JOURNAL OF EXPERIMENTAL SOCIAL PSYCHOLOGY 28, 491–522 (1992)

Allocating Scarce Resources: A Contingency Model of Distributive Justice

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Received March 4, 1991

Two experiments tested predictions derived from a contingency model of distributive justice that identifies four interrelated categories of determinants of people's allocation decisions: (1) abstract distributive norms; (2) perceived attributes of claimants; (3) resource constraints; and (4) attributes of judges. The model posits that allocations of public resources (e.g., health care or welfare) engage in two types of appraisal: one focused on the adequacy of the resource pool, and the other on the causes of claimants' needs. When resources are inadequate, attributional analysis assumes central importance, and need and efficiency emerge as key distributive values. If claims arise from internal-controllable causes, allocators experience anger toward claimants, devalue their deservingness, and withhold resources. If claims arise from other causes, distributive norms become direct predictors of deservingness and allocation. The experiments manipulated the causes of need, the severity of need, and the likelihood of effective assistance under low and high scarcity (Study I) and no scarcity (Study II). Under scarcity, allocators were much more likely to deny aid to claimants who were responsible for their predicament. Need and efficiency emerged as joint predictors of allocating aid to claimants who were not responsible for their predicament. Politically conservative allocators withheld resources from those personally responsible for their needs regardless of both severity of need and likelihood of

The authors express their gratitude to John Levine, Charles McGuire, Barbara Mellers, David Messick, Caryl Rusbult, Howard Tokunaga, and our anonymous reviewers for thoughtful comments on earlier drafts of this paper. All correspondence and reprint requests should be directed to Linda J. Skitka, Department of Psychology, Southern Illinois University, Edwardsville, IL 62026-1121; e-mail sm01@siuemus.bitnet.

0022-1031/92 $5.00

...effective helping, even when there were sufficient resources to satisfy all claimants, whereas liberals tended to provide resources to all claimants.

Who deserves government help in securing health care or in finding a home, or a job? In a world of finite resources, policymakers must frequently weigh competing claims on the public purse. They are expected to represent the "community's interest" and to distribute aid "fairly." However, such nostrums tell us little about the decision rules people actually use in allocating aid. One widely invoked principle is "to each one's due," or as Hospers (1961) suggests, "getting what one deserves; what could be simpler?" (p. 433). A more appropriate question is: What could be more complex?

Psychologists have identified an enormous array of determinants of perceived deservingness and allocation preferences, including equity, need, and equality. They have also found support for each approach to distributive justice in allocations of wages and rewards (e.g., Deutsch, 1985; Lerner, 1975; Leventhal, 1976; Mikula, 1980; Walster, Berscheid, & Walster, 1976). It is less clear, however, whether these theories can be extended to predict allocations of public resources, such as health care or welfare. For example, imagine a drunk driver injures a child walking across the street in a crosswalk, and then crashes and seriously injures himself (cf. LeGrand, 1987). Who deserves priority to scarce emergency care, the child or the driver? Would a doctor who gave priority to the child be acting unjustly if the driver were suffering more than the child? Or would most people think that such an allocation of health care services would, in some sense, be just?

We propose a 4-stage contingency model of allocation decision making that builds directly on past efforts (see Fig. 1). The first stage involves assessing resource availability. If there are sufficient resources to help everyone, the decision-making process ends, and the allocator aids all claimants. If resources are scarce, allocators move to the second stage: attributional analysis. If claimants are perceived to be personally responsible for their predicament (an internal-controllable attribution), allocators consider whether there is a match between the number of personally responsible claimants and the number of claimants who cannot be helped because of resource constraints. If there is such a match, the decision-making process stops, and allocators distribute aid to all but personally responsible claimants. If there is not an exact fit between resource constraints and the number of personally responsible claimants, the allocator appraises claiments' relative deservingness: Are some claimants needier than others? Would providing aid to some claimants be more effective than providing it to others?

Stage four involves setting priorities among claimants as a joint function of their cause of need and relative deservingness. When there are more resources than there are personally responsible claimants (low scarcity), people will deny aid to those claimants with the lowest overall priority—internal-controllable claimants with less than high need and efficiency. When there are fewer resources than there are personally responsible claimants (high scarcity), people will deny aid to all personally responsible claimants. However, they will have to deny aid to other claimants as well. Claimants with other causes of need will be denied aid to the extent that they have less than high need and efficiency.

