

## Positive versus Negative Framing Affects Justice Judgments

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*This research demonstrates the effect of framing on justice judgments. Presenting identical allocation situations in different modes of accomplishing the resource allocation, resulting in either positive (benefits) or negative (harms) outcomes, affects justice judgments. Two independent studies revealed that participants judged non-egalitarian principles (i.e., merit, ability, effort, need, and tenure) as more just when allocation of a resource was presented in the positive framing manner (e.g., to deliver goods or to withhold bads) relative to presenting the exact same resource allocated in a negative framing manner (e.g., to deliver bads or to withhold goods). It is suggested that the way resource allocation is framed evokes favorable (or unfavorable) associations that cause people to judge the situation as more (or less) just.*

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**KEY WORDS:** framing; justice judgments; resource allocation; positive versus negative modes of allocation.

Issues regarding the just distribution of social resources engage many scholars in philosophy and the social sciences, and different theories champion different distributive principles (for a taxonomy of theories, see Sabbagh, 2002). The empirically oriented social science approaches are concerned with examining the justice principles that are adopted by people in everyday situations (Elster, 1995; Sabbagh, 2002).

The normative tradition of Miller's Theory of Justice (Miller, 1976) and the multi-principle approach (Deutsch, 1985; Törnblom, 1992) identify three principles as central to the concept of distributive justice: *equity, equality,*

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and *need* (Deutsch, 1975; Miller, 1999). These principles dictate the use of different rules of allocation. To achieve an equitable allocation, one can distribute resources on the basis of ability, effort, or merit (Alwin, 1992; Lewin-Epstein *et al.*, 2003). To ensure an equal distribution, one can dictate equality of results (“to each the same”) or offer equality of opportunities. The principle of need (“to each according to his or her needs”) is usually achieved by distributing according to individuals’ needs, which may be medical, financial, etc. (Sabbagh, 2002).

The main line of empirical research has investigated different sociological and psychological characteristics that are related to the application of justice principles. One line of investigation examined the relationship between positive and negative resource allocations and how they affect people’s justice judgments. Following an extensive review of eleven studies published between 1977 and 1988, Törnblom (1988) criticized research on justice judgments regarding positive and negative outcome allocations as lacking a theoretical framework, clear taxonomy, and operational definitions. Consequently, a comparison of the results from all studies seemed impossible, since different studies that used different terminologies obtained, unsurprisingly, different and inconsistent results (Törnblom, 1988, pp. 143–145). In order to enable more systematic research, Törnblom proposed a conceptual framework consisting of four dimensions of justice allocation: *Sign of outcome allocation* (i.e., positive and negative); *Type/Intent/Result of outcome allocation*, (e.g., distributions and retribution); *Mode of accomplishing outcome allocation* (i.e., delivering, withholding, or withdrawing) and *Type of outcome* (i.e., benefits or harms) (see Fig. 1).

Since Törnblom’s review, several other studies have continued to explore the relationship between positive and negative resource allocations and how they affect people’s justice judgments (van Dijk *et al.*, 1999; Törnblom and Ahlin, 1998; Sabbagh and Schmidt, 1998). For example, in their exploration of the structure of positive and negative justice judgments, Sabbagh and Schmidt (1998) presented participants with hypothetical situations that differed in their social resource, sign of resource outcome, and social context, and asked them to evaluate the justness of three principles of justice (equality, need, and equity). The results suggested that people’s judgments of each of the three justice principles tend to be more similar for negative outcomes and more distinct for positive ones. Thus, the sign of the resource outcome seems to affect justice judgments, as people behave differently when they wish to achieve “goods” as opposed to when they wish to avoid the receipt of “bads.”

