DOCUMENT RESUME

ED 117 587 CG 010 287

AUTHOR Landau, Samuel B.
TITLE The Influence of Performance on Bargaining and Distribution of Rewards.
PUB DATE 75
NOTE 18p.; Paper presented at the Annual Meeting of the American Psychological Association (83rd, Chicago, Illinois, August 30-September 2, 1975); Not available in hard copy due to marginal legibility of original document

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS *Behavior Patterns; Children; *Interaction; *Performance Factors; *Rewards; *Self Evaluation; Social Exchange Theory; Speeches

ABSTRACT

Performance variables were manipulated to elicit differential outcomes of success and failure for dyad members in an attempt to investigate resultant bargaining and distribution of rewards. Seventy, 10-12-year old children (36 female, 34 males) were placed into dyads controlling for age, sex, I.Q., and friendship choices. Self-allocations were made (1) prior to an interaction, (2) after interactions involving an information exchange, and (3) as a result of a mutual decision process. The results indicated that successful performers gave themselves greater rewards than unsuccessful performers gave themselves; however, these responses reflected equality decisions. Prior to an interaction, unsuccessful performers gave themselves greater rewards than after an information exchange interaction condition. After this interaction, unsuccessful performers followed equity behavior, giving themselves smaller rewards. The mutual decision led to equal rewards for all regardless of performance. Content category analyses of the bargaining sessions revealed differences for performance factors, specifically that successful performers primarily discussed equality statements while unsuccessful performers emphasized equity and agreement with other statements. (Author)

Paper presented at the
American Psychological Association Convention, Chicago, Illinois, 1975

THE INFLUENCE OF PERFORMANCE ON BARGAINING AND DISTRIBUTION OF REWARDS

Samuel B. Landau

Wayne State University

Within the last several years there has been an increase in the number of studies investigating children's social behaviors. Aspects of these behaviors may consist of mutually interdependent patterns of interaction. The types of interaction that occur between children during their middle childhood years often involve situations where differences in the preferences for particular outcomes or courses of action arise. The preferences of one individual may not correspond to the preferences of the other. When all interacter's preferences cannot be met in terms of the resources available, the interaction may result in a "conflict" since everyone cannot receive exactly what they expect or feel that they deserve.

Some typical problems or conflicts that arise among children concern the (a) types of game that should be played, i.e., whether to play cowboys and Indians or baseball; (b) roles that are to be assigned, i.e., who will be the cowboy and who the Indian; and also (3) how to divide finite resources, i.e., food, candy, money. The predominant concern of this study addresses itself specifically to this last area of conflict: how do children, involved in a dyadic interaction, resolve a potential conflict, in which they must divide a finite resource among themselves?

Piaget (1965) reports that conflicts arise between children because of each child's lack of understanding of the other's point of view. This

predicament may be represented by an inflexibility of one's own position and appropriately labelled as "intellectual egocentrism". According to Piaget, the primary changing force through which intellectual egocentrism is reduced is through increased social interactions with peers. In order to satisfactorily get along with others, it is necessary, at least to some extent, to begin to perceive and to understand the other's perspectives. As the child develops from an egocentric, individualistic orientation elements of mutual cooperation and an increased understanding of the other's perspectives, in terms of wants, needs, desires, etc. become clearer (Piaget, 1965). Mutual respect may now become the basis for interactions. This factor serves as the foundation for the development of distributive justice. A decision is "unjust when it favors some at the expense of others... (or) when it penalizes the innocent, rewards the guilty, or when, in general, it fails to be meted out in exact proportion to the merit or guilt in question" (Piaget, 1965, p. 199).

Piaget, has suggested that distributive justice is manifested by its relationship to rewards and punishments and is represented in two forms: equality and equity. Equality judgments predominate in the earliest stages of distributive justice as rewards and punishments are distributed equally between everyone regardless of individual motivational antecedents or behavioral consequences. Equity decisions reflect a later stage as the rewards and punishments for behavior do become dependent upon motivational intentions rather than behavioral outcomes. The formulations proposed by Piaget, reflect an investigation of distributive justice obtained through analyses of moral judgments. However, distributive justice has also been studied from a different perspective, that of distributing rewards between participants engaged in specific task behaviors. Probably the most influential concep-

tualizations of these aspects of distributive justice are found within equity theory formulations as proposed by Adams (1963, 1965) and subsequent elaborations (Walster, Berscheid, & Walster, 1973; Pritchard, 1969; Weick & Nesset, 1968; Leventhal, 1975, in press). According to this orientation, social interactions are dependent upon the ratio of what is received in a particular relationship with what one brings into or gives up within the relationship. This ratio is then compared to the ratio perceived to exist for some other person, group, or even the same individual at another point in time. When an imbalance between the ratios exists, inequity or injustice is said to arise. Attempts to reduce this inequity then occurs.