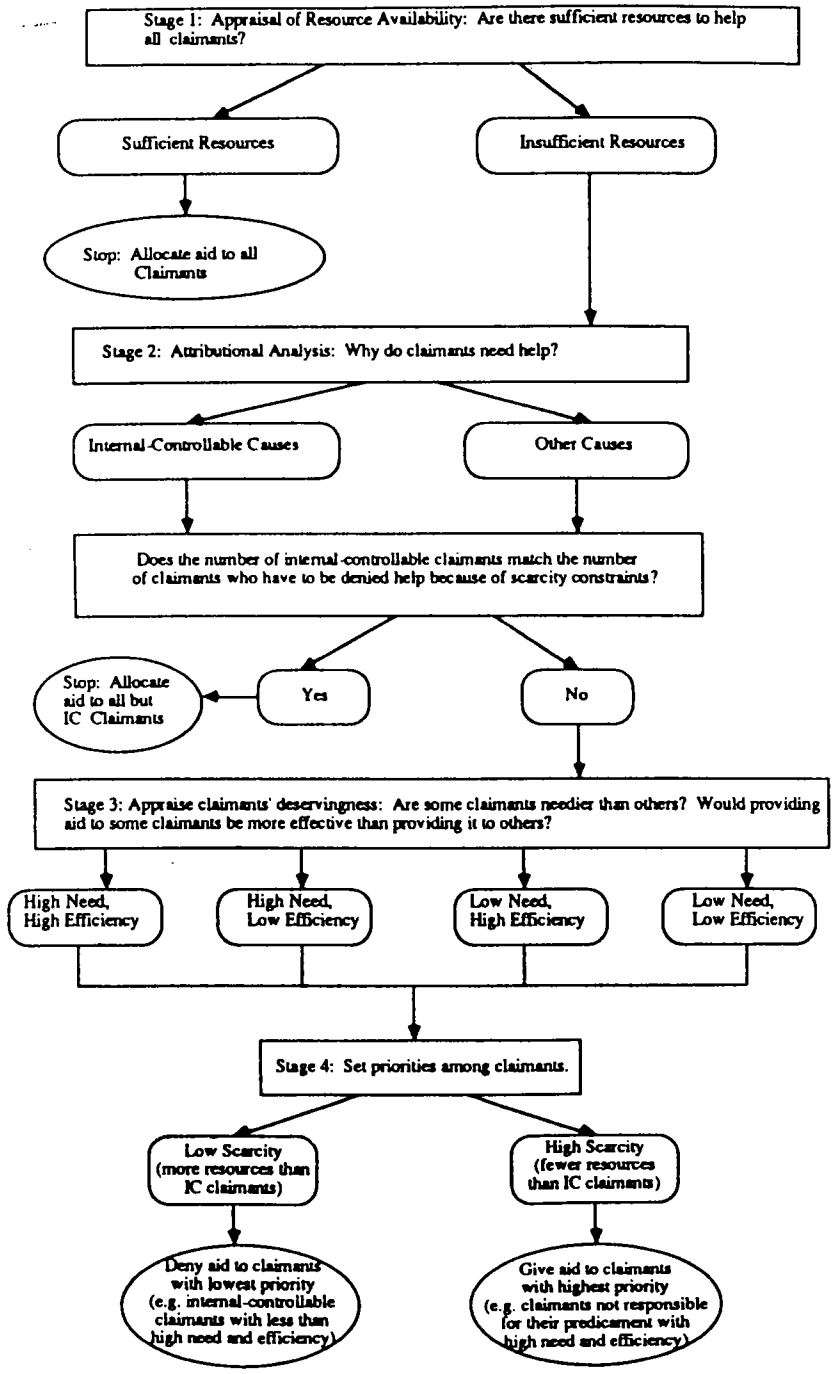
We draw on four broad but interrelated categories of research to provide theoretical support for this model: (1) distributive norms for assessing deservingness, (2) attributes of the claimant, (3) ideological and personality attributes of the allocator, and (4) resource constraints on the capacity of societies to help the less fortunate.