This differential behavior in positive versus negative outcome allocations might lead people to perceive different justice principles as more or less fair than others. Using the conceptual framework illustrated in Fig. 1, Törnblom and Ahlin (1998) presented participants with a situation describing a nuclear

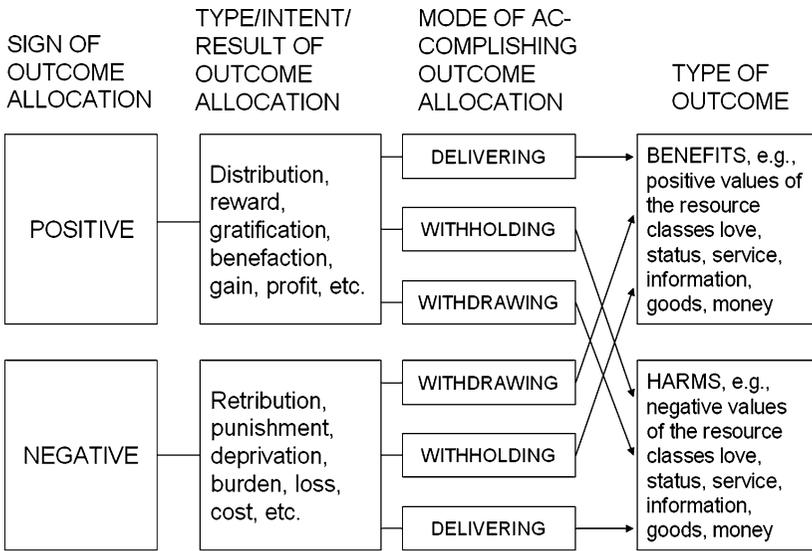


Fig. 1. Conceptual framework for positive and negative outcome allocation (adapted from Törnblom, 1988).

test that could result in danger from radiation exposure. Three alternative options representing allocation of information about the possible danger based on equity (to the army personnel who contributed time and effort), need (to children and the elderly), or equality (to everyone) were formulated. They were presented either as resulting in a benefit (positive outcome): delivering a positive resource (providing information) or withholding a negative resource (not providing misinformation), or as resulting in harm (negative outcome): delivering a negative resource (providing misinformation) or withholding a positive resource (not providing information). The results showed that in the positive outcome condition, equality (giving the information or withholding misinformation from everyone) was considered the fairest, followed by the need principle and the equity principle. In the negative outcome condition, need was considered the fairest, followed by the equality principle and the equity principle. However, Törnblom and Ahlin (1998) stated that evaluating the four different situations was like comparing “apples and oranges” (p. 439) and that it is impossible to compare the ratings of a “sour apple” to a “sweet orange” and vice versa.

Indeed, a clear examination of justice judgments of positive and negative outcome allocations is still out of reach. Most studies have found that in positive outcome situations people often preferred the equity over the equality principle, while in negative outcome situations the equality principle was perceived as more fair (Brickman *et al.*, 1981; Elster, 1989; Goodwin,

1992; Kayser and Lamm, 1980; Törnblom and Jonsson, 1985). Nevertheless, in other studies people preferred the same principles for both positive and negative outcomes (e.g., Lamm *et al.*, 1983 and the review in Törnblom, 1988, p. 15). Moreover, these studies cannot be easily compared because they used different theoretical and operational definitions of the outcomes, allocation situations, and modes of allocation (Törnblom, 1988).

A clearer examination is enabled when using Törnblom's (1988) conceptual framework and limiting the number of dimensions examined in each study (Törnblom, 1988; Törnblom and Ahlin 1998). For example, by holding constant the sign of outcome allocation and the type/intent/result of outcome allocation, it is possible to manipulate the mode of accomplishing outcome allocations resulting in either positive or negative outcomes. Presenting a situation of allocating a positive outcome (goods) by delivering it to some and withholding it from others enables a comparison between justice judgments in allocation of benefits versus harms. In order to ensure that the comparison is indeed between justice judgments in allocation of benefits versus harms, it is essential that the allocation situation differ in one dimension only (e.g., a comparison between sweet and sour apples), keeping the remaining dimensions identical (e.g., a comparison between sweet apples and sour oranges). For instance, the distribution of profits of a joint project can be framed as a question of to whom the profits should be delivered (resulting in benefits to those who receive it) or as an issue of from whom the very same profits should be withheld (resulting in harms to those denied).

