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## BRIEF REPORT

# Not Taking Responsibility: Equity Trumps Efficiency in Allocation Decisions

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When allocating resources, equity and efficiency may conflict. When resources are scarce and cannot be distributed equally, one may choose to destroy resources and reduce societal welfare to maintain equity among its members. We examined whether people are averse to inequitable outcomes per se or to being responsible for deciding how inequity should be implemented. Three scenario-based experiments and one incentivized experiment revealed that participants are inequity responsibility averse: when asked to decide which of the 2 equally deserving individuals should receive a reward, they rather discarded the reward than choosing who will get it. This tendency diminished significantly when participants had the possibility to use a random device to allocate the reward. The finding suggests that it is more difficult to be responsible for the way inequity is implemented than to create inequity per se.

*Keywords:* resource allocation, equity, efficiency, responsibility, decision-making

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Equity is an important value: People seek to maintain equity and get upset if someone receives more for doing the same (Adams, 1965). However, maintaining equity at times may come at the

expense of social welfare. Imagine a war zone where two civilian villages are being bombed and need shelters. Only one mobile shelter is available. Should the shelter be placed in one of the villages, creating an efficient inequity, or should the shelter not be placed in either village, resulting in an inefficient equity? The current research aims to examine people's decisions in such conflicts.

People may prefer equity over efficiency.<sup>1</sup> Beattie, Baron, Hershey, and Spranca (1994) found that when people are called upon to violate equity, they prefer to avoid making a decision altogether. Furthermore, they are even willing to discard a resource over unequally allocating it (Shaw & Knobe, 2013; Shaw & Olson, 2012). Choshen-Hillel, Shaw, and Caruso (2015) suggest that people seek to avoid appearing partial (i.e., as if they favor one person over the other) and thus prefer to discard a resource rather than allocating it to one of the two. However, what happens when the likelihood of appearing partial is removed? Would people be willing to create inequity between others? Here we focus on allocating resources among others, keeping the allocator's anonymity fully secured. In such settings, concerns for appearing partial are unlikely; thus, we are able to focus on the internal conflict people may experience when deciding between equity and efficiency.

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<sup>1</sup> We use the term *efficiency* in the sense proposed by Bolton and Ockenfels (2000); i.e., a surplus maximization (maximizing the total amount of monetary resources in use).

## Inequity Responsibility Aversion

Whereas people are averse to inequitable outcomes (Bolton & Ockenfels, 2000; Fehr & Schmidt, 1999; Loewenstein, Thompson, & Bazerman, 1989), they are less upset when the allocator's sense of responsibility is reduced. For example, people are more likely to accept unfair offers in the Ultimatum Bargaining Game that are generated by a random device rather than a person (Blount, 1995). This is because the allocator has no intention to be unfair and is not responsible for the inequitable outcome (Lagnado & Channon, 2008). Likewise, when forced to allocate resources between themselves and an equally deserving other, people tend to prefer a random device to determine the allocation rather than deciding on the allocation themselves (Kimbrough, Sheremeta, & Shields, 2014; see Rohde & Rohde, 2015 for multiple recipients allocations). However, the question of how people trade off equity and efficiency when allocating resources between others remains open.

We draw on recent literature in moral psychology and behavioral ethics, suggesting that people wish to maintain a moral and honest self-concept and thus avoid major moral transgressions even when anonymity is secured (e.g., Mazar, Amir, & Ariely, 2008; Shalvi, Dana, Handgraaf, & De Dreu, 2011). Accordingly, just as people internalize the desire to be somewhat honest, they also internalize the desire to be fair (Rustichini & Villeval, 2014). When allocating resources, fair means equitable (Andreoni & Bernheim, 2009). Thus, people may avoid allocating a resource unequally even when their anonymity is fully secured. Furthermore, because of people's responsibility aversion—the “preference to minimize one's causal role in outcome generation” (Le-onhardt, Keller, & Pechmann, 2011; p. 405)—we hypothesize that people are more averse to being responsible for determining how inequity is implemented than creating inequity per se. We term this *inequity responsibility aversion*.

### Experiment 1a

Participants were asked to choose between (a) an efficient yet inequitable allocation in which one person gets more goods than another similarly deserving other versus (b) an inefficient but equitable allocation in which the goods are destroyed and both get nothing. In one condition participants needed to choose between these options and in another condition they had a random device to assist them. If people are inequity responsibility averse, then having a random device to determine who gets what is expected to increase their willingness to sacrifice equity for efficiency. However, if people are inequity averse per se, then the random device should have no effect on the propensity to prefer equity over efficiency.

