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Judgments Concerning Zero Inputs in Equity Situations

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ABSTRACT. According to equal ratio or proportionality formulations of justice as equity, a person who contributes nothing should receive nothing. However, an inconsistency in this formulation is that equity judgments seem to be influenced by information regarding causal responsibility. It was hypothesized that within this conception of equity, when opportunities to perform inputs are curtailed, zero inputs may be disregarded in favor of best guess hypothetical inputs based on previous input history. British subjects were given vignettes in which one worker's input was 10 hr, another's was 5 hr, and a third worker's input was nothing. Information regarding the zero input worker's opportunity to work and previous work history were systematically varied, and the subjects were required to assign wages to each worker. Some support was found for the hypothesis.

THE PRINCIPLE OF JUSTICE as equity, according to researchers such as Adams (1965), Anderson (1976), and Wagstaff and Perfect (1992), demands that participants receive outcomes (O) in equal proportion to their inputs or contributions (I). If we adopt this formulation, then equity may be represented by the simple linear equation, $O_i = aI_i$ where "a" is a constant greater than zero for all individuals "*i*." Thus, in graph form, equity exists when outcomes are distributed among inputs according to a line sloping upward from left to right, in such a way that the line passes through the point of origin. However, an inevitable consequence of this equal ratio formulation is

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that, for equity to exist, a person who contributes zero inputs must be awarded zero outcomes (Wagstaff & Perfect, 1992). This outcome presents a number of problems for those who propose theories of equity. Researchers in the United States, Germany, and Britain have found that when subjects award outcomes, they take into account the contributor's responsibility for producing the inputs; hence, inputs produced by factors such as effort are favored over inputs that result from chance (Greenberg, 1980; Lamm, Kayser, & Schanz, 1983; Leventhal & Michaels, 1971; Wagstaff, in press). Indeed, Sampson (1975) and Wagstaff (in press) suggested that, in Western societies, equity assumes equal responsibility for the inputs or equal opportunity to perform them. If this suggestion is accurate, an issue that arises is what the award should be to a person who has contributed zero inputs through no fault of his or her own. One possibility might be that individuals will award outcomes or compensation based on their best estimate of how the zero contributor might have performed if he or she had been given the same opportunity as other contributors. This possibility might be tested by giving subjects differing information about the likely performance of the zero contributor if the opportunity had been given to him or her. It should be possible to influence the amount awarded by subjects to this person.

The aim of the present investigation was to test, in a British sample, the proposal that when, in a work situation, the zero contributor is not responsible for his or her performance, outcome allocations (compensation) will be made on the grounds of how the contributor might have performed, given the opportunity, based on previous work record.

Method

Sixty-four subjects (30 men and 34 women) from various occupations, mainly from the Merseyside area of the United Kingdom, were divided into three groups (A, $n = 21$; B, $n = 21$; and C, $n = 22$) with approximately equal numbers of men and women within each group. The mean ages were 39.81 years ($SD = 15.12$), 38.67 years $SD = 16.821$, and 33.43 years ($SD = 13.13$) for Groups A, B, and C, respectively; a one-way analysis of variance (ANOVA) indicated no significant differences in ages between groups.

The subjects were invited to participate in a research project investigating attitudes to pay. They were instructed to read through a vignette with two cases and to write down how much they would award each of the workers in each case.

Group A received the following vignette. "Alex, Bobbie and Chris all worked for the same company. They were all single, had no dependents, were healthy and lived on comfortable incomes. One Saturday they all went to work to earn some overtime bonus. There was plenty of work to do. The

mutually agreed pay rate was £10.00 per hr, and the standard Saturday shift was 5 hr."

The subjects in Group A then read the following two cases and after each decided how much they would award to each worker in each case (i.e., three awards for each case; six responses in all). "Case 1: Alex worked 10 hr. Bobbie worked 5 hr. Chris couldn't be bothered to work and sat in the canteen where it was warm and comfortable, drank tea and read a book." This represented the equal opportunity zero input condition. "Case 2: Alex worked 10 hr. Bobbie worked 5 hr. Through no personal fault, Chris got stuck in a lift at the start of the shift and wasn't able to get out." This was the no opportunity, no information on work history, zero input condition.

Group B received exactly the same information as Group A regarding Cases 1 and 2 (equal and no opportunity), except that the following was added to the account in Case 2: "For the past year, on previous Saturdays Chris couldn't be bothered to work, and sat in the canteen where it was warm and comfortable, drank tea and read a book." This was the no opportunity, poor work record, zero input condition.

For Group C the information was again identical to that given to Group A, except that the following was added to Case 2: "For the past year, on previous Saturdays Chris had worked 10 hr." This was the no opportunity, good work record, zero input condition.

Results

No age or gender differences were found, so these variables were excluded from the rest of the analysis.

Case 1: Equal Opportunity

For Group A the mean awards in pounds sterling for Workers A, B, and C (inputs 10, 5, and 0 hr, respectively) were 98.81 (SD = 12.44), 50.00 (SD = 0.00), and 4.76 (SD = 15.04), respectively. For Group B the means were 97.62 (SD = 13.47), 48.81 (SD = 5.46), and 2.62 (SD = 10.91); and for Group C, 98.86 (SD = 12.14), 50.00 (SD = 0.00), and 3.41 (SD = 10.84). Three Friedman's nonparametric one-way analysis of variance (ANOVAs) (2, ns = 21, 21, and 22), on the responses within each of the three groups, followed by Wilcoxon signed ranks tests (ns = 21, 21, and 22), indicated highly significant differences between the awards given each of the three workers ($p < .001$ in all cases). Three Kruskal-Wallis ANOVAs (2, N = 64) indicated no significant differences between the three groups in the amounts awarded to each worker. The modal and median scores were exactly as predicted by equal ratio equity for all three groups, that is, £100, £50, and £0.00 for the 10, 5, and 0 hr inputs, respectively. In Case 1, therefore, where there was

equal opportunity, in all three groups the majority response was to follow the rule of equal ratio equity by awarding zero outcomes to zero inputs (88% of the subjects did this).