This framing paradigm is extensively used in the context of judgment and decision making (for a detailed review, see Levin *et al.*, 1998). Tversky and Kahneman (1981) were among the first to introduce the systematic reversal of preferences that people exhibit in different framing of problems, contingencies, or outcomes. In their Asian disease problem, Tversky and Kahneman (1981) presented the same situation in either a positive or negative frame. Participants were told that the USA was preparing for the outbreak of an Asian disease, which was predicted to kill 600 people. They were then presented with two options for combating the disease, and asked to choose between them. When framed in positive terms of saving lives, the two options consisted of: 200 people will be saved for certain, contrasted with one-third of a chance that 600 people will be saved and two-thirds of a chance that no one will be saved. When framed in negative terms of lives lost, the two options consisted of: 400 people will die for certain, contrasted with one-third of a chance that no one will die and two-thirds of a chance that 600 people will die. Participants tended to choose the option "200 saved for certain" when the problem was positively framed and the alternative option "one-third of a chance that no one will die and two-thirds of a chance that 600 will die" when the problem was framed negatively.

Tversky and Kahneman explained this preferences reversal in terms of their Prospect Theory (Kahneman and Tversky, 1979): Positive framing of problems emphasizes the benefits, while negative framing emphasizes risks. Whenever contemplating benefits, decision makers are prone to minimize risks (exhibiting “risk-aversion”) whereas decision makers are prone to eliminate risks even if the costs are high when contemplating risks (demonstrating “risk-seeking”) (see also Tversky and Kahneman, 1981).

Over the past two decades, the effect of framing on human judgment and decision-making has been documented in various domains. The range of domains spans medical and clinical decisions (e.g., Detweiler *et al.*, 1999; Jasper *et al.*, 2001), consumer behavior (e.g., Zhang and Buda, 1999), accounting (e.g., Chang *et al.*, 2002), public-sector funds allocation (e.g., Davis and Bobko, 1986), perceptual judgments, responses to social dilemmas, and bargaining behaviors. Levin *et al.* (1998) offered a typology that distinguishes among three different kinds of framing effects: risky choice frames, goal framing, and attribute framing. These three types are distinguishable in terms of their operational definitions, their typical results, and their likely underlying processes (Levin *et al.*, 2002).

The first type, risky choice frames, regards problems such as the “Asian disease problem” (Tversky and Kahneman, 1981) described above. In the second type, goal framing, a situation is described in a positive frame that stresses positive consequences of an action (gain) or in a negative frame that focuses attention on avoiding the negative consequences (loss). For example, Meyerowitz and Chaiken (1987) showed that women were more apt to engage in breast self-examination (BSE) when presented with information stressing the negative consequences of not engaging in BSE, than when presented with the positive consequences of engaging in BSE. Thus, goal framing is relevant for problems in which the object is to promote a certain goal and the question is which frame will have a greater persuasive impact (Levin *et al.*, 1998, p. 168).

In the third type, attribute framing, an object or an event is evaluated in a positive or negative frame. In a renowned example of attribute framing presented by Levin and Gaeth (1988), participants evaluated the quality of a ground beef product presented as “75% lean” (positive frame) as higher than when presented with the same product described as “25% fat” (negative frame). Thus, unlike risky choice frames in which participants are asked to choose between two choices, in attribute framing problems they are asked to evaluate options.

The explanation offered by Levin *et al.* (1998) for the attribute framing effect details a psychological process in which information is encoded relative to its descriptive valence. Positive labeling of an attribute leads to encoding of the information that tends to evoke favorable associations in one’s memory while the negative labeling of the same attribute is likely to

cause an encoding that evokes unfavorable associations. These different encodings cause a valence shift in responses, such that the evaluations of the same situation become higher in the positive frame situation. Accordingly, it is presumed that the positive labeling of the meat product in Levin and Gaeth's (1988) study led to more favorable associations, which caused people to evaluate it as a better product.