### Participants and Procedure

Forty-four participants (19 males,  $M_{\text{age}} = 24.88$  years,  $SD_{\text{age}} = 1.71$ ) participated in the experiment for ILS15 (~\$4). We aimed for at least 20 participants per cell. Participants read a scenario describing a “best employee contest.” Two employees won the contest with exactly the same score and therefore equally deserved the prize. Participants were asked to decide whether to award the prize to one of the two employees or discard the prize and declare there was no winner. It is important to note that participants were

asked to make their decision assuming that their decision was anonymous.

Participants were randomly assigned to one of the two experimental conditions. In the Human Allocation condition, they were asked whether they would give the prize to one employee (“Gal”), to another employee (“Tal”), or discard the prize altogether.<sup>2</sup> In the Random Allocation condition, participants were asked to decide whether to use a random allocation device to decide whether Gal or Tal would win the prize or to discard it. Whereas in both conditions choosing to allocate the reward results in (efficient) inequity, only the Human Allocation condition involves taking responsibility about who gets what.<sup>3</sup>

Here and in all reported experiments, we report all measures, manipulations, and exclusions. Analyses were conducted only upon completion of data collection.

## Results

Supporting the inequity responsibility aversion hypothesis, participants were more than 8 times more likely to discard the prize in the Human Allocation condition (36.36%, 8 of 22) than in the Random Allocation condition (4.54%, 1 of 22),  $\chi^2(1) = 6.84$ ,  $p = .011$  (see Table 1).

### Experiment 1b

Experiment 1b replicates Experiment 1a while preserving participants' actual anonymity and not just assumed anonymity.

### Participants and Procedure

Participants were 178 university students who completed the experiment in exchange for a chocolate bar.<sup>4</sup>

The design was identical to Experiment 1a, assigning participants to either the Human or Random Allocation conditions. Using a double-blind procedure, in Experiment 1b, participants received a pen and paper describing the scenario. They were asked to circle their choice, fold the paper, and place it in a sealed box containing all other participants' responses. Participants did not provide any details regarding their identity; thus, their anonymity was fully secured.

## Results

Supporting the inequity responsibility aversion hypothesis and replicating the results of Experiment 1a, participants were 4 times more likely to discard the prize in the Human Allocation condition (28.41%, 25 of 88) than in the Random Allocation condition (7.78%, 7 of 90),  $\chi^2(1) = 12.84$ ,  $p < .001$ .

<sup>2</sup> Both Tal and Gal are very common Hebrew names used for males and females. Those names do not carry any ethnicity or socioeconomic status association. In the experiments described here, we referred to them as female employees.

<sup>3</sup> We also traced participants' eye movements when they made their decision. This measure provided no meaningful insights and is reported in the online supplementary materials.

<sup>4</sup> This experiment was run as a replication after Experiment 3 and for clarity purposes is reported second. Because it is a replication, we used a relatively large sample.

Table 1  
Discard Proportions in the Different Conditions in All Experiments

Experiment	Student target, allocation creates inequity		Computer target		Student target, allocation creates equity	
	Human	Random	Human	Random	Human	Random
Experiment 1a (hypothetical)	36.36% (8 of 22)	4.54% (1 of 22)				
Experiment 1b (hypothetical)	28.41% (25 of 88)	7.78% (7 of 90)				
Experiment 2 (hypothetical)	36.37% (11 of 30)	15.62% (5 of 32)	3.12% (1 of 32)	3.03% (1 of 33)		
Experiment 3 (incentivized)	52.17% (12 of 23)	0% (0 of 21)			0% (0 of 26)	0% (0 of 26)
Weighted average	34.35% (56 of 163)	7.88% (13 of 165)				

## Experiment 2

The results of Experiments 1a and 1b support the inequity responsibility aversion hypothesis. However, the decision to discard the prize in the Human Allocation condition may have been driven by participants' desire to avoid choosing between identical alternatives (i.e., two employees). Indeed, people display decision aversion—a tendency to avoid decisions when there is no clearly preferable option (Anderson, 2003; Dhar & Sherman, 1996). In these situations, if a decision must be made, then people prefer someone else to make it (Beattie et al., 1994) or to use a random decision procedure (Dwenger, Kubler, & Weizsacker, 2012).

If people's aversion of choosing between identical alternatives accounts for the results from Experiment 1, then people should display the same decision aversion when splitting resources between any identical entities—be it humans or not. However, the inequity responsibility aversion hypothesis proposes that the use of the random device is driven by the aversion of being responsible for creating inequity among people. People feel it is unfair to favor one person over another, but they have no difficulty in differentially treating inanimate objects, such as choosing which of two computers to upgrade. Experiment 2 tested this idea.