Distributive Norms

Homans (1961) and Walster, et al. (1976) extended a central thesis of Aristotelian ethics: fairness requires dividing outcomes to reflect the relative merits of the participants in an exchange. Although considerable research is consistent with this basic proposition, equity theory is of limited predictive value in complex political-economic settings in which there are sharp disagreements over what counts as an "input" and even over the morality of factoring such information into one's decision making calculus. Who, for example, has a more persuasive claim on access to scarce medical technology: a brilliant 45-year-old scientist who drinks heavily but can pay for his care, or a 6-year-old child of a welfare family who suffers from chronic liver failure? Equity theory offers little guidance here.

Current theories focus on additional distributive principles, such as equality, need, and efficiency. Which principle is activated depends on the social context and goal orientation of the allocator (e.g., Deutsch, 1985; Leventhal, 1976; Leventhal, Karuza, & Fry, 1980; Mikula, 1980), the relationship between the allocator and recipient (e.g., Lerner, 1977), and the personality and political ideology of the allocator (e.g., Major & Deaux, 1982; Rasinki, 1987).

The goal-orientation approach of Leventhal (1976) leads to a number of testable hypotheses. Leventhal argues that allocators determine outcomes by a weighted averaging formula that includes contributions, need, equality, and other distributive norms. The weight attached to each distributive norm varies as a function of the goal orientation of the social system. The goals of providing access to health care and public assistance are based on need norms (the "safety net" of welfare state capitalism). The aim is to minimize suffering due to illness, mishap, or extreme poverty. However, if health care or public assistance is limited by technology or budgetary constraints, efficiency (minimization of waste) will also be



weighted heavily in perceptions of deservingness and allocation decisions (cf. Leventhal, Weiss, & Buttrick, 1973).

Although multivalue contingency theories of justice of this sort organize a wide range of findings, there is no guarantee such theories give the right weights to competing values or capture the conditions under which competing values are primed or activated. For instance, investigators have given considerable attention to both equality (e.g., Leung & Bond, 1984; Tinsdale & Davis, 1985), and need (e.g., Lamm & Schwinger, 1980, 1983; Murphy-Berman, Berman, Singh, Pachauri, & Kumar, 1984), but relatively little to efficiency (see however, Leventhal et al., 1973; Taormina & Messick, 1983). This neglect is surprising, given the prominence of efficiency as a distributive norm in economic theory (e.g., Okun, 1975).

We also know little about how well distributive norms apply to the allocation of nonmonetary resources. Although relationships outside of the employee/employer dyad have been examined, resources besides money are studied only rarely (see Foa & Foa, 1976). And, importantly, are distributive norms *sufficient* to explain allocation preferences in social-political domains?

Attributes of the Claimant (Locus of Responsibility)

Attribution theorists maintain that arousal of normative pressure to help others depends critically on attributions of responsibility. Weiner (1986), for instance, has specified how cognitive appraisal and affect influence decisions to help. According to this 3-stage model, initial explanations (such as "the child needs emergency medical attention because while walking in a crosswalk, she was hit by a car" or "the driver needs help because he was driving under the influence of alcohol") are processed according to the following sequence: (1) causal analysis (attribution of cause along the dimensions of locus and control); (2) affective arousal (different explanations trigger different affective reactions); and (3) behavioral decision (in this case, to provide or withhold resources).

Linkages between causal analysis, affective arousal, and behavioral decision have been demonstrated in several domains, including achievement, helping, and aggression (see review in Weiner, 1986). Experimental research on attributions and helping point to one clear-cut conclusion: People are least likely to help victims whose need is attributed to internal-

FIG. 1. A 4-stage contingency model of allocation. Depending on resource scarcity and the match between resource constraints and the number of personally responsible claimants, allocators go through 1 to 4 stages in deciding how to allocate public aid to a pool of claimants. Personality and ideological variables moderate stages of analysis: Conservatives will be more likely to focus on personal responsibility (Stage 2) and liberals will be more likely to focus on distributive norms (Stage 3).

controllable causes—such as carelessness, laziness, greed, and self-indulgence (e.g., Reisenzein, 1986; Weiner, 1986).