Equity theory (Adams, 1965) suggests that rewards will be distributed in relation to inputs. Empirical support has substantiated this proposal (Leventhal & Michaels, 1969, 1971; Lane & Messe, 1971; Messe, 1971; Leventhal & Lane, 1970; Leventhal & Anderson, 1970). However, inputs may often be ignored and rewards may be distributed in terms of equality (Sampson, 1969; Kahn, 1972; Priutt, 1972; Morgan & Sawyer, 1967) or self-interest (Leventhal, Weiss & Long, 1969; Handlon & Gross, 1959; Ugurel-Semin, 1952).

It is interesting to note that most of these distributive justice studies have investigated allocations made to others, and usually fictitious others at that. Equity behavior typically has resulted. Yet, when self-allocations are to be made, the emphasis on equity responses are not so clear-cut. For performance, as an input factor under these conditions is often minimized as self-interest behavior is found to be a predominent response (Leventhal & Anderson, 1970; Ugurel-Semin, 1952). Therefore, when involved with making allocations to oneself, it is suggested that a norm of self-interest may be aroused which competes with other distributive justice modes of behavior.

However, as seen from Piaget's notions of distributive justice, interpersonal interactions serve to increase the awareness of the other. Consequently, a greater understanding of the other's position with respect to needs, desires, wants, etc. may become relevant, as this information becomes available, so that performance, per se, does not serve as the only input criterion upon which to base reward distribution. Most of the previous studies concerned with the allocation of rewards have focused on the decisions of a single individual distributing the rewards. Yet, many decisions involving a distribution of rewards, requires the interaction between several allocators. Consequently, the final decisions must be subject to the mutual agreements of all of the participants. If differences in the allocation desires of the allocators exists, then obtaining a mutually agreeable outcome will require much interaction in the form of bargaining, negotiation and compromise. As a result, the distributive justice norms of at least some of these allocators must be modified in order to reach a joint decision. The primary emphasis of inquiry in both equity and bargaining research has been towards the specific behavioral outcomes of social interaction. Conflict has been elicited within these interactions in relation to the distribution of finite resources. However, little attention has been given to process or content factors which could mediate the final distribution decisions.

The purpose of the present investigation was to study the attitudes and behaviors of children regarding the division of a finite reward between themselves and another child, both prior to and as a consequence of a direct, face-to-face interaction.

Methods

Subjects

Thirty-four male and 36 female children, 10 to 12 years old, in grades 5 and 6 of a suburban Detroit elementary school were recruited as subjects. The school was located in a lower middle class area. All subjects were white.

Procedures

Pretesting. Subjects were individually pre-tested. During this time sociometric friendship ratings of classmates were obtained by asking subjects to list two people they would most like to sit next to in class, and two they would least like to sit next to. Responses to these questions were used to operationally define "friends" and "non-friends," respectively. All other classmates were designed as "neutrals." Subjects were additionally administered the Peabody Picture Vocabulary Test (PPVT), a measure of children's verbal intelligence.

Formation of dyads. Dyads were formed on the basis of several factors. Each pair of individuals within any dyad were characterized by the following requirements: (1) both were within one standard deviation unit of each other in terms of age (6 months), (2) within 10 I.Q. points of each other on the PPVT; (3) received a "neutral" sociometric rating by the other; and (4) of the same sex.

Experimental session. Approximately four weeks after pre-testing, subjects were brought to the experimental session in pairs. Initially, they were seated back-to-back at separate tables and were given rating sheets on which they rated the child with whom they had been paired on four bi-polar adjectives: good-bad; honest-dishonest; friendly-unfriendly; and kind-unkind.

