naive males who worked longer than their co-worker took a higher percentage of the total pay ( $\bar{M}=.533$ ) than males whose partners worked longer ( $\bar{M}=.459$ ),  $F(1,135)=18.70$ ,  $p < .001$ . Experienced females (i.e., previously completed the puzzle part of this reward distribution study) who worked longer than their co-worker took a higher percentage of the total pay ( $\bar{M}=.525$ ) than females whose co-worker worked longer ( $\bar{M}=.451$ ),  $F(1,135)=19.11$ ,  $p < .001$ . Subjects who outperformed co-worker on the puzzle task took a higher percentage of the money ( $\bar{M}=.553$ ) than those who were outperformed ( $\bar{M}=.488$ ),  $F(1,135)=69.94$ ,  $p < .001$ . Experienced subjects with superior performance inputs rated the importance of contribution higher than naive subjects. Naive subjects rated the importance of co-worker's expectation on their reward distribution decision for the brainstorming task higher than subjects who previously participated in the puzzle task.

## Chapter IV

### Discussion

The major focus of this study was the influence of self-interest on reward distribution decisions. Reported changes in the subjects' perceptions of the importance of selected norms and selected inputs in various reward allocation situations were examined. This chapter presents a discussion of the results and their implications. Taken together the results of this study provide some, though hardly unequivocal, support for the hypothesized influence of self-interest on reward distribution decisions.

The results supported the hypothesized allocators' concurrent use of more than one norm when distributing rewards. As predicated, participants rated more than one norm as important on their reward distribution decisions in two separate reward allocation situations. The results of the ratings of the norms suggest that participants differentially weighted the importance of norms on their reward allocation decisions. Thus, the results of Fullerton (1978) were extended.

In this study, the subjects rated the importance of norms and inputs after they had distributed the rewards. In an earlier study (Fullerton, 1978), which used the same dependent potential input and norm measures in a modified Solomon pretest-post test design a few pretest-post test

interactions emerged. These results indicated that the possibility that the ratings of potential inputs and norms were only after-the-fact justifications of the subject's division of the rewards could not explain completely subjects' judgments.

As stated above, the results suggest that the participants differentially weighted the importance of norms on their allocation decisions. Thus, it is possible for allocators to weigh as important norms that arouse incompatible response tendencies in them. Under such circumstances the allocators could reconcile these differences by a compromise response which partially satisfies each response or they could utilize the norm or combination of norms that maximize their reward (self-interest).

The study of the possible weighting of norms to foster financial self-interest was the major purpose of this study. In general, the results indicated that financial self-interest influenced the decisions of many reward allocators. The crucial tests of self-interest were significant for one of the four critical comparisons. This comparison revealed that some allocators perceived that the equality norm was more important on their reward distribution decision when they had been outperformed than when these same allocators outperformed their co-workers. This raising of the importance of the equality norm indicates that these allocators were influenced by self-interest. If the norm of equality is important when you have inferior inputs,

it justifies your self-allocating half of the reward--which is a higher amount than if contribution was the reward distribution criterion. In addition, the results indicate that participants who have been outperformed more than once raised their rating of the importance of equality even higher the second time. Thus, individuals who have inferior inputs initially could use one combination of norms when allocating, but if they are outperformed again they raise (even higher) the importance of the norm that justifies dividing the rewards equally. This finding also suggests that individuals who have inferior inputs in many of their experiences would be more likely to rate the importance of equality higher than individuals who primarily have superior or mixed inputs. In addition, other results indicated that males attempted more than females to maximize their financial self-interest.

#### Sex Differences

As speculated, there were sex differences in the ratings of norms. The results partially supported the self-interest hypothesis for males. The critical test of the hypothesis (a four-way, performance input x time input x task x rating, interaction) was significant only for males. Furthermore, the results suggested that males rated as important norms that would justify a high self-allocation. Conversely, females rated as important norms that would justify a low or equal self-allocation.



The equity norm prescribes that an allocator should reward individuals in proportion with their perceived task inputs. Research supports this model, especially for males (cf. Adams and Freedman, 1976). However, males rated equality--pay each member the same amount-- as more important on their reward allocation decision when they would receive less than the "same amount" if the reward was divided according to the equity prescription. This rating suggests that these males are maximizing their financial reward and protecting their self-esteem by raising the importance of a norm that justifies their higher self-allocation. This shifting in the importance of norms is consistent with the results of several reward distribution studies which found that males followed equity when it dictated taking more than half of the reward but did not do so when equity dictated taking less than half of the reward (e.g. Leventhal and Anderson, 1970).