Evaluating options is also typical in cases in which people are asked about resource allocation. In such situations, people are usually asked to judge the use of a certain principle in order to accomplish the resource allocation. Thus, the attribute framing paradigm can be applied in order to examine justice judgments in resource allocation situations. As consumer products can be framed using positive or negative descriptions of the product, so, too, can allocation situations be framed as resulting in either positive or negative outcomes. Much as consumer products are judged as better when described in a positive frame than in a negative frame, we predict that a similar pattern will be found for justice judgments. When a resource allocation situation is framed in a positive manner (stressing the benefits of the outcome), the principles used for allocation will be judged as more just than when the same resource allocation is framed in a negative manner (stressing the losses and harms). Analogous to the explanation offered for the attribute framing effect (Levin *et al.*, 1998), we hypothesize that positive framing of a resource allocation should lead to a more favorable association, which will lead to a more favorable judgment of the allocation situation and the principles used to accomplish the allocation. On the other hand, negative framing of a resource allocation can lead to more unfavorable associations, which will lead to a less favorable judgment of the allocation situation and principles.

This paper uses the attribute framing paradigm to examine Törnblom's (1988) framework of resource allocation situations in the context of presenting the same allocation situations in either a positive manner (e.g., to deliver goods or to withhold bads) or a negative manner (e.g., to deliver bads or to withhold goods). This framing paradigm has a crucial methodological advantage: By holding the objective value of the situation constant, framing can determine the effect of the subjective value created by the different descriptions. The use of the framing paradigm also follows the recommendation that "comparisons have to be made systematically, keeping extraneous variables constant while varying those of immediate interest" (Törnblom 1988, p. 151).

## EXPERIMENT 1

This first experiment examined two types of selection—higher educational institutions accepting/rejecting student applicants and prospective employers accepting/rejecting potential personnel. The number of available

places in both situations is smaller than the number of qualified applicants and only some of the qualified applicants can be accepted while the others must be rejected. The acceptance/rejection was framed in one of two ways. When *positive*, the result is a benefit (delivering status; i.e., accepting some of the applicants); and in contrast, the identical selection situation, when framed *negatively*, results in harm (withholding status; i.e., rejecting the remaining applicants). Among the three distributive justice principles, the most relevant one in such selection situations is assumed to be equity, which is commonly represented by the rule of merit (a combination of the assessment of the individual's ability and effort). This can be achieved by the use of grades (in education selection) or the use of qualifications (in personnel selection) as a measure. According to the theoretical rationale presented above, it was predicted that people will display a stronger preference for the merit principle when a selection situation is framed *positively* (i.e., accepting some of the applicants), relative to the *exact same* situation framed *negatively* (i.e., rejecting the remaining applicants).

## METHOD

### Participants

The sample included 380 undergraduate students in three higher educational institutions, 97 males and 261 females (22 values were missing) studying in various departments (e.g., Education, Behavioral Sciences, and Business Management). Participants' mean age was 25.2, with a standard deviation of 3.5.

### Materials

Each participant was presented with a vignette concerning one situation: either higher education selection or personnel selection. The selecting institution/business was described as having a limited number of places (100 in higher education selection and 200 in personnel selection) and twice the number of qualified applicants (200 and 400, respectively). All applicants were described as having the minimal requirements (above-average entrance scores and adequate qualifications, respectively). The situation was described in a positive manner (how to accept half of the applicants) or in a negative manner (how to reject half of the applicants). The participants were asked to choose among three options: allocation by merit (by entrance scores or qualifications, respectively), allocation by a random draw, or allocation combining the two principles. That is, the participants were asked

to choose one of the three following options (the personnel selection situation is presented in parentheses):

*Positive Framing*

- a. To accept 100(200) of the applicants with the highest entrance scores (qualifications).
- b. To accept 100(200) applicants by a random draw.
- c. To accept \_\_\_ applicants with the highest entrance scores (qualifications), and from the remaining applicants, to accept another \_\_\_\_\_ applicants by random selection (note that the sum of the two numbers must be 100/200).