Next, an "anagram" task behavior was initiated. Subjects were given a

sheet of paper containing an example word depicting a sample of the task along with the stimulus word "homework." The children were told to try and form as many words as they could from the letters in this stimulus word. It was explained that if either one of them did well, they would receive up to 20 m & m candies. Emphasis was placed on the necessity of at least one dyad member doing well in order for the group to receive the reward. After five minutes, the experimenter collected these sheets taking care that each subject did not see the other's responses. One member of the dyad was randomly pre-selected to be "successful" on the anagram task and the other to be "unsuccessful." These results were clearly related to the subjects in each others' presence. The experimenter told the subjects that since one of them had done well on the task, m & m's could be distributed. Subjects were then asked to record how they would like to distribute the 20 m & m's between themselves. Response sheets were provided which listed the 21 possible allocations each subject could make ranging from "0 for me, 20 for the other," to "20 for me, 0 for the other." After responding these sheets were collected and the children were seated at opposite ends of the same table, facing each other. A rationale requesting subjects' help in suggesting possible ways and rationales for distributing the rewards was provided for this seating arrangement. They were asked to discuss, with each other, possible ways that the rewards could be divided without necessarily reaching some joint agreement. A tape recording was made of this interaction. At the conclusion of a 10-15 minute interval, subjects were once again separated and seated with their backs to each other at their original tables. Again, they were asked to indicate, on another allocation sheet, the way in which they wanted to divide the reward. Finally, the subjects were seated across from each other at the same table once again

and instructed to attempt to reach a joint agreement as to how the rewards should be divided. This interaction was also tape recorded. After a mutually agreeable outcome was reached the subjects were returned to their separate tables where assessments were made of the perceived "fairness" of the dyad partner and also one's satisfaction with the final reward outcome. The candy was then distributed according to the results of the joint decision.

Results

The dependent variable was the number of m & m candies each subject took for himself, after each of the three decision trials, i.e., trial 1, after knowledge of performance but prior to interaction; trial 2, after discussing possible ways the m & m candies could be divided (peer interaction); and trial 3, after a mutually agreed upon final allocation solution was reached (joint agreement). The mean number of m & m's allocated to oneself as a function performance, sex, and decision trials is seen in Table 1.

The most interesting finding was the significant performance X decision trials interaction. The situational variable of performance was found to have a differential effect as a result of peer interaction. The effect of the different decision trials had a greater impact for the unsuccessful performers than for the successful performers. This relationship can be clearly seen by Figure 1. Not only did the unsuccessful performers make lower self-allocations than did the successful performers, but also displayed greater variability in their allocation decisions across the different trial conditions. Tests on the simple main effects for the difference between the number of m & m's taken for oneself as a consequence of the performance conditions revealed a significant effect at the second decision

($F = 4.71$, $df = 2/124$, $p < .05$), i.e., after peer interaction. It was after the interaction encounter, after information was exchanged, that the unsuccessful performers took considerably less for themselves than the successful performers took for themselves. No statistically significant differences were revealed at either the first decision trial ($F = 1.35$, $df = 2/124$, ns) or the third trial ($F<1$, ns). These results consequently constrain the interpretation of the influence of the strong main effects found for both the performance factors ($F = 16.99$, $df = 1,62$ $p < .01$) and the decision trial conditions ($F = 6.02$, $df = 2,124$, $p < .01$).

Types of decisions reached. The previous analyses reflected the amount of self-rewards distributed across each of the conditions. Consequently, they are not indicative of the types of decision strategies subjects utilized in allocating the rewards. Subjects had an opportunity to make one of three allocation decisions: (1) equity (more for the successful performer); (2) equality (equal split); and (3) self-interest (more for the unsuccessful performer). Chi square analyses revealed that successful performers primarily elected equality decisions as a means of distributing the candy, while unsuccessful performers chose equity decision strategies to a much greater extent than did successful performers ($\chi^2 = 11.8$, $df = 2$, $p < .01$). These results were found to be consistent for both the first and the second decision trials ($\chi^2 = 7.04$, $df = 2$, $p < .05$ and $\chi^2 = 8.47$, $df = 2$, $p < .02$, respectively). The results of the third trial, mutual agreement, elicited primarily equality decisions.