Males who had superior inputs rated the importance of two other norms, need and consideration, lower than when they had inferior inputs. This rating pattern also reflects self-interest. In this study the team earned a set amount of money; therefore, any increase in one team member's reward decreased the other's reward. If the superior performer considered as important norms on which he did not have superior inputs, he might have decided to allocate a larger amount of money to the person with these equal or superior inputs. If the allocator considered the

expectations of his co-workers or their needs, he might have allocated a larger amount to them. Instead he weighed as less important norms on which he did not have superior inputs, and this reflects self-interest.

Females rated the equity norm as less important and the equality norm as more important on their reward distribution decisions than did males. In addition, when both males and females had superior inputs, the females rated the importance of the norm of equality higher. Females who had superior inputs also rated the importance of equality higher than when females had inferior inputs. Thus, females and males weighted the norms differently. Females rated as important the norms that would justify less self-reward, while males rated as important the norms that would justify the highest possible self-allocation.

The finding that males attempted to maximize their financial self-reward is consistent with equity theorizing (cf. Adams, 1965) and post hoc explanations of results (Leventhal and Anderson, 1970; Lane and Coon, 1972). The finding that females do not attempt to maximize financial self-reward is consistent with the findings and theorizing of Katz and Messe' (note 3). This is also consistent with the findings of Lane and Messe' (1971) that indicated that females make few self-maximizing allocations.

The results of this study are congruent with Sampson (1975) and Vinacke's (1969) conclusions that males are oriented toward achievement and self-interest, while females

are oriented more toward interperson consideration. The present finding concerning rating changes refines previous theorizing (Deutsch, 1975) that persons who value positive social arrangements use equality as the dominant principle of distributive justice, while those who value achievement use equity. These results suggest that individuals who value positive social arrangements use (weigh as important) equality when they have superior or equal inputs, and equity when they have inferior inputs, while those who value achievement use equity when they have superior inputs and equality when they have inferior or equal inputs. It is important to note that while the results of the ratings of the importance of selected norms are congruent with previous theorizing (c.f. Vinacke, 1969; Deutsch, 1975; Sampson, 1975), the actual monetary allocation was not.

Although females rated as important the norms that would justify the minimizing of their own rewards, their actual reward allocations did not differ from the males. One possible reason for the lack of sex differences in this study's reward allocation is self-selection. This study was a repeated measures design consisting of two separate parts. Only the data of subjects who participated in both of these "unrelated" studies for pay were analyzed. Twelve males and 43 females who participated in the first study would not participate in the second. It is interesting to note that three times as many females as males refused to participate in the second allocation experiment. These 43

females who refused were approximately one half of the females who did participate in both parts (N=82). Watts (1979) found a high correlation ( $r=.41$ ,  $p<.065$ ) between female ratings of comfort and the amount of pay they self-allocated. The more uncomfortable the female subjects felt about paying themselves the less they self-allocated. Moreover, Messe' and Watts (Note 5) found that females reported feeling less comfortable about distributing rewards than males did. Thus, if the refusal of these 43 females reflects their discomfort in a reward distribution situation, the females who possibly felt the most uncomfortable and who, therefore, would have self-allocated the least were not included in the data that were analyzed.

Although female allocators often distributed rewards as predicted by the equality norm, their allocation patterns varied from taking less for themselves when they have superior inputs, through dividing the rewards equally, taking an amount between equity and equality predictions, to taking the amount predicted by the equity norm (Leventhal and Lane, 1970; Leventhal and Anderson, 1970; Watts, 1979; Austin and McGinns, 1977 - note: not a self-allocation study).

The results supported the hypothesized use of more than one input when distributing rewards. As predicted, participants rated performance, time spent, effort, and partner's expectations as important to their reward distribution

decisions in two reward allocation situations, thus, the findings of the present study replicate the results of Fullerton (1978) in more than one reward allocation situation. These results suggest that some participants perceived not only the experimenter's relevant input (the input linked to the team reward-performance for the puzzle task and time spent for the brainstorming task) but also effort and expectations as relevant inputs. The concurrent use of more than one input on reward distribution decisions combined with the finding of Fullerton (1978) that some allocators use another input or a weighted combination of inputs rather than just the input the experimenter links to the reward is of theoretical importance. Although Adams (1965) theorized that allocators use a weighted combination of inputs, the typical reward allocation experiment only looked at the levels of the experimenter's relevant input and the amount of money or credit allocated. If people differentially calculate inputs and outputs and differentially weigh the importance of these inputs and outputs, their perceptions of the "fairness" of a relationship can greatly differ depending on who the perceiver is (i.e., the experimenter, each of the participants, or other observers). Thus, as expected, the allocators rated the importance of selected inputs differentially.

