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# Luck, choice and responsibility — An experimental study of fairness views

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ABSTRACT

We conduct laboratory experiments where third-party spectators have the opportunity to redistribute resources between two agents, thereby eliminating inequality and offsetting the consequences of controllable and uncontrollable luck. Some spectators go to the limits and equalize either all or no inequalities, but many follow an interior allocation rule. These interior allocators regard an agent's choices as more important than the cause of her low income and do not always compensate bad uncontrollable luck. Instead, they condition such compensation on the agent's decision regarding controllable luck exposure, even though the two types of luck are independent. This allocation rule is previously unaccounted for by the fairness views in the literature. Moreover, its policy implications are fundamentally different in that it extends individual responsibility for choices made to also apply to areas that were not affected by these choices.



## 1. Introduction

When is inequality between people acceptable and when should it be reduced or eliminated? What constitutes a fair distribution of resources? These questions have been contemplated for centuries and remain at the forefront of both the academic and the public debate. They are interesting in their own right, but their importance is increased as they have implications for numerous related phenomena, such as the design of redistributive tax policies (Alesina and Angeletos, 2005; Krawczyk, 2010) and bargaining behavior (Gächter and Riedl, 2005, 2006). In this paper we study inequality preferences in risky environments and ask how people's fairness ideals differentiate between situations involving bad luck that stems from a choice (bad option luck) and those involving bad luck stemming from randomness that cannot be avoided (bad brute luck).

Option luck is "a matter of how deliberate and calculated gambles turn out — whether someone gains or loses through accepting an isolated risk he or she […] might have declined" (Dworkin, 2000, p. 73). Brute luck, on the other hand is "a matter of how risks fall out that are not in that sense deliberate gambles" (ibid). For example: if a person goes blind as a result of a genetic condition, her brute luck is bad, but if she buys a lottery ticket and wins, her option luck is good (Lippert-Rasmussen, 2001).

In the laboratory experiments reported in this paper we investigate how a disinterested third party (a spectator) divides resources between two other agents. We specifically consider the case where the resources to be divided are generated through a risky process which the agents can only partly control — i.e. both option and brute luck are present. Based on previous research, we expect (and confirm) that a significant fraction of spectators either always equalize inequalities between the two agents (i.e. they are strict egalitarians) or they never do (i.e. they are libertarians).[1]

The focus of this paper is, however, on the many people who are interior allocators and sometimes, but not always, choose to eliminate

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[1] Strict egalitarianism and libertarianism are similar, although not always identical, to the notions of ex-post and ex-ante egalitarianism respectively, see for example Cappelen et al. (2007, 2013). In the particular experimental design described here, the behavioral predictions of strict egalitarianism and ex-post egalitarianism overlap as do the behavioral predictions of libertarianism and ex-ante egalitarianism.

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inequality. In both the normative and the descriptive literature on social preferences, a popular candidate for this intermediate norm is one that conditions compensation for a bad outcome on its cause. More specifically, this norm states that a fair distribution of resources should even out inequalities that do not reflect choices that an agent has made, and over which she therefore lacked control.

This norm is often referred to as luck egalitarianism (canonical philosophy texts are Arneson, 1989; Cohen, 1989; Dworkin, 2000). This norm has also been studied in economics by for example Konow (1996) who calls it the accountability principle. In his words, "the Accountability Principle [...] requires that a person's fair allocation (e.g. of income) vary in proportion to the relevant variables that he can influence (e.g. work effort) but not according to those that he cannot reasonably influence (e.g. a physical handicap)" (Konow, 1996, p. 13).

Empirical research has indicated that luck egalitarianism provides a good description of people's actual distributive behavior. One example can be found in Konow (2000). He shows in a laboratory experiment that when the resources that are to be divided are generated randomly, outside the control of the agents, disinterested spectators almost always implement an equal split. However, when the resources come about through effort of the agents, Konow finds that the spectators' split is proportional to the agents' respective effort levels.[2]

A key assumption underlying luck egalitarianism is that uncontrollable and controllable factors are treated separately. This means that agents should not be held responsible for behavior that did not cause or influence the outcome. However, this assumption has to our knowledge never been explicitly tested. The reason is that previous experimental designs, including the one used by Konow (2000), have not allowed for situations in which the spectator is aware of the agents' actions regarding controllable factors at the same time as it turns out that only uncontrollable factors mattered for the outcome.

Our experimental design solves this problem by having both controllable option luck and uncontrollable brute luck present and easily distinguishable. For a spectator who behaves in accordance with luck egalitarianism, a fair distribution only holds agents responsible for outcomes that they could control. In our experiment this would imply that she compensates agents for bad outcomes that are due to bad brute luck but not those that are due to bad option luck.