*Negative Framing*

- a. To reject 100(200) of the applicants with the lowest entrance scores (qualifications).
- b. To reject 100(200) applicants by a random draw.
- c. To reject \_\_\_ applicants with the lowest entrance scores (qualifications, and from the remaining applicants, to reject another \_\_\_\_\_ applicants by random selection (note that the sum of the two numbers must be 100/200).

**Procedure**

Participants were asked to fill out the above questionnaire either during a class or when approached on the university campus. Both framing conditions and situations were randomly assigned among all participants. The research was presented as a study of attitudes toward distributive justice principles. The students were told that there were no correct or incorrect answers to the questions and that the information would be used for research purposes only.

**RESULTS AND DISCUSSION**

The dependent variable in this experiment is the percentage of applicants that participants chose to accept or reject according to the merit principle, ranging from 0 to 100%, henceforth: "allocation by merit." If a participant chose to accept or reject all the applicants according to the merit principle, the dependent variable was coded as 100%. If a participant chose to accept or reject all the applicants according to the random principle, the

dependent variable was coded as 0%. When the places were divided into some applicants accepted (or rejected) by the merit principle, and the remaining places divided by a random draw, the value of the dependent variable was the percentage of applicants accepted or rejected by merit (a number between 0 and 100%).

Table I summarizes the descriptive statistics of the “allocation by merit” variable according to the framing conditions (positive and negative) in the two situations. The table shows that the average of the “allocation by merit” variable ranges from 69 to 93%, across all the conditions. That is, most participants are in favor of the merit principle commonly used in selection for higher educational institutions and in personnel selection.

A two-way ANOVA was performed for Framing (Positive [to accept] versus Negative [to reject]) X Situation (Selection for higher education versus Personnel selection) on the “allocation by merit” variable. Effects were evident for both Framing,  $F(1,376) = 4.55, p < 0.05$ , and Situation,  $F(1,376) = 24.25, p < 0.05$ , but not for the Framing X Situation interaction,  $F(1,376) = 0.17, p > 0.05$ . As can be seen in Table I, these effects indicate that allocation by merit was preferred more in the positive (acceptance) condition relative to the negative (rejection) condition. The merit principle was also more likely to have been preferred in personnel selection than in selection for higher educational institutions.

The lack of an interaction effect indicates that similar patterns of results occurred in both situations. Thus, the framing effect was examined within each situation. The effect size of framing in selection for higher educational institutions was 0.25 standard deviation units (Cohen’s *d*, 1988) and was statistically significant,  $t(239) = 1.96, p < 0.05$ . The corresponding framing effect in personnel selection was similar in size (0.22 SD), though not statistically significant,  $t(137) = 1.28, p > 0.05$ .

Additional analyses revealed no significant gender differences in selection for higher educational institutions,  $t(222) = -0.24, p > 0.05$ , or in personnel selection,  $t(132) = 0.62, p > 0.05$ .

**Table I.** Allocation by Merit in Different Framing Conditions and Different Selection Situations

Situation	Framing	Mean	SD	<i>N</i>	Mean difference (In SD units)
Higher education selection	Positive	77.6	29.4	115	0.25*
	Negative	69.1	37.8	126	
Personnel selection	Positive	92.8	23.2	71	0.22
	Negative	87.0	29.8	68	
Total	Positive	83.4	28.1	186	0.24*
	Negative	75.4	36.1	194	

\*  $p < 0.05$ .