## Participants and Procedure

Participants were 130 (63 male,  $M_{\text{age}} = 24.66$  years,  $SD_{\text{age}} = 3.10$ ) students who participated in an online survey in exchange for participation in a raffle of four ILS50 prizes. Sample size was determined based on a power calculation suggesting 25 participants per condition given the effect size obtained in Experiment 1a ( $w = .394$ ) for a power of 0.8. Participants were randomly assigned to a 2 (Target: Student vs. Computer)  $\times$  2 (Allocation: Human vs. Random) factorial design.

Participants read about a university ICT technician who purchased a single software upgrade that could be installed on one of two computers in a certain laboratory. Participants in the Computer Target condition read that the computers in the laboratory are shared by all laboratory members. Therefore, installing the upgrade on one computer does not violate equity. Participants in the Student Target condition were told that the computers in the laboratory are personally assigned; thus, the allocation is between specific people. It is important to note that participants were informed that the students working at the laboratory would not learn who took the decision of (not) upgrading the software. Participants in the Human Allocation condition had to specify on which computer to install the upgrade or to forfeit it altogether. Participants in the Random Allocation condition were asked

whether to use a random device to decide on which computer to install the upgrade or to forfeit it altogether.

To ensure that participants understood that the decision is made anonymously, they were asked two comprehension questions in the Student Target condition: (a) Were the two students aware of the technician's dilemma and (b) would the students know the technician's identity?

## Results

Three participants answered the comprehension questions incorrectly; therefore, they were excluded from the analysis.

Overall, 14.17% (18 of 127) of the participants discarded the software upgrade. A log-linear analysis revealed the expected Target  $\times$  Allocation interaction,  $\chi^2(4) = 18.62$ ,  $p < .001$ ; Participants in the Student Target condition were more than twice as likely to discard the reward in the Human Allocation condition (36.67%, 11 of 30) than in the Random Allocation one (15.62%, 5 of 32),  $\chi^2(1) = 3.58$ ,  $p = .054$ . However, participants in the Computer Target condition rarely discarded the reward in either the Human Allocation (3.12%, 1 of 32) or the Random Allocation condition (3.03%, 1 of 33),  $\chi^2(1) < 1$ .

## Experiment 3

Experiment 2 demonstrated that people are reluctant to create inequity between humans, but not between inanimate identical alternatives. Thus, the preference for the random allocation device in the Human Allocation condition is not evidence for a general tendency to avoid making decisions.

In Experiments 1 and 2 we used hypothetical scenarios. Experiment 3 aimed to (a) test the inequity responsibility aversion hypothesis using incentivized decisions and (b) show that people have a preference for equity—namely, to allocate the reward to the more deserving recipient.

## Participants and Procedure

Participants were 100 students (15 males,  $M_{\text{age}} = 23.26$  years,  $SD_{\text{age}} = 1.45$ ) who participated in the study in exchange for course credit. Participants were randomly assigned to a 2 (Allocation result: Equity vs. Inequity)  $\times$  2 (Allocation condition: Human vs. Random) factorial design.

Participants served as referees in a trivia contest. They received the answers given by two contestants to 20 trivia questions, the correct answers to all questions, and a voucher for coffee and pastry at the university cafeteria worth ILS10. Participants were



asked to count how many correct answers each contestant had and place the reward (i.e., voucher) in the envelope of the deserving contestant. Participants were told that they may also cross the voucher, thus invalidating it, leading to none of the contestants getting a reward. Participants in the Human Allocation condition were asked to decide which of the two contestants should receive the reward by placing the voucher in the envelope identified with the respective subject number. However, participants in the Random Allocation condition had the additional option of placing the reward in an envelope marked with the subject numbers of both contestants—leading to a random choice among the two.

In the Equity Allocation result condition, participants graded the questionnaires of two contestants who were paired in such a way that one contestant answered more questions correctly than the other. Allocating the reward in such a setting is relatively easy. Contrarily, in the Inequity Allocation result condition, participants graded the questionnaires of two contestants paired in such a way that they both correctly answered an equal number of questions. Allocating the reward in such a setting is relatively difficult to justify. Finally, participants were asked whether they believed the contestants would know who had decided on the reward allocation.<sup>5</sup>

## Results

Four participants answered the comprehension question incorrectly and were removed from the analysis, leaving 96 participants in the analysis (14 males,  $M_{\text{age}} = 23.32$  years,  $SD_{\text{age}} = 1.42$ ).