This differential weighting of inputs supports Leventhal's theorizing concerning the confluence of norms

(1976). If the input most heavily weighted (for example, time spent) is one on which the participants' inputs were the same, then both equity and equality dictate the same allocation response. In this study the participants had different levels (superior, equal, or inferior) of time and performance on each of the two tasks. Thus, by examining the pattern of ratings and changes of ratings across the two tasks self-maximizing behavior can be detected.

In general, the results of the study provide partial support for the hypothesized influence of self-interest on input weightings. Table 3 illustrates that the experimenter effectively linked performance to the puzzle task and time to the brainstorming task. This strong link, however, clouded the critical tests of the hypothesis. I predicted that self-interest would influence the participants' ratings of the importance of the time and the performance inputs in mixed input situations. The crucial tests (planned comparisons of the predicted four-way, time input x performance input x task x rating, interaction) indicated that two of the tests were in the predicted direction, while the other two tests were in the non-predicted direction.

Of the two comparisons that were in the predicted direction, only one was significant. This comparison indicated that the participants who had equal time inputs on one task (puzzle) and superior time inputs on the other (brainstorming) rated time as more important on their reward decision on the task on which they had the superior

time input (i.e., the brainstorming task). The two comparisons that were significant but in the non-predicted direction were with tasks that linked reward with the experimenter's relevant input in the non-predicted direction. For example, the participants who had equal time inputs on the puzzle task and inferior time inputs on the brainstorming task were predicted to rate the importance of time higher on the puzzle task. However, time was linked to the reward on the brainstorming task and the participants' rated time most important on the brainstorming task.

There was a significant interaction that included the crucial test of the hypothesis (the predicted four-way interaction). Analysis of simple effects revealed that the predicted four-way interaction was marginally significant for males, but not for females. The comparisons of this interaction indicated that all four of the tests were significant, one marginally, and that the results replicated the pattern described above.

### Sex Differences

As speculated above, there were sex differences in the weightings of the importance of inputs. Leventhal and Lane (1970) reported that females with superior inputs commented that they de-emphasized their superior inputs when they divided the rewards. In this study the input levels of time and performance were crossed in two different allocation situations to test the emphasizing and/or de-emphasizing of the inputs. Not surprisingly, the results supported

(but not unequivocally) greater financial self-interest in males than in females. As previously mentioned, the predicted four-way interaction was significant for males. Numerous sex differences emerged from the results of the separate ANOVAs for each of the inputs. Generally, males rated the importance of an input higher if that input would justify a high self-allocation. On the other hand, females rated the importance of an input lower if that input would justify a high self-allocation.

Males rated the importance of the time input higher when they worked long (superior level of time input) than when their co-worker worked longer (inferior level of time input). Similarly, males rated the importance of performance (equal level of performance input) higher when their co-workers had superior time inputs. Thus, for males time was more important when they had superior time inputs compared to their co-workers' time inputs, but another input (performance) on which both team members have equal inputs was more important when they had inferior time inputs. In these examples the males' ratings of time and performance, respectively, would justify the self-allocation of a high reward. Furthermore, males who outperformed their partner rated the importance of performance higher than superior female performers. The same pattern emerged for the expectation and effort inputs. Males who had superior inputs on both tasks rate partner's expectations lower in importance than if they had inferior inputs on one task. Thus, when males had superior levels



of the experimenter's relevant input they lowered the importance of other inputs that might not justify their high self-allocation. The results for the effort input revealed that males who worked longer rated effort higher than when their co-worker worked longer. Females, however, lowered the importance of effort, an input which could benefit the superior performance participant or the participant who works longer, when they had superior inputs.

The females consistently demonstrated a reversal of the male rating pattern. Females whose partners worked longer rated performance as less important than when they had worked longer. Thus, females lowered the importance of an input which would have justified their dividing the pay equally when their partner worked longer and raised the importance of an input which would justify higher pay to their co-worker when she or he had superior experimenter's relevant input. Females, however, who had previously worked on a reward distribution task and now worked longer than their partner took a higher percentage of the reward (53%) than females who were outworked.

As noted in the discussion of norms, while the ratings of inputs suggest that females are minimizing the inputs that would justify high self-allocation and males are maximizing the inputs that would justify high self-allocation, there were no sex differences in reward allocation behavior. Watts, Messe', and Vallacher (note 4) selected subjects on the basis of their sex and agentic and communal values.