Case 2: Unequal Opportunity

For Group A (no information on past history for zero input worker) the means for the three workers were 96.43 (SD = 16.37), 50.00 (SD = 0.00), and 29.17 (SD = 23.54), respectively. For Group B (zero work in past from zero input worker) the means were 97.62 (SD= 13.47), 48.81 (SD = 5.46), and 20.24 (SD = 24.52); and for Group C (average 10 hr work in past from zero input worker) the means were 98.86 (SD = 12.14), 50.00 (SD = 0.00), and 56.82 (SD = 37.94). The median scores for the three workers in Case 2 (Groups A, B, and C), were respectively, 100, 50, and 50; 100, 50, and 0.00; and 100, 50, and 50. Three Friedman's nonparametric one-way ANOVAs (2, ns = 21, 21, and 22) followed by Wilcoxon signed ranks tests (ns = 21, 21, and 22) indicated that for Case 2 (unequal opportunity), within each of the three groups, there were highly significant differences in the awards given to the three participants ($p < .001$), with the exception of Group C, in which there were no significant differences in the amounts awarded to the zero input worker with a good work history and the worker who had worked for 5 hr. Three Kruskal-Wallis ANOVAs (2 , N = 64) indicated no significant differences between the three groups in the amounts allocated to the 10-hr and 5-hr input workers, but a significant effect for the 0-hr input worker; further Mann-Whitney U tests (ns = 21, 21, and 22) indicated that the 0-hr input worker with a good work history (Group C) was awarded more than the same worker in the other two conditions (Groups A and B) ($p < .01$). Although there was a trend for the worker with the bad record to be awarded less than the worker with no available work record, these two conditions did not differ significantly from each other. Wilcoxon tests (ns = 21, 21, and 22) also indicated that within each group there were no significant differences in the amounts awarded to the 10-hr and 5-hr input workers between the two cases (equal and unequal opportunity for zero contributor); however, in all groups significantly more ($p < .01$) was awarded to the 0-hr input worker in Case 2 (unequal opportunity) than in Case 1 (equal opportunity).

Discussion

The results lend some support to the general prediction that under conditions of equal opportunity, persons who choose to contribute nothing will be awarded zero outcomes. The basic vignette used here, however, was specifically designed so that the partners or contributors were clearly provided with the basic necessities of life, they had no dependents, and there were no dis-

parities in need. The rationale for designing the vignettes this way was that if, for example, by receiving nothing in a material sense, someone had starved, this condition might have been construed as a very negative rather than zero outcome. Also, if by doing nothing a person had neglected a child, this lack of action might have been construed as a very negative input. Consequently, Wagstaff and Perfect (1992) suggested that, within equity, zero should not necessarily correspond to doing or receiving nothing in a material sense. Rather, zero might better be construed as a neutral value within a family of positive and negative values. Hence a relevant distribution might set certain necessities of life as the neutral point for zero outcomes, and the performance of basic duties as the neutral point for zero inputs; without this proviso subjects might prefer a linear solution with an intercept greater than zero (see Harris, 1980). Moreover, subjects may modify outcomes in equity situations to account for differences in need (Elliott & Meeker, 1986); thus, if contributors' needs are disparate, a zero-input contributor may receive a compensatory award.

The results also suggest that under conditions of unequal opportunity, a worker accidentally prevented from contributing will receive outcomes greater than zero, and these outcomes will be influenced by previous work history. Hence, in the present study, the person prevented from working, but with a good work record, was awarded more than a zero-input contributor who chose not to work or was prevented from working and had no work record, or a poor one.

There is only partial support, however, for the more specific hypothesis that allocators will make awards to the accidental noncontributor on the basis of how that person might have performed in a hypothetical situation of equal opportunity. The person prevented from working but having a record of zero work input was not awarded significantly less than the worker whose record was not known, and that worker was awarded more than one who chose not to work. Nevertheless, the distribution of awards to the zero-input worker for Case 2 (unequal opportunity) is noteworthy. In Group A (no work record available), although on average the subjects awarded less to the zero-input worker than to the others, the median and modal responses (52% of subjects) were to award the zero contributor £50 that is, the same as the worker who had put in 5 hr of work. No subject awarded more; 33% awarded zero. In the absence of relevant information, £50 could plausibly be construed as awarding on the basis of an average work record. In Group B (poor or zero work record), although the zero-input worker was, on average, awarded more than one who clearly chose not to work, the median and modal awards were, nevertheless, still zero (57%)—that is, based on past history, the usual contribution of the zero contributor. In Group C (good 10-hr average work record), however, although the median award was £50, the modal response was to award the zero-input partner £100 (36% of subjects

did this), whereas no subject in Group A or B awarded the zero-input worker more than £50. On past record, £100 is what the zero-input contributor would have received had he been given the opportunity to work as normal. Only two subjects, one in Group A and one in Group C, attempted to resolve the issue by distributing outcomes equally among the three workers (in both cases they awarded all three £50 each).

Although the subjects in this study clearly disagreed as to how much to award a zero-input contributor whose lack of work seemed to be related to circumstances beyond his control; nevertheless, past work record was taken into account to some extent, and at least one third of the subjects gave an award consistent with a strict hypothetical input strategy in compensating the zero-input contributor.

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