Experimental Economics (2025), **28**, 379–400
doi:10.1017/eec.2025.10010

ORIGINAL PAPER

Passive inequality and the dilemma of meritocracy

Timo Freyer[1] and Laurenz Guenther[2]

[1]AXA, Cologne, Germany
[2]Bocconi University and IGIER, Milano, Italy
Corresponding author: Laurenz Guenther; Email: laurenz.guenther@unibocconi.it

(Received 22 January 2024; revised 5 October 2024; accepted 29 April 2025)

Abstract

In meritocratic societies, inequality is considered just if it reflects factors within but not outside individuals' control. However, individuals often benefit differentially from *other* people's efforts. Such *passive inequality* is simultaneously just and unjust by meritocratic standards, confronting meritocrats with a dilemma. We conducted an experiment with a representative US sample to investigate how people deal with this dilemma. In the experiment, impartial spectators redistribute payments between pairs of individuals. We vary whether initial payments result from luck or effort and whether spectators redistribute between individuals who worked themselves or individuals who benefited from the work of real-life friends. We find that spectators treat inequality based on the efforts of individuals' friends as if individuals had worked themselves, and very different from inequality resulting from differential luck. This indicates that most people accept inequality if it is merited at some stage, which may explain opposition to redistributive policies.

Keywords: Fairness; Inequality; Inheritance; Meritocracy; Redistribution

JEL Codes: Q12; C22; D81

1. Introduction

In a meritocratic society, inequality is considered fair only if it reflects factors within individuals' control, such as their own effort ("active inequality"). However, individuals are often not responsible for their outcomes themselves but benefit differentially from the efforts of others ("passive inequality"). Such passive inequality exposes a fundamental tension in the meritocratic logic. On the one hand, individuals are entitled to decide how to spend their earned resources, which includes the right to transfer them to others. On the other hand, if two individuals are not involved in the process that generates inequality between them, such inequality does not reflect their individual achievements. By meritocratic standards, passive inequality is therefore just and unjust at the same time and confronts meritocrats with a dilemma — *the dilemma of meritocracy*.[1] The dilemma of meritocracy appears in many situations where goods are distributed. Examples include teamwork, where workers profit differentially from the efforts of their co-workers, friendship ties that are differentially rewarding, and the inheritance of goods from parents to children.

[1]The dilemma of meritocracy differs from a tradeoff, for instance, between fairness and efficiency. In a tradeoff, one of the goods can be obtained at the cost of the other good. In contrast, the dilemma of meritocracy forces us to infringe on the meritocratic fairness ideal by either accepting passive inequality or effectively redistributing earned goods. While the dilemma of meritocracy constitutes a tradeoff between these two violations of the meritocratic fairness ideal, a violation occurs in any case, which defines an ethical dilemma (McConnell, 2022).

This paper aims to improve our understanding of fairness preferences by studying 1) how people deal with passive inequality compared to active inequality, where individuals are responsible for their own outcomes, and 2) how people resolve the dilemma of meritocracy. To formalize our intuition, we first introduce a stylized theoretical framework that formalizes how individuals evaluate unequal distributions and makes predictions about the relationship between preferences under active and passive inequality. To test these predictions empirically, we need to observe distribution decisions in situations that differ in whether the initial inequality is active or passive but are otherwise identical. Since such comparable situations are very rare outside of controlled experimental conditions, we conduct a survey experiment that is suitable to test the theoretical predictions and answer our two main research questions.

The theoretical framework covers situations in which money is distributed between two individuals who each benefit from the effort of an associated worker. An impartial spectator observes this situation and makes a fairness judgment based on his or her fairness ideal. This setup nests the case of active inequality, where a beneficiary and the associated worker are identical and, therefore, being fair toward workers is the same as being fair toward beneficiaries. If beneficiaries and their associated workers are not identical, however, meritocrats need to balance two potentially conflicting fairness views: if the two workers exert different levels of effort, the distribution that is considered fair toward the two workers may be different from the distribution that is considered fair toward the two beneficiaries, who both exert no effort. Given that fairness toward the workers calls for no redistribution, whereas fairness toward the beneficiaries demands full equalization, individuals face a dilemma because they infringe meritocratic fairness no matter how they redistribute. Because beneficiaries merit similar but inherit different outcomes, meritocrats may be less willing to accept passive inequality as compared to active inequality.

The corresponding experiment builds on the impartial spectator paradigm (Konow, 2000, Cappelen et al., 2013) and consists of two stages. In the earnings stage, an initial distribution of \$10 between two stakeholders is determined. In the first of two treatment dimensions, we vary whether the two stakeholders themselves work on a real-effort task to generate earnings (Active Inequality), or whether they each profit from the work of a real-life friend (Passive Inequality). In the second treatment dimension, we vary whether workers complete the same fixed number of tasks and the initial distribution is determined by a random draw (Luck), or whether workers choose how many tasks to complete and the initial distribution is proportional to the relative number of completed tasks (Effort). In the redistribution stage, we sample 543 impartial spectators representative of the general US population who can redistribute the \$10 between pairs of workers (Active Inequality conditions) or workers' friends (Passive Inequality conditions). Based on the treatment variation in the earnings stage, we implement a 2×2 within-subjects design in the redistribution stage: spectators make redistribution decisions for each of the four types of situations. For each situation, they observe the initial distribution and workers' relative effort before they determine the final allocation. Spectators are impartial in the sense that they have no stakes in the distribution themselves. Because redistribution is costless, we interpret the final allocation as the allocation they consider fair.