As predicted, participants displayed stronger preferences for the merit principle when the selection situation was framed in a positive manner (accepting some of the applicants), relative to the *very same* situation framed in a negative manner (rejecting the remaining applicants). This effect was found when examined across both selection situations. Although the effects were similar in size and sign in both situations, it was statistically significant only for the context of selection for higher educational institutions. This could be due to either the smaller sample size in the personnel selection situation (139 relative to 241 in higher education selection), or to a possible ceiling effect (the averages were 93% and 87% for positive and negative conditions, respectively).

However, this first experiment has several limitations. First, only two combinations of modes of accomplishing resource allocations as described in Törnblom's (1988) framework (see Fig. 1) were examined: delivering status (resulting in benefit) versus withholding status (resulting in harm). Second, this experiment examined only the merit principle and did not address other distributive justice principles and rules (e.g., need, ability, effort, equality of results). Third, the resource allocation situations in this experiment concerned only selection situations and not other allocation situations. Finally, the measurement of the dependent variable (allocation by merit) reflects the participants' preference for the merit principle over the random draw. A better way to measure people's justice judgments could be to ask participants to evaluate each justice principle separately. Experiment 2 was designed to overcome these limitations.

## EXPERIMENT 2

The second experiment examined several allocation situations (other than selection) that were designed to describe different combinations of modes of accomplishing resource allocation (as described in Törnblom's framework, 1988, see Fig. 1), resulting either in benefits (delivering goods or withholding burdens) or in harms (delivering bads or withholding benefits). Unlike the previous experiment, this experiment examined five different rules of distributive justice: ability, effort, tenure, need, and equality of opportunities. Each rule was evaluated separately by the participants.

It was hypothesized that framing the allocation situation in a positive manner would cause an encoding of the information that would evoke favorable associations in participants' memories, resulting in a more favorable judgment of the distributive justice principle used in the allocation. In contrast, it was predicted that negative framing will cause an encoding of the information that would evoke unfavorable associations in participants'

memories, resulting in a less favorable judgment of the distributive justice principle used in the allocation.

## METHOD

### Participants

The sample included 134 participants, 58 males and 75 females (one participant did not state his/her gender) working in various organizations. Participants' ages ranged between 19 and 61, with a mean of 35.2 years and a standard deviation of 10.

### Materials

Three vignettes described a department in a business organization that employs 50 workers. In each vignette the department had to allocate a different resource to 25 of the workers. The resources were: computers, professional training programs, and overtime hours. In the computer allocation situation the department had 25 new computers and 25 old computers that needed to be allocated to the workers. All of the workers preferred the new computers. In the professional training program allocation situation the department's management decided to send employees to a professional training program, which would result in a salary increase; however, the department only had the resources to send 25 employees. In the overtime allocation situation the department's management needed 25 workers to work 2 h of overtime in order to complete additional tasks. In the positive frame condition, the management had to decide which of the workers would receive the resource (or be exempted from overtime duties) and in the negative frame conditions the management had to decide which of the workers would be denied the resource (or be asked to stay overtime).

Each situation was designed to represent different modes of accomplishing resource allocation. The computer situation was framed as either delivering goods (new computers) or as delivering bads (old computers); the professional training program situation was framed as either delivering or withholding money (the salary increase resulting from the training program); the overtime situation was framed as either withholding or delivering a burden (overtime hours). Following their reading of each vignette, participants were presented with five options describing the use of a different principle of distributive justice used for determining the allocation: random draw (equality of opportunities), employee need, the length of time the employee worked in the organization (tenure), and the employee's ability or

effort. Participants were then asked to rate each option on a 6-point scale, ranging from 1 ("very unjust") to 6 ("very just"). The participants were also asked to state their age and gender.

### Procedure

Participants were approached in their workplaces and asked to fill out the above questionnaires. Participants were randomly assigned to either the positive (benefits) framing or the negative (harms) framing condition. The order of the three vignettes was counter-balanced. The research was presented as a study of attitudes toward distributive justice principles. The participants were told that there were no correct or incorrect answers to the questions and that the information would be used for research purposes only.