Their results revealed that the subjects' agentic or communal values had more of an effect on what they considered fair pay than on their reward allocation behavior. Similarly, in the present study the "values" of the participants may have affected the ratings of what inputs and norms were important on their reward distribution decision more than their actual reward allocation. Two possible explanations for the lack of sex differences in the reward allocation are self-selection and the amount of money the teams earned.

I previously discussed one possible reason for this finding (i.e., self-selection/differential drop out rate). A second possible reason for the lack of a sex difference in the actual reward allocation is the amount of money the team earned. There is evidence that the amount of money to be divided with a co-worker affects the division of that reward (Katz and Messe', note 3; Lane and Messe', 1972). This effect, however, was stronger for males than females. Callahan-Levy and Messe' (1979) found that females who determined only their own pay took significantly less for themselves than did males; the amount of money females allocated to themselves also was less than the amount that both males and females awarded to other females in the other pay condition. A recent study (Watts, 1979) attempted to replicate the Callahan-Levy and Messe' results. In this replication there were no sex differences in reward allocation. A comparison of the procedures indicated that the studies differed in the amount of time the subjects worked, pairing

of subjects with partners even when self-allocating, and the amount paid. Subjects in the initial study (Callahan-Levy and Messer, 1979) received \$6.00 for a 50-minute task, while subjects in the replication (Watts, 1979) received \$4.00 for a 30-minute task. Messer and Watts (note 5) conducted a follow-up study using \$4.00 and \$8.00. The results of this follow-up study suggest that the lack of sex differences in the main study was due to the amount distributed. The subjects in the present research received either \$4.50 or \$4.00 for a 50-minute brainstorming task or a 30-minute puzzle task. Thus, the lack of sex differences in this reward allocation also may be due to the amount that was distributed.

### Conclusions

Taken together, the results provide partial support for the hypothesized influence of self-interest on reward distribution decisions, especially for males. This study showed that many males change the weightings of the importance of selected norms and inputs that would justify their maximization of own outcomes. This finding is consistent with the literature on distributive justice and the view that males are rational, self-interested, and achievement oriented.

On the other hand, females weighted the importance of selected norms and inputs that would minimize their outcomes. This rating difference is consistent with the

findings of the typical reward distribution study, which shows that females tend to take less pay for their work than males. This rating pattern suggests that females make logical changes in their weightings of the importance of selected inputs and norms that justify their reward distribution. Their actual allocation, however, was not consistent with their ratings. Thus, males' ratings and allocation behavior were consistent, females' were not.

#### Implications for Further Research

Further investigation of changes in the ratings of the importance of inputs and norms is needed. As a first step, the standardization of the input and norm ratings and the re-analyzation of the data could provide a clearer test of the influence of self-interest on input weightings. In addition, a replication of the study with the majority of the female and male participants completing the study could provide insight into the lack of sex differences in the reward allocation in the present study. Finally, a replication of the study using a reward males and females equally value, such as free time or extra privileges in a restrictive environment (i.e., West Point or a prison) could provide added insight into sex difference in reward distribution behavior.

## REFERENCE NOTES

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1. Fullerton, T.D., Messe', L.A., & Vallacher, R.R. Reward distribution-task contingency congruence and group functioning. Submitted for publication.
2. Messe', L.A., & Lichtman, R.J. Motivation for the reward as a mediator of the influence of worker quality on allocation behavior. Paper presented at the meeting of the Southeastern Psychological Association, Atlanta, April 1972.
3. Katz, M., and Messe', L.A. A sex difference in the distribution of oversufficient rewards. Paper presented at the meeting of the Midwestern Psychological Association, Chicago, May 1973.
4. Watts, B L., Messe', L.A., & Vallacher, R R. Sex differences in distributive justice decisions. Submitted for publication.
5. Messe', L.A., and Watts, B L. Self-pay behavior: Sex differences in reliance on external cues and feelings of comfort. Paper presented at the meeting of the American Psychological Association, New York, September 1979.