Besides the absence of spectator self-interest, this experimental setting has two additional advantages. First, the comparability of redistribution decisions across experimental conditions enables us to isolate how variations in our two dimensions of interest — whether the initial distribution is tied to workers' relative efforts or based on a random draw, and whether beneficiaries are responsible for their outcomes themselves or not — affect which distribution spectators find fair. Second, the stylized nature of the design allows us to abstract from other factors that affect distributional preferences, such as efficiency considerations or trust in the government (Almås et al., 2020, Stantcheva, 2021). This makes our results less specific to a particular situation. Instead, our design is in line with transfers from productive donors to unproductive recipients, which encompasses a broad set of situations. In particular, our design is not tailored to analyze attitudes toward inheritances, since workers do

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

not decide on how to allocate their earnings and because inheritances involve much larger sums. One concrete example of a real-world situation close to our design is tournaments where teams, for instance, divisions within a company, compete for a fixed price and participants are differentially lucky regarding the productivity of their team members.

Our empirical results are in line with our theoretical framework and yet surprising. Consistent with the existing literature, we find that in the Active Inequality & Luck condition redistribution levels are substantially higher than in Active Inequality & Effort (Cappelen et al., 2020). Spectators equalize about 80% of the initial inequality on average in the Luck case but only about 5% in the Effort case. Comparing redistribution levels between the two Luck conditions reveals that spectators redistribute in a similar way when beneficiaries profit from the random draw of their friends compared to a random draw of themselves. In the Effort domain, however, spectators indeed redistribute significantly more if inequality is passive. While spectators equalize 5% of the initial inequality in the Active Inequality & Effort condition, 5% this share increases to 8% in Passive Inequality & Effort.

The key takeaway, though, is that spectators redistribute a small fraction of the initial inequality in Passive Inequality & Effort, close to the Active Inequality & Effort benchmark but far away from the Luck benchmark of 80%. In other words, most spectators handle the dilemma of meritocracy by prioritizing fairness toward the benefactors over fairness toward the beneficiaries. This result seems to be a general feature of the US population, as it does not vary much by demographic variables like age, gender, or political ideology. Hence, there appears to be a broad consensus among US citizens that passive inequality is acceptable as long as it is merited by those who bequest.

We examine potential reasons why spectators tend to handle the dilemma of meritocracy in favor of the benefactors by analyzing open-ended responses in which spectators explain their redistribution decisions. Consistent with their decisions, most spectators say they redistribute based on the workers' (and not their non-working friends') relative efforts in the Passive Inequality & Effort condition. Zooming in on spectators who acknowledge the dilemma of meritocracy, that is, that they infringe meritocratic fairness irrespective of how they redistribute, reveals a more instructive consideration behind redistribution decisions: many of these spectators argue that neither of the two non-working friends is entitled to any payoff anyways, such that fairness toward the workers receives a much larger weight in their decision process. Under the assumption that workers prefer their own friends to receive the earnings they have merited through their efforts, this relative weighting of conflicting fairness judgments calls for the low level of redistribution that we observe in the experiment.

These considerations suggest that spectators observe workers' relative efforts, derive their relative entitlements, and then implement redistribution decisions trying to take into account (in particular the more industrious worker's) preferences over the distribution of payoffs between passive friends. To substantiate that this is a common rationale behind spectator's decisions, we explore how decisions are associated with spectators' (incentivized) beliefs about workers' preferred distributions of the $10 between their own and the other worker's friend. Indeed, spectators who believe that workers prefer distributions that more strongly favor their own friends redistribute less. Despite being neither causal nor conclusive, these observations suggest that spectators prioritize meritocratic fairness toward workers and try to respect workers' distributional preferences.

Due to the within-subjects design employed in the spectator stage, we can relate a given spectator's decisions across the four treatment conditions. Both within the Active Inequality and the Passive Inequality domain, we use this feature to classify spectators into one of three frequently studied fairness types, and a residual type: egalitarians who prioritize equality and always redistribute, libertarians who prioritize property rights and personal freedom and never redistribute, and meritocrats who prefer distributions that reflect relative efforts. In the Active Inequality domain, we can classify all but one spectator into one of the three fairness types. By far the most prevalent fairness type is the meritocratic one (76%), followed by libertarians (21%) and only few egalitarians (3%).

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

Most spectators display similar redistribution patterns in situations with Active Inequality and Passive Inequality. While we observe some switching between meritocrats and libertarians that is not in line with our theoretical framework, more than 85% of the spectators behave in a way that is consistent. We conclude that our theoretical framework can accommodate spectators' redistribution behavior well.

We also relate our experimental measures of fairness preferences to attitudes toward various redistribution-related policies, including income and estate taxation, disability and unemployment insurance, and support for equal opportunity programs. We find that more redistribution in the experiment is related to more support for redistribution regarding all policies. This suggests that the fairness preferences identified in this experiment are a fundamental preference underlying attitudes towards various policies.

Finally, researchers who seek to relate survey responses to individual fairness preferences may often not have the resources to accommodate a thorough experimental elicitation of these preferences. We validate that unincentivized survey questions included in the post-experimental questionnaire correlate strongly with the experimentally elicited preferences in Active Inequality situations. Hence, these survey items may constitute an economical alternative in the presence of organizational constraints.