Content of peer interactions. An analysis was undertaken to determine if there were any differences in the patterns of verbal communication that occurred between dyad members during peer interaction. The tapes of the face-to-face encounters were independently content analyzed by the experi-

menter and assistant. The unit of analysis was the sentence. Interrater reliability coefficients were calculated for each of the four major resultant categories. Correlations ranged from 0.83 to 0.96. Four response categories were found: equity, equality, agreement with other, and miscellaneous. Representative statements include the following: equality: "I think it's only fair that we both get the same amount."; equity: "He did better so he should get more."; agreement with other: "I'll go along with what he said. He won so he deserves to make the choice."; miscellaneous: "I don't care how we split them up." Significant main effects were found for the performance factor (successful-unsuccessful) in three of these categories: equality statements ($F = 38.49$, $df = 1/62$, $p < .001$); equity statements ($F = 10.01$, $df = 1/62$, $p < .002$); and agreement with other statements ($F = 14.79$, $df = 1/62$, $p < .001$). The data suggests that successful individuals centered their discussion, during interaction, basically upon equality orientations, whereas, unsuccessful individuals were inclined to engage in more equity and agreement with other statements. No performance differences were found for miscellaneous responses.

Outcome behavior as a function of content. A total of 29 out of the 35 dyads, approximately 83%, chose an equality decision, i.e., an equal split, for their mutual agreement. The remaining 6 dyads (17%) selected an equity division of rewards. These findings are interesting in light of the fact that approximately 48% of the total number of comments during peer-interaction were equality responses while equity responses consisted of only 18% of the total number of responses. Consequently, Pearson product-moment correlations were utilized to investigate the relationship between the amount of dyadic discussion for each of the content categories and the type of decision actually agreed upon by the dyad. Results were strongest

in relating equity discussion with an equity mutual decision choice ($r = +.59$, $p < .001$). Trends towards significance were suggested by the correlation found between equality discussion and equality outcome choices ($r = +.23$, $p < .10$) and between miscellaneous discussion and equity outcome ($r = +.22$, $p < .11$). Agreement with other responses were found to be less predictable as no particular trends were indicated.

Initiator of mutual decision. Further, an attempt was made to determine which dyad member made the initial offer towards reaching a joint agreement. Chi-square analyses indicated that the performance variable did prove to have a significant effect ($\chi^2 = 10.01$, $df = 1$, $p < .002$). Successful performers made more initial offers to reach some agreement than did unsuccessful performers.

Discussion

Performance factors resulted in interesting modifications to equity theory formulations. Subjects who were told that they had done well allocated more candies to themselves than subjects who were told that they had not done well. However, the successful performers did not follow an equity allocation strategy, as might be expected, but rather elected to minimize performance differences by supporting an equality allocation strategy. Unsuccessful performers selected the equity strategy, giving themselves less, much more often than the successful performers chose the equity norm of justice. Accordingly, the successful performers would have obtained more m & m's than their dyad partner. The unsuccessful individuals were willing to take less for themselves, thus resolving the "conflict" over how to divide the rewards by following equity theory formulations of maintaining a balanced relationship between their inputs (way they performed) and their outcomes (number of m & m's received). However, the interesting

thing about this situation, is that it occurred as a consequence of the interaction phase during which an information exchange occurred whereby the expectations and desires of the other person could be made known. Prior to the interaction encounter, the desires of self-interest were found to predominate for the unsuccessful performers as performance differences were minimized. Apparently, different norms of distributive justice were seen as relevant depending on the situation in which these individuals were placed. In the absence of a relevant other attempts to maximize one's own outcomes are strongest. While, when the other must actually be confronted and dealt with, additional situational factors, in this case a direct face-to-face information exchange, indeed do become more relevant than self-interest. In this manner the behaviors of both types of individuals suggest, at the very least, a concern for, if not an understanding of, their dyad partner's perspectives as a result of the interaction. By giving his partner the same amount as he himself would receive, the successful performer did not take advantage of his presumed superiority in the situation, by virtue of his performance, and take more for himself as equity theory and research would suggest. Rather, the successful individuals displayed concern for their partners, who did not do quite as well, by suggesting that the rewards be divided equally. This is the decision strategy they held throughout the experiment. The unsuccessful performers came to strongly support the equity distribution strategy as a result of the interaction. It is only as a result of the mutual decision process that these unsuccessful performers, many with great reluctance, gave in to the preferences of the successful individuals and agreed to an equal joint decision as the way to actually divide the rewards. Therefore, it appears that the majority of subjects (both successful and unsuccessful) did have some cognitive understanding

of their dyad partner's position. The face-to-face encounters consequently seem to make the interactive relationship and the subsequent division of rewards between oneself and another clearer and more meaningful than typical allocation studies where this variable has been ignored. The validity of these propositions seem strengthened by the results of the content analysis where the majority of the successful performers' comments dealt with equality statements as the primary mode of justice while the unsuccessful ones concentrated on equity formulations of justice.