Overall, 12.50% of the participants (12 of 96) discarded the voucher. In line with the inequity responsibility aversion hypothesis, the expected Allocation  $\times$  Result interaction was significant  $\chi^2(4) = 40.54$ ,  $p < .001$ . When allocation resulted in inequity, participants were much more likely to discard the reward in the Human Allocation condition (52.17%, 12 of 23) compared with the Random Allocation condition (0%, 0 of 21),  $\chi^2(1) = 15.06$ ,  $p < .001$ . In contrast, when allocation resulted in equity, none of the participants discarded the voucher in both the Human Allocation condition (0 of 26) and the Random Allocation condition (0 of 26),  $\chi^2(1) = 0$ .

Further confirming the hypothesis that people use a random allocation to avoid taking responsibility for deciding how inequity is implemented, in the Random Allocation condition participants were more likely (90.48%; 19 of 21) to use the random envelope (rather than choosing the specific individual to get the voucher) compared with participants in the Equity Result condition (0%; 0 of 26;  $\chi^2(1) = 39.49$ ,  $p < .001$ ).

## Discussion

Extending beyond the hypothetical scenarios used in Experiments 1 and 2, Experiment 3 asked participant to make decisions with monetary consequences. Experiment 3 revealed that participants do indeed care about equity: They refrain from allocating a reward when such allocation creates inequity but not when it promotes equity. In other words, people do not want to be responsible for deciding which of the two equally deserving recipients should get a reward, but they have no difficulties rewarding the more deserving person.

## General Discussion

Four experiments tested the inequity responsibility aversion hypothesis, suggesting that when asked to choose between equity and efficiency, people prefer equity over efficiency if they have to determine who gets what. However, they are less inequity averse if they are not taking responsibility for determining how inequity is implemented. Experiment 1 revealed that participants were more likely to discard a resource when they had to decide how inequity would be implemented compared with when they could use a random device to do so. Experiment 2 demonstrated that the effect is not driven by a mere decision aversion. Participants were willing to upgrade one of two computers, but they were reluctant to favor one person over an equally deserving other. Experiment 3 replicated the effect in situations involving decisions with monetary consequences. It further revealed that people avoid taking responsibility for implementing inequitable but not equitable allocations.

Extending past work showing that people have an aversion to creating inequity among others (Beattie et al., 1994), here we found that people destroy value and reduce society's welfare to avoid taking responsibility for implementing inequitable allocations. Moreover, we differentiate inequity responsibility aversion from decision aversion, which is when people avoid making any decision when faced with identical options or with a difficult decision (Anderson, 2003; Dhar, 1992; Thaler, 1980). Rather, people avoid decisions that unjustifiably leave one recipient better off than the other.

Experiment 3 demonstrated inequity responsibility aversion in decisions with monetary consequences: Participants preferred destroying a valuable resource rather than taking responsibility for deciding which of two equally deserving recipients should receive it. Incentivized behavioral experiments are a stringent test for people's preference and allow for a better proxy to real-world behaviors. The results of Experiment 3 revealed that participants were willing to destroy vouchers worth a non-negligible amount of money (ILS10 = 25 min of average student salary).

The current work focused on the decisions taken by participants. However, people may have different preferences when acting as observers than when making allocation decisions (Choshen-Hillel & Yaniv, 2011). For example, as observers people prefer decision-makers to determine the form of the inequity rather than use a coin toss (Keren & Teigen, 2010). Furthermore, recipients perceive randomization as unfair whereas allocators perceive it as a fair procedure (Haushofer & Shapiro, 2013). As such, our work reveals that people fail to live up to the expectation of taking responsibility and determining how resources should be allocated. This dissociation raises some intriguing questions open for future research to explore.

The resources studied here were meaningful but of modest magnitude. We find it interesting to consider how inequity responsibility aversion will take shape when the stakes are larger. On one hand, destroying a valuable resource (e.g., a car) may sound unthinkable, suggesting that the effect may be attenuated as the stakes increase. On the other hand, the inequity that results from allocating a car to one of the two equally deserving recipients is

<sup>5</sup> Participants further completed a few individual differences questionnaires that were not focal to the current study (see online supplementary materials).

also far greater, and potentially aversive, than when allocating a more modestly valued resource. Studying whether stakes moderate the inequity responsibility aversion effect seems promising for future exploration.

To conclude, current research revealed that inequity itself is not aversive, but taking responsibility for determining who gets what is. Our advice to policy-makers who face a conflict between equity and efficiency is to look for ways to separate the decision from its outcomes, thereby reducing the reluctance for being responsible for inequity, and allowing efficient (albeit not equal) allocations.

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