## LIST OF REFERENCES

## LIST OF REFERENCES

- Adams, J. S. Wage inequities, productivity and work quality. Industrial Relations, 1963, 3, 9-16.
- Adams, J. S. Inequity in social exchange. In L. Berkowitz (Ed.), Advances in experimental social psychology. Vol. 2. New York: Academic Press, 1965.
- Adams, J. S., & Freedman, S. Equity theory revisited. In L. Berkowitz (Ed.), Advances in experimental social psychology, Vol. 9. New York: Academic Press, 1969.
- Adams, J. S., & Jacobsen, P. R. Effects of wage inequities on work quality. Journal of Abnormal and Social Psychology, 1964, 69, 19-25.
- Adams, J. S., & Rosenbaum, W. B. The relationship worker productivity to cognitive dissonance about wage inequities. Journal of Applied Psychology, 1962, 46, 161-164.
- Austin, W. and McGinn, R. C. Sex differences in choice of distribution rules. Journal of Personality, 1977, 45, 379-394.
- Berkowitz, L., & Walster, E. (Eds.), Equity theory: Toward a general theory of social interaction. New York: Academic Press, 1976.
- Cook, K. S. Expectations, evaluations and equity. American Sociological Review, 1975, 40, 372-388.
- Callahan-Levy, C. and Messe', L. A. Sex differences in the allocation of pay. Journal of Personality and Social Psychology, 1979, 37, 433-446.
- Deutsch, Morton. Equity, equality, and need: What determines which value will be used as the basis of distributive justice. Journal of Social Issues, 1975, 31, 137-149.
- Einhorn, H. J. Use of nonlinear, noncompensatory models as a function of task and amount of information. Organizational Behavior and Human Performance, 1971, 6, 1-27.



- Fullerton, T. D. Equity or equality: A question of relevant inputs and norms. Unpublished master's thesis, Michigan State University, 1978.
- Kahn, A. Reactions to generosity or stinginess from an intelligent or stupid work partner. A test of equity theory in a direct exchange relationship. Journal of Personality and Social Psychology, 1972, 21, 116-123.
- Lane, I. M., & Coon, R. C. Reward allocation in preschool children. Child Development, 1972, 1382-1389.
- Lane, I. M., & Messe', L. A. Equity and the distribution of rewards. Journal of Personality and Social Psychology, 1971, 20, 1-17.
- Lane, I. M., & Messe', L. A. Distribution of insufficient, sufficient, and oversufficient rewards: A clarification of equity theory. Journal of Personality and Social Psychology, 1972, 21, 228-229.
- Lane, I. M., Messe', L. A. & Phillips, J. L. Differential inputs as a determinant in the selection of a distributor of rewards. Psychonomic Science, 1971, 22, 228-229.
- Lerner, M. J. The justice motive: 'Equity' and 'parity' among children. Journal of Personality and Social Psychology, 1974, 29, 539-550. (a)
- Lerner, M. J. Social psychology of justice and interpersonal attraction. In T. Huston (Ed.), Foundations of interpersonal attraction. New York: Academic Press, 1975. (b)
- Lerner, M. J. The justice motive in social behavior: Introduction. Journal of Social Issues, 1975, 31, 1-19.
- Leventhal, G. S. The distribution of rewards in groups. In I. Berkowitz (Ed.), Advances in experimental social psychology. Vol. 9, New York: Academic Press, 1976.
- Leventhal, G. S., Allen, J., & Kemelgor, B. Reducing inequity by reallocating rewards. Psychonomic Science, 1969, 14, 295-296.
- Reis, H. T., & Gruen, J. On mediating equity, equality, and self-interest: The role of self-presentation in social exchange. Journal of Experimental Social Psychology, 1976, 12, 487-503.

- Sampson, E. E. Studies of status congruence. In L. Berkowitz (Ed.), Advances in Experimental Social Psychology, Vol. 4. New York: Academic Press, 1969.
- Sampson, E. E. On justice as equality. Journal of Social Issues, 1975, 31, 45-64.
- Scott, W. A. Attitude measurement. In G. Lindzey and E. Aronson (Eds.) Handbook of Social psychology. (2d ed.) Vol. 2. Research methods. Reading, Mass.: Addison-Wesley, 1968.
- Shapiro, E. G. Effect of expectations of future interactions on reward allocations in dyads: equity or equality. Journal of Personality and Social Psychology, 1975, 31, 873-880.
- Vinacke, R. E. Sex-roles in a three person game. Sociometry, 1959, 22, 343-360.
- Walster, E., Berscheid, E., & Walster, G. W. New directions in equity research. Journal of Personality and Social Psychology, 1973, 25, 151-176.
- Walster, E., & Walster, G. W. Equity and social justice. Journal of Social Issues, 1975, 31, 21-45.
- Watts, B. Sex differences in reward distribution: The influence of social expectations. Unpublished master's thesis, Michigan State University, 1979.
- Winer, B. J. Statistical principles in experimental design. New York: McGraw-Hill, 1962.
- Zaleznik, A., Christensen, C. R., & Roethlisberger, F. J. The Motivation, productivity and satisfaction of workers. Boston: Harvard University, 1958.