This paper contributes to the literature that explores how contextual and personal factors determine individuals' redistributional preferences (Cappelen et al., 2020). With regard to personal factors, it has been studied how redistributional preferences are associated with risk preferences (Gärtner et al., 2017), depend on experienced inequality (Roth & Wohlfart, 2018), and respond to information on intergenerational mobility (Alesina et al., 2018) or inequality and the tax system (Kuziemko et al., 2015). In terms of contextual factors, it is well documented that many people reject inequality that is based on luck but accept inequality if stakeholders are responsible for their outcomes, for example, due to investment decisions (Cappelen et al., 2007), effort provision (Cappelen et al., 2010, Cappelen & Tungodden, 2017, Cappelen et al., 2022a, Schaube & Strang, 2025), or risk-taking (Cappelen et al., 2013, Mollerstrom et al., 2015).

Recent papers have studied situations where luck determines workers' expected returns or opportunities to exert effort (Andre, 2025, Bhattacharya and Mollerstrom, 2022, Dong et al., 2022, Preuss et al., 2023). From a meritocratic perspective, these situations yield interesting decision problems because individuals cannot easily disentangle the relative contributions of luck and effort and may need to contemplate counterfactuals. In contrast, the main innovation of our design is the introduction of passive inequality — having passive individuals profit from the actions of others. Because inequality is passive, spectators face a difficult decision problem even though they are perfectly informed about the relevance of luck and effort; the dilemma originates from the fact that they will infringe on meritocratic fairness no matter how they redistribute by either accepting passive inequality or effectively redistributing earned resources. Despite the differences between passive inequality and inequality due to lucky opportunities, a common element is that they involve both luck and effort. This raises the question of how redistribution levels in both cases compare. While Bhattacharya and Mollerstrom (2022) and Dong et al. (2022) find redistribution levels about midway between the luck and effort benchmarks, we find that Americans, redistribution decisions in the case of passive inequality are right at the pure effort benchmark, which is more in line with the results from Andre (2025).

While Bowles and Gintis (2002) and Stantcheva (2021) briefly discuss the dilemma of meritocracy and Benabou (2000) and Piketty and Saez (2013) study related issues theoretically, Cohen et al. (2022) and Lekfuangfu et al. (2023) are most closely related to our paper. In both studies, passive beneficiaries receive earnings (Cohen et al., 2022) or lotteries (Lekfuangfu et al., 2023) from other individuals. However, Lekfuangfu et al. (2023) do not examine the fairness preferences of impartial spectators but of the receivers, which introduces selfish motives. Perhaps more importantly, in both papers, benefactors and beneficiaries are strangers, while our sample includes pairs

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

of real-life friends. Contrary to our results, Cohen et al. (2022) and Lekfuangfu et al. (2023) find low redistribution levels close to the corresponding luck benchmarks, which suggests that meaningful relations between benefactors and beneficiaries are pivotal for the assessment of passive inequality.

Finally, our results may help to explain the opposition to redistributive policies. Several studies show that people's preferences regarding redistributive policies are strongly related to whether they find inequality fair or unfair (Alesina & Angeletos, 2005, Alesina & Giuliano, 2011, Stantcheva, 2021). At the same time, economic inequality is often passive, for instance, through differential bequests, education, or social environments (Chetty et al., 2016, Bowles & Gintis, 2002, Björklund et al., 2012, Kosse et al., 2020). Hence, our finding that individuals tend to consider inequality as fair if it is based on effort at some stage suggests that people may reject redistributive policies based on fundamental fairness preferences. Faced with two similarly unattractive options, many people might perceive passive inequality or unequal opportunity as the lesser evil and prioritize rewarding the efforts of those who pass on resources.

2. Theoretical framework

We are primarily interested in situations where individuals are not responsible for their outcomes themselves but profit — potentially to a differential extent — from the efforts of others. In such situations, fairness judgments may not only need to take into account whether inequality reflects differential luck or differential efforts but also balance fairness toward individuals who generated payments and toward individuals who receive these payments. To accommodate these situations, we extend the framework in Cappelen et al. (2013) and Almås et al. (2020) to allow for cases of passive inequality, in which the person responsible for an outcome is not identical to the person who receives that outcome. Still, our framework accommodates the special case of active inequality where the person responsible for an outcome also receives it. We derive behavioral hypotheses in Section 4.3, after introducing the experimental design.

2.1. Setup

We study distributional preferences in a situation in which a fixed sum of money is distributed between two individuals ("friends" F_X and F_Y), who each benefit from the effort of an associated worker (W_X and W_Y). F_X, F_Y, W_X and W_Y are labels for the subjects, not allocations of theirs. Moreover, F_X and F_Y may coincide with W_X and W_Y, respectively, in the case of active inequality, while they differ under passive inequality.

Workers exert effort for their respective friends because they are interested in their well-being. We use the terms "workers" and "friends" to make this altruism salient and to be consistent with our experimental design. However, one might also think of other relationships between workers and "friends." For instance, workers might be parents caring for their respective children. Let $e_{W_i} \geq 0$ denote the effort of worker $i \in \{X, Y\}$ and $e_{F_X} = e_{F_Y} = 0$ the effort of the two friends, who are entirely passive. After workers have exerted effort, an initial distribution between the two friends is realized, which may depend on effort levels or a random process.