This is, however, not the behavior we find. Instead, a large share of spectators makes bad brute luck compensation conditional on how the agent handles option luck. These spectators only compensate an agent who experiences bad brute luck when she also avoided exposure to option luck, even though the outcome would not have been affected if the agent had made a different option luck decision. This behavior is inconsistent with fairness views where the definition of a fair distribution depends on the cause of the outcome. Instead, it suggests a fairness view that is agency dependent and conditional on aspects of the agents' choices, regardless of whether these mattered for the outcome or not. We call this norm choice compensation.[3]

We use a choice model to estimate which share of spectators adhere to the different fairness ideals. We find that our data is well explained by a model with three types, with about a third of spectators being strict egalitarians, libertarians and choice compensators, respectively. We find very limited support for luck egalitarian behavior among the spectators.

Our results can be related to those of Cappelen et al. (2013), who also study fairness views in circumstances involving risk taking. They find support for a fairness norm that endorses redistribution between people who make the same decision regarding risk exposure. However, as their design has only controllable option luck present they cannot test, as we do, the extent to which an agent's responsibility for a choice made in a controllable situation carries over into an uncontrollable context in which the choice was irrelevant.[4]

The paper proceeds as follows. Section 2 presents the experimental design. Section 3 investigates how agents' bad brute luck is compensated (or not) by the spectators in the experiment. Section 4 provides a model of the distributive choices made in the experiment and presents the result of a maximum likelihood estimation of which behavioral types that can be found among our spectators. Section 5 describes an experimental extension that tests, and verifies, the robustness of our results. Section 6 concludes.

## 2. Experimental design

Each experimental session was identical and consisted of two parts, with all subjects participating in both parts.[5] In the first part all participants were informed that they each had been allocated an endowment of $24. They were told that at the end of part 1, one of three equally probable events would be drawn: A, B or C. If event A would be drawn for a participant, she would keep her endowment. If event B or C were drawn, she would lose her endowment.

Before the events were drawn, all participants were given a choice about whether or not to buy an insurance that would protect against the loss associated with event B. This insurance would not protect the agent against the loss associated with event C. Participants were informed that the price of the insurance would be $12, but that this would only have to be paid if the participant ended up keeping her endowment (this was done in order to ensure positive payoffs for participants). This implies that a participant who chose to insure against event B would end up with $12 if event A or B were drawn (she would then keep the endowment of $24 and pay the cost of the insurance) but nothing if event C was drawn. A participant who chose not to insure would get $24 if event A was drawn, and nothing if event B or C were drawn.[6]

The fact that agents could insure against only one source of loss gave rise to a situation where both uncontrollable and controllable elements were present. As it was impossible to eliminate the risk associated with event C, this event constituted bad brute luck in our experiment. On the other hand, the optional insurance against the loss associated with event B guaranteed the presence of option luck.

After the participants had decided whether or not to buy the insurance, they were informed that an event had been drawn for them that would be revealed at the end of the experiment. Thereafter, part 2 of the experiment started in which participants were randomly paired. They were told that they were to make choices regarding the distribution of income from part 1 for another pair of participants referred to as person 1 (P1) and person 2 (P2). Moreover, they were told that this choice would have no monetary consequences for themselves, i.e.

[2] For other experimental investigations related to luck egalitarianism and the accountability principle, see e.g. Schokkeart and Devooght (2003), Becker (2013) and Akbas et al. (2014).

[3] In the philosophical literature there are two approaches in the theory of "responsibility-sensitive egalitarianism": one where responsibility is ascribed on the basis of control (here we find luck egalitarianism and the accountability principle), and one where individuals are held responsible for their preferences (even when these are not entirely under their control). To the extent that a choice is regarded as revealing a person's general preferences also in areas that were not directly impacted by the choice, a choice conditioning behavior can be related to this strand of responsibility-sensitive egalitarianism. This topic is extensively discussed by for example Fleurbaey (2008) but has to our knowledge not been empirically assessed.

[4] The results can possibly also be informative regarding under which conditions process, as opposed to outcome, fairness is most important to spectators. Cf. Trautmann and Wakker (2010).

[5] Participants were told at the beginning of the session that there would be several parts and that instructions would be given for one part at a time, ahead of that part. Experimental instructions and selected screen shots can be found in the Online Appendix.

[6] Note that the insurance offered to the participants was actuarially fair as the expected value was $8 regardless of whether insurance was bought or not. Participants were explicitly pointed to this fact. The design choice to have a fair insurance was made in order to avoid concerns regarding an efficiency loss related to the insurance. A variation in the cost of insurance would constitute an interesting avenue for future research (however, it should be noted that Cappelen et al., 2013, find, in a related setting but with only option luck present, that the price of the insurance does not matter for redistributive choices).