## APPENDICES

## APPENDIX A

## SUGGESTED TOPICS

1. Professor not graduate students should teach college classes.
2. Marijuana should be legalized.
3. The numerical grading system places too much emphasis on the students grade-point and therefore should be replaced by a pass-fail system of grading.
4. Freshmen should be allowed to live off campus.
5. The privilege to serve alcoholic beverages in the dorm should be reinstated.
6. Tripling in the dorms should not be allowed.
7. There should be a regulation of women's hours for freshmen living in dormitories at MSU.
8. The legal drinking age in Michigan should be 21.
9. Non-university students should be allowed to use the intramural facilities as guests.
10. The University should use large lecture and TV classes because they are efficient and economical.
11. Most women go to college to find a husband.
12. Academic requirements such as Natural Sciences and Humanities should be waived for those students who feel they are unnecessary for their college education.
13. The next president of MSU, if at all possible, should be a woman.
14. The military draft should be reinstated.
15. A larger proportion of the total tickets available for any given sports event should be made available to the student body.

16. More traffic tickets should be given to reckless bicyclists.

## APPENDIX B

## TIME POST SESSION QUESTIONNAIRE

NATIONAL STANDARD NORM QUESTIONNAIRE  
(Telar, 1965)

The following statements deal with different aspects of worker compensation. Reach each statement carefully and decide how important each aspect is to you.

In rating the importance of the reasons, you will be given a scale that looks like this:

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Not at all important	Barely important	Slightly important	Somewhat important	Moderately important	Very important
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What we would like you to do is to write each reason above the line in a place that indicates how important that reason is.

Here is a simple example of how to use the scale. Suppose we ask a respondent to rate how important these three particular reasons for owning a dog were for him or her. The reasons the respondent was asked to rate were a dog protects me, keeps me company, and is friendly. The respondent's task was to write protect, friendly, and company above the line on the scale in positions that indicate the importance of each reason.

<u>protects.</u>			<u>company</u>		<u>friendly</u>
Not at all important	Barely important	Slightly important	Somewhat important	Moderately important	Very important

As you can see from the answers, the respondent did not think protection was at all important, while company was moderately important, and friendly was very important.

Now we would like you to consider a particular situation and rate the importance of a set of reasons in making a decision on a scale just like that shown above.

1. We are concerned with four factors you might have used in deciding the amount of pay to give each member working on a task. These four factors are:

1. how hard you and your co-workers tried to complete the task (effort)
2. the amount of time you and your co-worker spent on the task
3. your co-worker's expectations of how the pay would be allocated
4. the performance of you and your co-worker

Write effort, time, expectation, and performance on the line above the scale in a way that indicates how important you think each of these factors were in making your decision.

Not at all important	Barely important	Slightly important	Somewhat important	Moderately important	Very important
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2. Now we would like you to use the same scale to indicate the importance of four different rules you might have used in deciding how to divide the pay between you and your co-worker. They are:

1. Pay each member according to his or her contribution to the work (contribution).
2. Pay each member the same amount (same).
3. Pay more to the member who has the greater need for the money (need).
4. Pay each member according to what your partner's expectations seem to be about how much he or she will receive (consideration).

Write contribution, same, need, and consideration on the line above the scale in a way that indicates how important you think each of these factors were in making your pay decision.

Not at all important	Barely important	Slightly important	Somewhat important	Moderately important	Very important
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### THREE ITEM F SCALE

(Crame 1957)

Below is a list of 3 statements. Read each statement carefully and decide how important it is. In rating the importance of each statement circle the phrase that best describes your opinion.

1. How important would you say religion is in your life?

Not at all important	Slightly important	Moderately important	Very important
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2. How important is intelligence on school grades?

Not at all important	Slightly important	Moderately important	Very important
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3. How important is strict parental discipline in the development of a child?

Not at all  
important

Slightly  
important

Moderately  
important

Very  
important

ROTTER'S INTERNAL-EXTERNAL  
LOCUS OF CONTROL SCALE

On the following pages is a list of 14 statements. Read each statement and circle the choice that describes your opinion.

For example, suppose the statement read,

"a. There is too much emphasis on athletics in high school.

b. Team sports are an excellent way to build character."

If you consider team sports a character builder or if it is closer to your opinion than the other statement, circle b.

Please mark a response for every statement.