We describe this distribution by the relative shares of the fixed sum of money that the two friends receive initially $(s_0, 1 - s_0)$. Without loss of generality, s_0 and X refer to the initially weakly disadvantaged party. In particular, we denote s_0 as the initial share of F_X, whom we assume to be the initially weakly disadvantaged friend, that is, $s_0 \leq 0.5$.

Consider an impartial spectator who observes this situation and contemplates whether the distribution is fair or should be altered. Spectators are impartial in the sense that they do not receive a material benefit but incur disutility if they perceive the distribution between the two friends to be

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

unfair. We assume that the spectator's utility function is given by

$$V(s|\sigma) = -\frac{\alpha}{2}\underbrace{(s - s^f_W(\sigma))^2}_{\substack{\text{deviation from}\\ \text{what is fair}\\ \text{toward workers}}} - \frac{1-\alpha}{2}\underbrace{(s - s^f_F(\sigma))^2}_{\substack{\text{deviation from}\\ \text{what is fair}\\ \text{toward friends}}}. \tag{1}$$

In that expression, σ encodes information about the situation. The spectator's fairness judgments in situation σ are expressed by the relative shares $s^f_W(\sigma)$ and $s^f_F(\sigma)$, which describe the distributions $(s^f_L(\sigma), 1 - s^f_L(\sigma), L \in \{W, F\})$, that the spectator considers fair toward the workers and friends, respectively. Quadratic loss functions capture the disutility from distributions that deviate from what is considered fair, and $\alpha \in [0, 1]$ governs how the spectator balances fairness toward workers and friends. Solving the corresponding maximization problem yields the distribution the spectator finds fair overall, given by

$$s^r(\sigma) = \alpha\, s^f_W(\sigma) + (1-\alpha)\, s^f_F(\sigma). \tag{2}$$

Under the given functional form assumptions, the spectator's preferred distribution is a linear combination of the distribution considered fair toward the workers and the distribution considered fair toward the friends, with weights α and $1 - \alpha$, respectively.

2.2. Fairness types, fairness judgments, and the dilemma of meritocracy

Let us turn to the question of how spectators make fairness judgments. We follow the literature by assuming that spectators endorse either an egalitarian (E), libertarian (L), or meritocratic (M) fairness type τ.

Egalitarians ($\tau = E$):

An egalitarian is convinced that total resources should be distributed equally in any case. Hence, the distribution perceived fair toward workers as well as friends is given by $s^f_W(\sigma) = s^f_F(\sigma) = s^f(\sigma) = \frac{1}{2}$. Because perceived fair shares coincide, egalitarians do not encounter a conflict in the case of passive inequality, and the preferred distribution is $s^r(\sigma) = \frac{1}{2}$.

Libertarians ($\tau = L$):

A libertarian does not value equality but advocates the opposing standpoint that one should not intervene in the allocation process and therefore accepts the initial allocation. The perceived fair distributions are given by $s^f_W(\sigma) = s^f_F(\sigma) = s^f(\sigma) = s_0$ and the overall preferred distribution is $s^r(\sigma) = s_0$.

Meritocrats ($\tau = M$):

In between, meritocrats think that distributions should reflect individual merits: $s^f_L(\sigma) = \frac{e_{L_X}}{e_{L_X}+e_{L_Y}}$ if $e_{L_X}+e_{L_Y} > 0$ and $s^f_L(\sigma) = \frac{1}{2}$ if $e_{L_X}+e_{L_Y} = 0$, with $L \in \{W, F\}$. Hence, in the case of passive inequality, meritocrats may face a dilemma: Because friends do not exert any effort, but their associated workers may exert different levels of effort ($e_{W_X} \neq e_{W_Y}$), it follows that $s^f_F = \frac{1}{2}$ but usually $s^f_W = e_{W_X}/(e_{W_X} + e_{W_Y}) \neq \frac{1}{2}$ — merit judgments conflict. As a consequence, meritocrats need to balance fairness toward workers and friends, and the overall perceived fair share is given by

$$s^r(\sigma) = \alpha\, \frac{e_{W_X}}{e_{W_X} + e_{W_Y}} + (1-\alpha)\, \frac{1}{2}. \tag{3}$$

We denominate this phenomenon the *Dilemma of Meritocracy*. If one worker chooses to exert higher effort for the sake of his friend than the other, this pulls the meritocrat toward a distribution

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

between friends that reflects these differences in effort. Conversely, both friends are passive and none merited more resources than the other, which pulls the meritocrat toward an egalitarian distribution. The weighting parameter α that governs how this dilemma is handled may be interpreted as the relative importance of the workers' and the friends' perspectives in the meritocrat's overall fairness judgment.

2.3. Active inequality

Our framework nests the case of active inequality studied in existing research, where each worker is identical to his associated friend, $W_i \equiv F_i$. This implies that $e_{W_i} = e_{F_i}$ and fairness judgments toward workers and friends coincide for all fairness types: $s^f_W = s^f_F = s^f$. The spectator's utility function collapses to $V(s|\sigma) = -(s - s^f(\sigma))^2$, and the solution is simply $s^r(\sigma) = s^f(\sigma)$, such that one reobtains the formulation used in Cappelen et al. (2013) and Almås et al. (2020).