Additional evidence suggests that reactions to needy others are mediated by affect. Attributions of personal responsibility arouse more negative and less positive affect in perceivers (e.g., anger and hostility versus sympathy and pity; Meyer & Mulherin, 1980; Weiner, 1980). These and other studies reveal close connections between cognitive appraisal, affective arousal, and intentions to help (e.g., Batson, Duncan, Ackerman, Buckley, & Birch, 1981; Reisenzein, 1986).

Although there are strong parallels between these studies of helping and distributive justice settings that activate need as a distributive norm, there are also important distinctions: (1) Allocators do not make personal sacrifices to help (they are spending other people's money on other people); (2) Helping someone is a foregone conclusion in allocation contexts; the question is how much aid to provide, and to whom; and (3) Helping typically involves higher potential risk for the provider than allocating. In short, we should not assume everyone considers attributional information *morally* relevant in fairly allocating public resources—a point that brings us to individual differences.

Personality and Ideology of the Allocator

Personality and ideological variables moderate allocation preferences. For example, belief in the Protestant Ethic—that hard work will ultimately be rewarded—is associated with skepticism toward the value of equality, a preference for allocating outcomes according to merit and a tendency to attribute behavior internally to people rather than externally to the system (Garrett, 1973; Greenberg, 1978; MacDonald, 1971).

These individual differences in allocation preferences are rooted in sociopolitical ideology. Drawing on the findings of Carroll, Perkowitz, Lurigio, and Weaver (1987), we expect two clusters of personality and ideological variables to shape allocation preferences: (1) Cognitive conservatism (CC: a combination of political conservatism with personality measures of dogmatism, authoritarianism, and internal locus of control) and liberal humanism (LH: a combination of liberal ideals and the principled stage of moral development). We also expected personality and ideology to moderate the cognition-affect-behavior link. High CCs should experience especially negative affect toward, and withhold resources from, claimants whose needs are due to internal, controllable causes, whereas high LH's should be influenced less by cause of need than by need itself. The moderating effects of personality/ideology should be most evident under no scarcity, when allocators are less constrained by the situation.

Resource Constraints on the Capacity to Provide Aid

Resource constraints pose painful problems for allocators. Scarcity requires "winnowing" the competing claimants to determine who shall receive assistance (Ross & Ellard, 1986). Scarcity also means that justice defined as equality or equity is often beyond our grasp. If everyone is given an equal share, or a "share proportional to his claims and desert," then some, perhaps all, will be pressed beneath a minimally acceptable level (Greenberg, 1981; Rescher, 1966). For example, imagine it takes 3 mg of Drug X to cure an otherwise lethal disease. What if two people contract the disease, and only 4 mg of the drug are available? An equal or equitable distribution might be "just," but would save neither life. Consistent with this reasoning, research indicates that equity becomes less important as scarcity increases (e.g., Coon, Lane, & Lichtman, 1974; Lane & Messe, 1972). Attention is hypothesized to shift to need and efficiency and away from equity and equality (Greenberg, 1981). Under scarcity, allocators try to minimize both suffering (a need value) and waste (an efficiency value).

Although receiving some theoretical attention, empirical data on allocations under scarcity are almost nonexistent. Anecdotal evidence, however, suggests that as scarcity increases, there is a parallel increase in concern for efficiency. For example, the World War I concept of *triage* advocates allocating medical attention to those who have a high probability of being saved and withholding treatment from those expected to die, or from those who will recover without medical attention (Ehrlich, 1968). Under scarcity, the values of need and efficiency often conflict. Giving priority to the most urgent claim is often not the most efficient use of resources.

In addition to making need and efficiency more salient, scarcity may motivate cognitive appraisal. Under low scarcity, there is less reason to engage in detailed analysis. Assuming most people are cognitive misers (cf. Fiske & Taylor, 1991) who seek simple solutions to difficult decisions, allocators may simply treat claimants as approximately equal when it is possible to satisfy everyone. But scarcity may promote attributional analysis of responsibility as allocators search for reasons to deny some claims, but not others.