### RESULTS

Table II presents the descriptive statistics of participants' ratings of the five distributive justice principles regarding each of the three resources along with measurements of effect sizes for the differences between benefits and harms conditions.

As can be seen in Table II, different effect sizes exist regarding different principles. There seems to be a consistent pattern for the non-egalitarian principles, which have positive effect sizes, indicating that the principles were usually judged as more just in the positive frame condition (benefits) than in the negative frame condition (harms). Excluding a null effect size ( $-0.02$ ) for the effort principle in the professional training program resource allocation, all other eleven effect sizes ranged between 0.12 and 0.65, with a median of 0.33 standard deviation units. In contrast, this pattern was not evident with respect to the equality principle, whose effect size was  $-0.21$ ,  $-0.13$ , and 0.24 for the computers, training program, and overtime resources, respectively.

Three MANOVA analyses (for each resource separately) were conducted on the five distributive justice principles as dependent variables and using the framing (benefits versus harms) as a between-subject factor. The results indicated that the linear combination of the five dependent variables is different between the two framing conditions regarding the training program and overtime resources (Wilk's  $\Lambda = 0.81$ ,  $0.87$ , respectively,  $p < 0.05$ ) but not for the computer resource (Wilk's  $\Lambda = 0.94$ ,  $p > 0.05$ ). Separate comparisons between the framing conditions for each of the distributive justice principles yielded the following results. With regard to the computer resource, statistically significant differences between framing conditions were

**Table II.** Descriptive Statistics of the Ratings of the Five Principles of Allocation for Different Resources Using Different Modes of Allocation under Benefits (positive) Versus Harms (negative) Conditions<sup>a</sup>

Modes of allocations (Resource)	Principle	Positive		Negative		Mean difference <sup>b</sup>
		Mean	SD	Mean	SD	
Deliver goods versus deliver bads (Computers)	Ability	3.54	1.29	3.16	1.27	0.29*
	Effort	3.90	1.23	3.67	1.30	0.18
	Tenure	3.19	1.28	2.75	1.33	0.33*
	Need	5.51	0.68	5.36	1.01	0.17
	Equality	3.09	1.52	3.40	1.47	-0.21
Deliver goods versus withhold goods (Training program)	Ability	3.90	1.18	3.44	1.42	0.35*
	Effort	4.72	1.10	4.74	1.06	-0.02
	Tenure	3.46	1.25	2.55	1.39	0.65*
	Need	4.70	1.30	3.84	1.36	0.62*
	Equality	3.07	1.57	3.27	1.51	-0.13
Withhold bad versus deliver bad (Overtime)	Ability	2.12	0.99	2.00	0.96	0.12
	Effort	3.60	1.38	2.88	1.51	0.48*
	Tenure	2.93	1.32	2.73	1.23	0.16
	Need	4.47	1.14	3.70	1.37	0.59*
	Equality	4.42	1.28	4.09	1.50	0.24

<sup>a</sup>The number of participants in each experimental condition ranged between 66 and 67.

<sup>b</sup>Positive frame mean minus negative frame mean divided by total standard deviation units (Cohen's *d*, Cohen, 1988).

\*  $p < 0.05$ .

evident for the ability and tenure principles,  $t(128) = 1.68, 1.98$ , respectively,  $p < 0.05$  in both cases, but not for the effort, need, or equality principles,  $t(128) = 1.03, 0.9$ , and  $-1.21$ , respectively,  $p > 0.05$  in all cases. With respect to the training program resource, statistically significant differences between framing conditions were evident for the ability, need, and tenure principles,  $t(128) = 1.99, 3.39$ , and  $4.01$ , respectively,  $p < 0.05$ , but not for the effort and equality principles,  $t(128) = -0.13$  and  $-0.7$ , respectively,  $p > 0.05$ . For the overtime resource, statistically significant differences between framing conditions were evident for the effort and need principles,  $t(128) = 2.99$  and  $3.49$ , respectively,  $p < 0.05$ , but not for the ability, tenure, or equality principles,  $t(128) = 0.72, 0.78$ , and  $1.28$ , respectively,  $p > 0.05$ .