3. Experimental design

Our experiment builds on the impartial spectator paradigm (Konow, 2000, Cappelen et al., 2013) and consists of two stages. In the earnings stage, an initial (pre-redistribution) allocation of \$10 between two stakeholders is determined. In the redistribution stage, impartial spectators may redistribute the \$10 between the two stakeholders to determine the final (post-redistribution) allocation. We are primarily interested in spectators' redistribution decisions; the earnings stage is used to incentivize these decisions.

3.1. The earnings stage

In the earnings stage, we implement four treatment conditions in a between-subjects design. In all conditions, subjects work on a real-effort task in which they have to reposition sliders into the middle position (Gill & Prowse, 2012). Each task has a fixed duration of 30 seconds and requires repositioning 5 sliders, which is easy to achieve. Hence, completing tasks is solely a matter of effort and time, but not ability. After workers have completed their participation, they are divided into pairs of two. Treatments differ in two dimensions. One dimension varies whether the initial distribution of the \$10 is determined by a random draw ("Luck") or reflects the relative number of completed tasks ("Effort"). The other dimension varies whether the \$10 is distributed between a pair of workers themselves ("Active Inequality") or whether each worker designates a real-life friend and the \$10 is distributed between the two friends of a pair of workers ("Passive Inequality").

Working with real-life friends has organizational advantages over, for example, the stricter requirement that workers designate a beneficiary among their family members. At the same time, friendship ties capture two central aspects of relationships between benefactors and beneficiaries that may be prerequisites for the dilemma of meritocracy: There is a meaningful relationship between workers and their friends, and workers are more altruistic toward their own friend than toward the friend of the other worker (Gächter et al., 2015).[2]

The 2x2 earnings stage variation results in the following conditions, summarized in Table 1:

- **Active Inequality & Luck:** Workers complete exactly 20 tasks. \$10 are distributed between the two workers of a pair. The initial distribution is determined by a random draw. Each distribution is equally likely.

[2]One might be concerned that spectators' redistribution decisions are affected by the possibility that passive friends share their earnings with their associated worker after the experiment. Based on an analysis of subjects' answers to open-text questions about the reasoning behind their decisions, Online Appendix D.1 suggests that this is not the case.

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

Table 1. Features of treatment arms

Treatment	10 dollars distr. betw.	# Tasks completed	Initial allocation
Active Ineq. & Luck	Workers	$e_x = e_y = 20$	$s_0 \sim U[0,1]$
Active Ineq. & Effort	Workers	$e_x, e_y \in [0,40]$	$s_0 = e_x/(e_x + e_y)$
Passive Ineq. & Luck	Workers' friends	$e_x = e_y = 20$	$s_0 \sim U[0,1]$
Passive Ineq. & Effort	Workers' friends	$e_x, e_y \in [0,40]$	$s_0 = e_x/(e_x + e_y)$

Note: e_x and e_y denote the number of tasks by worker X and Y, respectively. $U[\cdot]$ denotes the uniform distribution, and s_0 denotes the share of the $10 allocated to stakeholder X according to the initial distribution. The share of the $10 allocated to stakeholder Y according to the initial distribution always equals $1 - s_0$.

- **Active Inequality & Effort:** Workers choose to complete between 0 and 40 tasks. $10 are distributed between the two workers of a pair. The initial distribution corresponds to the relative number of completed tasks.
- **Passive Inequality & Luck:** Workers complete exactly 20 tasks. Each worker chooses a real-life friend, and $10 is distributed between the workers' friends. The initial distribution is determined by a random draw. Each distribution is equally likely.
- **Passive Inequality & Effort:** Workers choose to complete between 0 and 40 tasks. Each worker chooses a real-life friend, and $10 is distributed between the workers' friends. The initial distribution corresponds to the relative number of completed tasks.

Before they start working, workers know whether they generate earnings for themselves or a real-life friend and how the initial allocation is determined. They also know that another person's decision may affect their (or their friend's) payoff, but not how. Workers (and their friends) never observe the initial allocation or spectators' decisions. Friends are entirely passive.[3]

Workers make a final decision at the end of the earnings stage. We ask workers in the Active Inequality conditions how they would distribute an additional $10 between themselves and the worker they are matched to if they could freely decide. Likewise, we ask workers in the Passive Inequality conditions how they would distribute $10 between their own friend and the friend of the worker they are matched to. Workers are incentivized to report their preferences truthfully, as we would randomly draw one worker and implement his or her preference. We will later refer to these decisions as dictator decisions.

3.2. The redistribution stage

In the redistribution stage, unrelated subjects ("impartial spectators") can redistribute the $10 between pairs of workers or workers' friends. Based on the four conditions from the earnings stage, we implement a 2x2 within-subjects design in the redistribution stage. Before they make a redistribution decision, spectators learn whether $10 is distributed between workers or passive friends, whether the initial allocation was determined by a random draw or according to the relative number of completed tasks, and the initial allocation.

[3]To keep spectators' decisions as simple as possible, we deliberately decided against having workers distribute their earnings between their own friend and the friend of the other worker in the Passive Inequality conditions. A potential downside of this decision is that workers' preferences are not perfectly known to spectators. In particular, if spectators believe that workers prefer equal distributions, they can implement a distribution (50/50) that is fair both towards workers and friends, and there is no dilemma even in the Passive Inequality & Effort condition. However, as spectators knew that workers self-selected the person who would profit from their participation, it seems likely that spectators believe that workers prefer to pass on their earned resources to their beneficiaries over a 50/50 split. Moreover, even if spectators believed that workers wanted the money to be split equally between the receivers, this would not invalidate but strengthen our conclusions: Whereas meritocratic spectators should equalize payoffs between beneficiaries, we actually observe very *little* redistribution.