The Present Studies

The experiments reported here test the 4-stage model of allocation preferences. Study 1 investigated allocation preferences under low and high scarcity and Study 2 examined allocations under no scarcity. To examine the generalizability of results across operationalizations of key variables and resources, both studies included three resource domains:

AZT for AIDS victims, organs for people needing organ transplants, and low-income housing for the poor.

STUDY 1

We organize our hypotheses into two classes: first-order and second-order questions. It is possible to test the latter only if support is found for the former.

First-Order Questions

Hypothesis 1

Does attribution of responsibility shape perceptions of *fair* access to scarce resources? Whereas previous research demonstrates that the Cognition-Affect-Action model predicts individual decisions to give or withhold help, it is not clear whether ordinary people consider causal attributions morally relevant or appropriate in a broader societal context. Support for the first assumption of the model (that insufficient resources motivate attributional analysis) will be sought from converging evidence on allocators' reactions to targets who vary in why they need aid. Specifically, locus and control should interact, with internal-controllable reasons for need consistently rated as least deserving, arousing the greatest negative and least positive affect and prompting the least aid.

Hypothesis 2

Is the distributive norm of need primed in public aid domains? And does scarcity activate a concern for efficiency? We predict that concerns for need and efficiency will be higher than alternative values, such as various operationalizations of equality (e.g., equal opportunity); the queue (e.g., first come, first served); and merit (e.g., contributions to society). The allocation norms used were derived from recurring themes in the psychological literature as well as from public policy debates about access to scarce medical technologies.[1]

Second-Order Questions

Assuming locus of causality plays an important role in allocational decisions, what is the relative role of attributions and distributive norms in selecting recipients of scarce resources? Study 1 examined allocators' decisions when there is an imperfect match between the number of personally responsible claimants and the number of claimants who must be denied assistance because of scarcity constraints. For half of the subjects, there were more resources than personally responsible claimants (low scarcity); for the other half of the subjects, there were fewer resources than personally responsible claimants (high scarcity).

[1] Most of these distributive norms have been neglected in psychological research—a legacy of the dominance of equity theory. However, these distributive values are widely recognized in philosophy, economics, and political science. This list is not presumed to be exhaustive, but does represent the range of distributive concerns that arise in debates over the allocation of public resources.

Hypothesis 3

Under low scarcity, allocators are predicted to assist all claimants who are not personally responsible for their predicament. Only internal-controllable claimants with less than high need and efficiency are predicted to be denied assistance under these conditions.

Hypothesis 4

Under high scarcity, allocators are predicted to deny aid to all internal-controllable claimants, regardless of their relative need or efficiency. But because allocators cannot aid all the remaining claimants, only those with the highest need and efficiency will receive help.

Hypothesis 5

Subjects under low scarcity will report that their decisions were determined primarily by the reasons why people need aid. In contrast, subjects in the high scarcity condition will report that their decisions were determined more by complex combinatorial patterns of information—i.e., by reasons why people need aid, need and efficiency taken together—than by any of these sources alone or in lower-level combinations. In other words, we expect movement toward self-reported cognitive complexity in decisions made under higher scarcity.

Hypothesis 6

These previous effects will be qualified by the political ideology and cognitive style of the judge. High conservatism will be related to stronger tendencies to: (a) attribute personal control to all claimants; (b) have negative affective reactions to claimants with internal-controllable causes of need; (c) devalue the deservingness of claimants with internal-controllable causes; (d) choose them less frequently to receive help; and (e) weight reasons why people need help and efficiency as more important determinants of choice. People scoring high in liberalism, on the other hand, are expected to be more likely to (a) have positive affective reactions to all claimants and (b) perceive all claimants to be deserving of assistance.

Method

Subjects

One hundred and ninety-eight undergraduates at the University of California, Berkeley completed questionnaires in partial fulfillment of class requirements for an introductory psychology class.

Design

The experiment was a mixed factorial design. There were five within-subject factors: Resource Domain (Organs, AZT, Housing), Locus (Internal, External), Control (Controllable, Uncontrollable), Need (High, Low), and Efficiency (High, Low). Two variables were manipulated as between-subject factors: Scarcity (High, Low) and Target Sexual Orientation (relevant only to the AZT domain: Homosexual, Heterosexual). Six different orders of resource domain were presented.