## INTERNAL VS. EXTERNAL CONTROL

- 1.a. Children get into trouble because their parents punish them too much.  
b. The trouble with most children nowadays is that their parents are too easy with them.
- 2.a. Many of the unhappy things in people's lives are partly due to bad luck.  
b. People's misfortunes result from the mistakes they make.
- 3.a. One of the major reasons why we have wars is because people don't take enough interest in politics.  
b. There will always be wars, no matter how hard people try to prevent them.
- 4.a. In the long run people get the respect they deserve in this world.  
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
- 5.a. The idea that teachers are unfair to students is nonsense.  
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
- 6.a. Without the right breaks one cannot be an effective leader.  
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
- 7.a. No matter how hard you try some people just don't like you.  
b. People who can't get others to like them don't understand how to get along with others.
- 8.a. Heredity plays the major role in determining one's personality.  
b. It is one's experiences in life which determine what one is like.
- 9.a. I have often found that what is going to happen will happen.  
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
- 10.a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.  
b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

- 11.a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
- b. Getting a good job depends mainly on being in the right place at the right time.
- 12.a. The average citizen can have an influence in government decisions.
- b. This world is run by the few people in power, and there is not much the little guy can do about it.
- 13.a. When I make plans, I am almost certain that I can make them work.
- b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
- 14.a. There are certain people who are just no good.
- b. There is some good in everybody.

On this question we would like you to use a somewhat different kind of scale to answer the following question.

On this scale, you will place an X mark on the line to indicate your answer to this question.

1. How confident are you that you know the sex of your co-worker?

My co-worker

Positively	Probably	Possibly	No idea	Possibly	Probably	Positively
was a male	was a male	was a male		was a female	was a female	was a female

## APPENDIX C

## PIECES POSTSESSION QUESTIONNAIRE

## NATIONAL STANDARD NORM QUESTIONNAIRE

(Telar, 1965)

The following statements deal with different aspects of worker compensation. Read each statement carefully and decide how important each aspect is to you.

In rating the importance of the reasons, you will be given a scale that looks like this:

Not at all important	Barely important	Slightly important	Somewhat important	Moderately important	Very important
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What we would like you to do is to write each reason above the line in a place that indicates how important that reason is.

Here is a simple example of how to use the scale. Suppose we ask a respondent to rate how important these three particular reasons for owning a dog were for him or her. The reasons the respondent was asked to rate were a dog protects me, keeps me company, and is friendly. The respondent's task was to write protect, friendly, and company above the line on the scale in positions that indicate the importance

of each reason.

protects			company		friendly
Not at all	Barely	Slightly	Somewhat	Moderately	Very
important	important	important	important	important	important

As you can see from the answers, the respondent did not think protection was at all important, while company was moderately important, and friendly was very important.

Now we would like you to consider a particular situation and rate the importance of a set of reasons in making a decision on a scale just like that shown above.

1. We are concerned with four factors you might have used in deciding the amount of pay to give each member working on a task. These four factors are:

1. how hard you and your co-worker tried to complete the task (effort)
2. the amount of time you and your co-worker spent on the task
3. your co-worker's expectations on how the pay would be allocated
4. the performance of you and your co-worker

Write effort, time, expectation, and performance on the line above the scale in a way that indicates how important you think each of these factors were in making your decision.

Not at all	Barely	Slightly	Somewhat	Moderately	Very
important	important	important	important	important	important

2. Now we would like you to use the same scale to indicate the importance of four different rules you might have used in deciding how to divide the pay between you and your

co-worker. They are:

1. Pay each member according to his or her contribution to the work (contribution).
2. Pay each member the same amount (same).
3. Pay more to the member who has the greater need for the money (need).
4. Pay each member according to what your partner's expectations seem to be about how much he or she will receive (consideration).

Write contribution, same, need, and consideration on the line above the scale in a way that indicates how important you think each of these factors were in making your decision.

Not at all important	Barely important	Slightly important	Somewhat important	Moderately important	Very important
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### WORK INVENTORY

(Tosi, 1962)

On the following is a list of 22 statements dealing with different aspects of work situations. Read each statement carefully and decide how important each aspect would be to you in the ideal job.

In rating the importance of an aspect in the ideal job, you will be given a scale that looks like this:

Not at all important	Slightly important	Moderately important	Very important
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What we would like you to do is circle the place on the line that indicates how important that aspect is.

For example, suppose the statement read, "How important would be having evenings and weekends free." Judge how im-  
portant this aspect of a work situation would be to you in the ideal job. If the idea of having evenings and weekends free would be very important to you, then you would circle very important on the scale. However, if you consider having evenings and weekends free not at all important, you would circle not at all important.

Please circle a response for every statement.

How important would be...