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

We tried to provide this information to our general population sample as comprehensible as possible. To this end, we created one slide show for each condition that uses text and graphical illustrations to explain how the initial distribution was generated and how spectators could make a decision. Figure H.17 in the online appendix shows one slide from the Passive Inequality & Effort condition. We explicitly told spectators that in the Effort treatments, the money was initially distributed purely based on relative effort, not on ability or luck. To make that point even clearer, we let spectators try out the slider task themselves. Moreover, all spectators took part in a quiz that tested their comprehension of the instructions before making their redistribution decisions, and our results are robust to conditioning on the subset of spectators who did not make any errors.

Spectators make their decision by entering the final distribution in the form of relative shares of the two workers (in the Active Inequality conditions) or friends (in the Passive Inequality conditions) in a table that also contains condensed information about the situation. Figure H.18 in the online appendix shows a screenshot of the decision screen in the Passive Inequality & Effort condition; the other decision screens had the same structure. The fields where spectators enter the relative shares are initially empty, which means that there is no status quo distribution. Hence, spectators have to enter their preferred relative shares before proceeding, which has the advantage that we do not falsely classify "lazy" spectators as libertarians. To focus on the fairness aspect of the redistribution problem, we abstract from a potential fairness-efficiency tradeoff (Almås et al., 2020) by making redistribution costless.

Similar to recent studies that use the impartial spectator design (Schaube & Strang, 2025), we employ a variant of the strategy method introduced by Bardsley (2000). For each spectator, we construct a set of six initial allocations that consists of one initial allocation from a randomly drawn situation that has occurred in the earnings stage and five hypothetical initial allocations that are constant across all spectators. The hypothetical initial allocations are $(0.00, 10.00)$, $(1, 9)$, $(2.2, 7.8)$, $(3, 7)$, and $(3.8, 6.2)$. We use hypothetical initial allocations to keep the initial allocations constant across spectators.[4] These initial allocations yield a block of 6 situations within each of the 4 conditions – 24 situations in total – for which we ask spectators to make redistribution decisions. Spectators make redistribution decisions for all situations within a block before they proceed to the next one. After each block, they are prompted to briefly describe the reasoning behind their decisions. We randomize the order of blocks as well as the order of situations within each block between subjects.

To incentivize the redistribution decisions, each spectator was matched with one group of workers or one group of workers and their friends, respectively. The condition and realized initial distribution from that group corresponds to the spectator's true scenario. Since economic reasons required us to sample fewer groups than spectators, each group was matched with several spectators. Among all spectators matched to a particular group, one was randomly selected after data collection and his or her redistribution decision for the true scenario determined the group's final allocation relevant for workers' (friends') payments. Spectators know that some situations are hypothetical and that we randomly select one spectator for each pair of workers (friends) whose decision for the relevant situation is implemented. Because spectators do not know whether a decision is potentially relevant or not and which situations are hypothetical, all decisions are probabilistically incentivized.

Concluding the experimental part of the survey, we elicit spectators' beliefs about workers' dictator decisions. Separately for workers in the Active Inequality and Passive Inequality conditions, we ask spectators to guess how much workers, on average, kept for themselves or gave to their own friends, respectively. Spectators receive a bonus of \$0.20 for each guess with less than \$0.20 distance to the actual value, such that guesses are incentivized as well.

[4]If the initial allocation in the randomly drawn situation was identical to one of the hypothetical initial allocations, the respective hypothetical initial allocation was replaced by a "backup" allocation. This case applied for 52 spectators. We let spectators guess which situation they saw was the true one in a pilot of this study. Like Andre (2025), we found that spectators did not do better than expected by chance at detecting the true situation. These results are available upon request. We did not include this item in the main study to keep the survey short.

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

Subsequently, we ask spectators qualitatively to what extent they find luck-based and effort-based (active) inequality between two individuals fair. Because it may be too expensive or time-consuming to elicit incentivized experimental measures of fairness preferences in some surveys, it is useful to know whether such short nonincentivized survey measures can be employed as substitutes. Online Appendix G provides evidence that this is the case, as the corresponding survey- and experimental measures are highly correlated. Finally, spectators complete a brief questionnaire on their general attitudes toward inequality, their assessment of various policies related to inequality and redistribution, and sociodemographic characteristics.

3.3. Procedures

3.3.1. Workers and friends

The earnings stage was conducted online in March 2022 and implemented using oTree (Chen et al., 2016). Workers were recruited from the BonnEconLab subject pool via Hroot (Bock et al., 2014). The invitation mail informed potential participants that some of them would be able to generate a payment for a real-life friend. In the confirmation email, workers in the Passive Inequality conditions received a link that they had to pass on to a friend. Via that link, friends had to give us their bank details. On the next day, the corresponding workers received another email with a participation link only if a friend had given us their bank details, such that we could ensure to make all payments. Workers in the Active Inequality conditions were informed in the confirmation email that they were not among those participants who could generate a payment for a friend and received an email with a participation link on the next day as well. All workers could start immediately when they received the participation link and had time to conclude their participation until the end of the day.