Primary dependent measures were: (a) ratings of targets' relative deservingness for an available resource, (b) how unfair it would be if a target did not receive an available resource, (c) affective ratings of targets seeking aid as a function of locus and control, and (d) the amount of resources committed to claimants as a function of locus, control, need, and efficiency.

Rationale for the Design

The pros and cons of between- versus within-subject designs are hotly debated. In this case, we chose a primarily within-subject design because we were interested in how people evaluate a pool of applicants competing for insufficient public resources. It follows that subjects need information on the entire population of applicants. Many real world allocation decisions take on within-subject forms (e.g., a hiring committee has access to all applicants' files; a medical ethics committee has the files of all patients waiting for organ transplants).

Procedure

Overview

Subjects participated in a study of "how people make fair allocation decisions." Their task was to fill out a number of confidential questionnaires. Rather than reveal their names, subjects picked a 5-digit sequence of numbers to uniquely identify their materials. Subjects completed parallel questionnaires within each resource domain: a total of three questionnaires (organs available for transplantation, AZT for AIDS victims, and low income housing for the poor) in one of six random orders. The first section of each questionnaire assessed information relevant to the first-order questions, and the second section collected information relevant to second-order questions. Finally, subjects completed a separate questionnaire containing the personality and attitudinal measures last.

First-Order Questions

Each domain's questionnaire was prefaced with basic background information. For example:

> AZT is a drug to treat Acquired Immune Deficiency Syndrome (AIDS). AZT is not a cure for AIDS, but it does lengthen the life span of those with AIDS. People who have AIDS hope that AZT treatment will lengthen their lives until a cure is developed.

Subjects also learned that not everyone who wants and needs AZT (or an organ transplantation, or low income housing) can receive it because there is a limited supply.

Allocation preferences. Each questionnaire then assessed subjects' perceptions of the appropriateness of a number of allocation procedures. Subjects rated these options on an appropriateness scale ranging from −8 (extremely inappropriate) to +8 (extremely appropriate). For example, within the AZT domain:

1. AZT should be allocated to people on the basis of their medical need; those who are the most severely ill should be given priority (*Need*).
2. People should be given equal opportunity to receive available AZT; perhaps by a lottery or by drawing straws (*Equal Opportunity*).
3. People should be given priority on the basis of how long they have been on a waiting list, irrespective of other factors (*Queue*).
4. People should be given priority on the basis of how effective AZT will be for them, since the probability of AZT successfully prolonging their life is higher (*Efficiency*).
5. Priority for AZT should be given to the highest bidder; those people who can afford AZT treatment should be given first priority (*Market*).
6. Priority for AZT should be based on the contributions people have made to their community: those people who have made important contributions to the well being of the community should be given higher priority than people who have not contributed to the community in any important way (*Merit*).

Parallel allocation procedures were rated for appropriateness within the organ and low-income housing domains.

Attributions of causality and affect. Subjects were next asked to rate how they felt about each claimant as a function of locus and control[2] of their need for resources. For example, within the organ domain, the conceptual manipulations of locus and control were as follows:[3]

[2] We modeled our manipulations of controllability and externality after Weiner's (1986) discussion on pp. 49–50. He argued that if we always conceive of controllability from the target perspective (e.g., the successful or failing person), external causes will always be "by definition . . . uncontrollable, for they are not willfully changed by the actor." He notes, however, that because people perceive many external causes as controllable (e.g., teacher bias, unemployment), controllability implies not only "controllable by me" but also "controllable by anyone." In addition, in the attribution of success/failure literature, external-controllable causes usually involve negligence of an external actor (teacher bias, lack of help from unwilling friends; again, see Weiner, 1986; 1990 for review). Although our operationalizations of locus of responsibility are consistent with Weiner's theory and operationalizations of locus of control in the attribution research literature, it should be noted that these manipulations do indeed imply a degree of negligence by the external actors (see also Shaver, 1985).

[3] Because of space limitations, examples of manipulations are presented rather than manipulations across all three resource domains. A complete set of variable manipulations is available from the first author.