The situational context may however, provide viable alternative explanations for the obtained behavioral results. First of all, it must be remembered that the study occurred in an elementary school setting, between subjects who, though not sociometrically identified as friends, probably interacted with each other on a fairly daily basis. Therefore, the basic paradigm presented in the experimental setting may have spread by word-of-mouth to others (although subjects were requested not to talk about what occurred), resulting in an expectation to behave in a socially desirable manner. The influence of sharing, especially in a school environment may have been a contributing factor to the way the rewards were divided. Further, subjects may have thought that their teachers would be told of their allocation decisions and consequently their behavior may have reflected a certain amount of "evaluation apprehension."

An additional factor mediating the allocation decisions may have been the effects of social desirability. The successful performers may not have wanted to appear overly "greedy" by taking more for themselves while the unsuccessful individuals may similarly not have wanted to appear overly anxious to obtain something they may not have felt that they deserved.

A final alternative explanation may have been that dividing 20 m & m's

may not have been a very salient issue for subjects to spend time negotiating and bargaining over. Increasing the saliency of the reward may have led to different results. If the reward for task performance had been monetary or the allocation of grades to be sent home to one's parents, the results may have taken a different form.

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TABLE 1

MEAN NUMBER OF M&M's ALLOCATED TO ONESELF FOR EACH DECISION TRIAL AS A FUNCTION OF PERFORMANCE AND SEX.

			DECISION TRIALS		
		Sex	1 Pre-Interaction	2 Post-Interaction	3 Mutual
Performance	Successful	Males[a]	10.18	10.00	10.06
		Females[b]	10.06	10.44	10.34
	Unsuccessful	Males[a]	8.77	8.35	9.94
		Females[b]	8.56	6.89	9.66

[a] n = 17 per cell

[b] n = 18 per cell

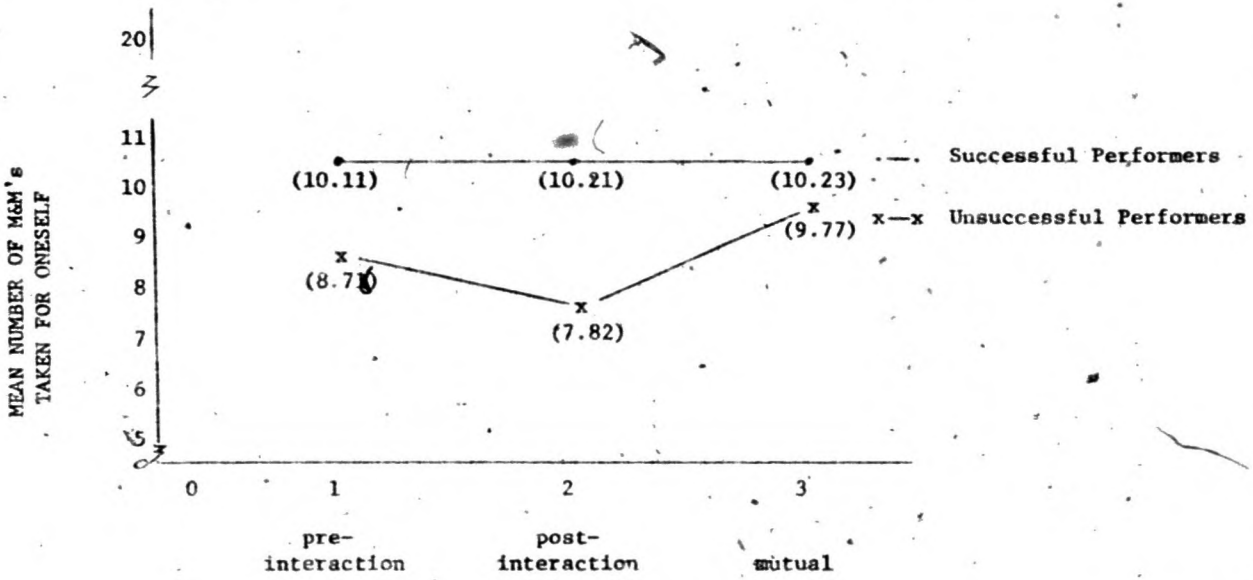

Figure 1

MEAN AMOUNT OF SELF-REWARDS ALLOCATED AS A FUNCTION OF PERFORMANCE AND DECISION TRIALS