In the earnings stage itself, workers had to enter their own bank details before they received condition-specific instructions and entered the work stage. Workers in the Effort conditions could choose how many tasks to complete, whereas workers in the Luck conditions had to complete exactly 20 tasks.[5] After the work stage, workers had to make their respective dictator decisions to conclude their participation.

In total, 43 workers completed their participation in the earnings stage, 21 in the Active Inequality conditions, and 22 in the Passive Inequality conditions. All payments to the (German) workers and friends were made in Euros but presented to the (American) spectators in US dollars and chosen such that the dollar values were round numbers. In the Active Inequality conditions, each worker received a fixed payment of $3, and $10 was distributed between two workers each. In the Passive Inequality conditions, each worker received a fixed payment of $5, each friend received a fixed payment of $3, and $10 was distributed between two friends each. Hence, the total payments of the receivers of the $10 (the workers in the Active Inequality conditions and the friends in the Passive Inequality conditions) were identical for all treatments.[6] In addition, one among all 43 workers' dictator decisions was randomly selected and implemented, in addition to all other payoffs, as announced during the study. Payoffs were presented in the form of experimental currency during the earnings stage but eventually made in euros via bank transfer.

3.3.2. Spectators

The redistribution stage was conducted online in late April 2022 and implemented using oTree as well. We recruited 552 adult US citizens via the survey provider Prolific, which has been shown to

[5]Workers could at most attempt 60 tasks until the work stage was automatically concluded. One worker in the Luck conditions did not manage to complete 20 tasks with 60 attempts and did not generate a payment, as was announced beforehand.

[6]Our design holds the receivers' total payments constant across conditions because we are interested in how spectators redistribute across receivers. Because we had to pay workers in the Passive Inequality conditions a show-up fee, total payments were higher than in the Active Inequality treatments. However, spectators only received information on the payments to the receivers.

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

provide higher data quality than comparable companies (Palan & Schitter, 2018, Peer et al., 2021). In addition to incentivizing redistribution decisions, we took several measures to further promote quality responses, including two attention checks, control questions for each block of redistribution decisions, and graphical instructions that were designed to be engaging. Details and data quality checks are presented in Online Appendix A, which also provides evidence that spectators recognized and understood the differences between treatments.

Spectators were recruited in two waves within the same week.[7] The first and second wave contained 75 and 477 spectators, respectively. Because participants from the first wave were not excluded from participating in the second wave, nine spectators participated twice. We only include the first observation from these participants, such that we end up with a sample of 543 spectators. The median completion time in the first wave was 21 minutes and subjects earned a base rate of $3.97 plus bonus payments. The median completion time in the second wave was slightly longer at 25 minutes, and participants earned a base rate of $3.34 plus bonus payments. For the second wave, Prolific recruited a sample representative of the US adult population aged 18 or older regarding the joint distribution of age, sex, and ethnicity. This was impossible for the first wave due to the low number of participants. Yet, as shown in Table I.7 in the online appendix, our total spectator sample is representative of the adult US population in terms of age, gender, and ethnicity. In contrast, our sample overrepresents the well-educated and underrepresents the top quartile of the income distribution, which is common for survey samples (Stantcheva, 2023). The study was preregistered at the AER RCT Registry (RCT ID: AEARCTR-0009186). The instructions for the spectator session and the pre-analysis plan can be accessed here: https://doi.org/10.1257/rct.9186.

4. Empirical analysis

4.1. Main variables

Independent Variables.

Our main independent variables are the indicators P_σ ($=1$ if situation σ features passive inequality) and E_σ ($=1$ if the initial allocation in situation σ is based on effort). Both indicators together describe the treatment condition situation σ was embedded in. Further, we define the initial extent of inequality $\Delta_\sigma = 0.5 - s_0$, which allows us to investigate whether redistribution decisions depend on how much inequality is present in the initial allocation.

Dependent Variables.

Observing that a spectator implements ($4, $6) as the final allocation indicates very different redistributional preferences if the initial allocation was ($2, $8) instead of ($4, $6). In the former case, the spectator reduces inequality while in the latter inequality is left constant. To differentiate between such cases, our analysis needs to take into account that the initial allocation varies across situations.[8] Hence, as pre-registered, we define as our main outcome variable the extent of redistribution implemented by spectator i in situation σ,

$$\theta_{i,\sigma} = \frac{s_i^r - s_0}{0.5 - s_0}. \tag{4}$$

[7] The first served as a soft launch to test for technical issues. Indeed, during the first wave, we recognized that for some of the spectators, one hypothetical initial allocation was always replaced by the backup allocation due to a bug, which we fixed immediately. Because there is nothing inherently special about our preselected hypothetical initial allocations, this is not a big issue, though, and the respective decisions/observations are treated like all other decisions and as described in Section 4.2.

[8] This is different from existing studies on fairness preferences in the context of active inequality, where usually one of the two workers receives all of the money in the initial distribution (see e.g. (Cappelen & Tungodden, 2017, Schaube & Strang, 2025, Cappelen et al., 2022b, Almås et al., 2020)). In that case, it suffices to normalize that the first worker is the initially disadvantaged one (or vice versa) and consider how much that worker receives after redistribution.

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

The extent of redistribution describes the fraction of inequality in the initial situation that is equalized by spectator i's redistribution decision. $\theta_{i,\sigma} = 1$ indicates that spectator i completely equalizes payoffs in situation σ while $\theta_{i,\sigma} = 0$ means that i accepts the initial allocation. For some analyses, we use the average of spectator i's redistribution decisions within a given condition, which we refer to as the average extent of redistribution, $\bar{\theta}_{i,c}$, $c \in \{\text{A-L, A-E, P-L, P-E}\}$.