1. Clean, comfortable surroundings.

Not at all important	Slightly important	Moderately important	Very important
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2. Recognition for being an authority in my job.

Not at all important	Slightly important	Moderately important	Very important
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3. Working and living in the same community.

Not at all important	Slightly important	Moderately important	Very important
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4. Working independently on challenging tasks.

Not at all important	Slightly important	Moderately important	Very important
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5. Working with modern, up-to-date equipment.

Not at all important	Slightly important	Moderately important	Very important
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6. Keeping all my work neat and organized.

Not at all important	Slightly important	Moderately important	Very important
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7. Meeting new and interesting people.

Not at all important	Slightly important	Moderately important	Very important
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8. Having plenty of opportunity to enjoy time with my family and friends.

Not at all important	Slightly important	Moderately important	Very important
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9. A job not subject to fluctuating business conditions.

Not at all important	Slightly important	Moderately important	Very important
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10. The sense of teamwork you get when you have worked closely with other people to finish a job.

Not at all important	Slightly important	Moderately important	Very important
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11. Doing my best in whatever I undertake.

Not at all important	Slightly important	Moderately important	Very important
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12. Promotion based on personal ability.

Not at all important	Slightly important	Moderately important	Very important
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13. Developing close friendships with my co-workers.

Not at all important	Slightly important	Moderately important	Very important
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14. Working outdoors.

Not at all important	Slightly important	Moderately important	Very important
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15. Advancing as fast as my skills develop.

Not at all important	Slightly important	Moderately important	Very important
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16. Adequate health and retirement plans.

Not at all important	Slightly important	Moderately important	Very important
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17. Doing a good job according to my own standards even if I have to work hard.

Not at all important	Slightly important	Moderately important	Very important
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18. Ending arguments and disputes between others.

Not at all important	Slightly important	Moderately important	Very important
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19. Wearing the type of clothes I like.

Not at all important	Slightly important	Moderately important	Very important
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20. A secure future.

Not at all important	Slightly important	Moderately important	Very important
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21. A daily routine that is ordered and planned.

Not at all important	Slightly important	Moderately important	Very important
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22. Giving help to other people.

Not at all important	Slightly important	Moderately important	Very important
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## Work and Family Orientation Questionnaire

(Gullahorn, 1977)

The following statements describe reactions to conditions of work and challenging situations. For each item, indicate how much you agree or disagree with the statements, as it refers to yourself, by choosing the appropriate number on the scale, 1, 2, 3, 4, or 5.

1. I would rather do something at which I feel confident and relaxed than something which is challenging and difficult.

1	2	3	4	5
Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree

2. It is important for me to do my work as well as I can even if it isn't popular with my co-workers.

1	2	3	4	5
Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree

3. When a group I belong to plans an activity, I would rather direct it myself than just help out and have someone else organize it.

1	2	3	4	5
Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree

4. I find satisfaction in working as well as I can.

1	2	3	4	5
Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree

5. If I am not good at something I would rather keep struggling to master it than move on to something I may be good at.

1	2	3	4	5
Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree

6. Once I undertake a task, I persist.

1	2	3	4	5
Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree

7. I more often attempt tasks that I am not sure I can do than tasks I believe I can do.

1	2	3	4	5
Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree

8. There is satisfaction in a job well done.

1	2	3	4	5
Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree

9. Assuming that I get (or am) married, I would like my husband or my wife to have a job or career that pays well.

1	2	3	4	5
Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree

10. It is important to my future satisfaction in life to have a job or career that pays well.

1	2	3	4	5
Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree

11. It is important to me to have a job or career that will bring me prestige and recognition from others.

1	2	3	4	5
Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree

12. What is the least amount of education that will satisfy you?

1. one to three years of college work
2. graduate from college
3. one year of graduate work beyond college
4. a Masters Degree
5. a Ph.D. or other professional degree

13. How important do you think marriage will be to your life satisfaction, in comparison to your work?

1. marriage positively more important than my work
2. marriage and my work equally important
3. marriage positively less important than my work
4. my work will be (is) much less important than marriage

14. About how many hours a day do you spend studying (not including in-class time)?

1. less than 1 hour
2. 1 - 3 hours
3. 4 - 6 hours
4. 7 - 9 hours
5. more than 9 hours

On this question we would like you to use a somewhat different kind of scale to answer the following question. On this scale, you will place an X mark on the line to indicate your answer to this question.

1. How confident are you that you know the sex of your co-worker?

My co-worker

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positively was a male	probably was a male	possibly was a male	no idea	possibly was a female	probably was a female	positively was a female
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