### GENERAL DISCUSSION

In two independent studies, using different allocation resources and principles, framing affected the justice judgments of the resource allocation principles. The first experiment was limited in several aspects, which were overcome by the second experiment. Therefore, the following discussion refers mostly to the results of the second experiment.

Whenever the allocation situations were framed positively (resulting in benefits), the non-egalitarian allocation principles were judged as more just than when the exact same allocation situations were framed negatively (resulting in harms). This framing effect illustrates a shift in people's justice judgments due only to different descriptions of the exact same situation. This effect was found with respect to various modes of accomplishing resource allocation and different types of resources: delivering goods versus delivering bads, delivering money versus withholding money, and withholding a burden versus delivering a burden. However, this effect was not evident for the equality principle, which yielded inconsistent results.

This finding can be explained using the theoretical explanation offered by Levin *et al.* (1998) to explain attribute framing effects in other contexts. We believe that the positive framing of the allocation situation led to an encoding of the information that evoked favorable associations in the memories of participants, and these led them to judge the non-egalitarian principles as more just relative to the negative framing situation. For example, when the department had to decide which of the employees would get the new computers (positive framing), participants judged that delivering the computers to the 25 most senior employees is more just than delivering the old computers (negative framing) to the 25 least senior employees. Presumably, the positive framing of the allocation situation evoked more favorable associations that led to judging the principle as more just relative to the negative framing of exactly the same allocation situation.

Nevertheless, this explanation can only be applied to judgments using non-egalitarian principles and not to those using the equality principle, which yielded inconsistent results. A major distinguishing attribute of the equality principle, especially when it is implemented by a random draw, is that it does not explicitly identify the receivers (or those being deprived) of the desired resource. A random draw actually refers to the allocation process and is liable to result in many different outcomes. This might imply that the favorable (or unfavorable) associations caused by the framing of the allocation situation are not salient when judging the fairness of the random draw outcome. However, further research is needed in order to clarify this issue.

This study applied the framing paradigm originally used in various contexts of decision-making processes to the context of justice judgments. Although previous research in justice judgments used the term "framing" in the context of positive and negative resource allocation (e.g., Sabbagh and Schmidt, 1998; Törnblom and Ahlin, 1998), these studies chiefly used the term to describe different situations (e.g., profits versus costs; gains versus losses; information versus misinformation; reward versus punishment) and did not present the same situation in different and complementary manners. In contrast, the framing paradigm used in this paper enabled the control of all other factors by altering only the descriptions of a situation, without

changing the objective situation itself. Such use of the framing paradigm allowed us to show a clear difference in justice judgments caused only by different modes of accomplishing resource allocation. As far as we know, this is the first application of the attribute framing paradigm to justice judgments.

The results of this study have important implications for policymakers and for researchers in the area of justice judgments, as well as for the general public. The existence of a framing effect on allocation preferences may help policymakers win public support for implementing non-egalitarian principles in allocation situations simply by changing the frame of how the allocation is being accomplished. For example, in order to gain more support for the use of non-egalitarian principles, one can describe a given allocation situation in terms of delivering benefits rather than burdens. The public, on the other hand, might be interested in this phenomenon and seek to translate each allocation problem into both benefit and harm terms, so as to avoid being influenced by the chosen frame of presentation.

To conclude, this research provides evidence concerning the effect of different modes of implementing resource allocations on justice judgments and proposes the use of the framing paradigm in exploring these factors. The use of Törnblom's (1988) conceptual framework is most helpful in suggesting how to achieve experimental control over some factors while examining the effect of others. We hope that the use of the framing paradigm, alongside Törnblom's framework, will lead to a better understanding of people's justice judgments of positive and negative resource allocations and the factors affecting them.

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