4.2. Exclusion criteria and restricted sample

To ensure high data quality, we remove some observations from our main sample as preregistered. First, we drop spectators who fail both attention checks. Second, if a spectator rushes unreasonably fast through the instructions for a given block of redistribution decisions, we drop the decisions of that spectator for the corresponding condition. Third, we only include observations for situations that all spectators encountered because these are constant across spectators and admit a clean comparison. Hence, the main sample does not include observations based on a true scenario (except if that scenario coincides with a hypothetical one) or the backup scenario.

Based on the main sample, we further construct a restricted sample that disregards observations that cannot be reconciled with the fairness ideals prevalent in the literature, which was preregistered as well. First, we drop observations that imply $\theta_{i,\sigma} < 0$ (the spectator redistributes money from the already disadvantaged beneficiary to the already advantaged beneficiary) or $\theta_{i,\sigma} > 1$ (the spectator redistributes more to the initially disadvantaged beneficiary than what would lead to a 50/50 split). While such decisions should not prematurely be characterized as "noise" or "irrational," we cannot explain these decisions within our framework, and our hypotheses do not pertain to such behavior. Second, we completely drop a spectator from the restricted sample if we disregard three or more decisions of that spectator within any of the four conditions, either because the spectator rushed or because too many decisions imply $\theta_{i,\sigma} \notin [0, 1]$.

Starting with 543 spectators and 13,032 decision observations, we end up with 543 spectators and 10,236 decision observations in the main sample and 437 spectators and 8,399 observations in the restricted sample. Online Appendix B provides an overview of the number of spectators/observations dropped for each criterion. Unless indicated differently, the results presented in the paper are based on the restricted sample. However, results do not differ notably if we consider the main sample or all of the 13,032 observations for which our main outcome measure is defined, that is, where the initial allocation is not 50/50.

4.3. Behavioral predictions and preregistered hypotheses

The theoretical framework outlined in Section 2 makes nuanced individual-level predictions about what kinds of behavioral patterns we should observe across the four treatment conditions, given a subjects' fairness type: Egalitarians always prefer equal distributions, libertarians always go with the initial distribution, and meritocrats prefer distributions that reflect relative effort. Given that $e_{W_X}/(e_{W_X} + e_{W_Y})$ equals 1/2 in the Luck conditions and s_0 in the Effort conditions, the expression for the perceived fair share (Equation 2) collapses to numbers for each of the three fairness types. Plugging these numbers into the definition of the extent of redistribution (Equation 4) yields predictions on the extent of redistribution spectators with different fairness types implement in the different conditions. These predictions are summarized in Table 2.

Assuming that all types are present in our sample, these predictions imply that the four conditions should be ordered in terms of the average extent of redistribution as follows: $\bar{\theta}_{A-L} = \bar{\theta}_{P-L} \geq \bar{\theta}_{P-E} \geq \bar{\theta}_{A-E}$, with at least one of the inequalities being strict. Based on the individual-level predictions and this expected ordering, we derive the following four (preregistered) aggregate-level predictions that

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

Table 2. Predicted extent of inequality (θ, share) by condition and fairness type

Condition	Egalitarians	Libertarians	Meritocrats
Active Ineq. & Luck	1	0	1
Active Ineq. & Effort	1	0	0
Passive Ineq. & Luck	1	0	1
Passive Ineq. & Effort	1	0	$1-\alpha$

we will formally test using ordinary least squares (OLS) regressions and clustering standard errors on the spectator level:

Hypothesis 1. Spectators redistribute less if inequality is based on effort instead of luck.

Because this hypothesis should hold both in the active inequality domain (H1a) and – weakly – in the passive inequality domain (H1b), we will test it separately within both domains. Formally, we estimate the following (regression) equation:

$$\theta_{i,\sigma} = \beta + \beta_E \cdot E_\sigma + \delta \cdot \Delta_\sigma + \varepsilon_{i,\sigma}. \tag{5}$$

We preregistered to test $H_0 : \beta_E = 0$ against $H_1 : \beta_E \neq 0$ and interpret $\beta_E < 0$ and the rejection of H_0 as evidence in favour of Hypothesis 1.

Hypothesis 2. Spectators redistribute more if inequality is passive.

Pooling the data from the Luck and Effort conditions, we estimate

$$\theta_{i,\sigma} = \beta + \beta_P \cdot P_\sigma + \delta \cdot \Delta_\sigma + \varepsilon_{i,\sigma}, \tag{6}$$

and test $H_0 : \beta_P = 0$ against $H_1 : \beta_P \neq 0$ as preregistered, interpreting $\beta_P > 0$ and the rejection of H_0 as evidence in favour of Hypothesis 2.

Hypothesis 3. The higher extent of redistribution in the case of passive inequality is driven by situations in which inequality is based on effort.

To test whether the fact that inequality is passive only matters if the initial allocation is based on effort, we estimate the following difference-in-difference-like regression equation:

$$\theta_{i,\sigma} = \beta + \beta_E \cdot E_\sigma + \beta_P \cdot P_\sigma + \beta_{E,P} \cdot E_\sigma \cdot P_\sigma + \delta \cdot \Delta_\sigma + \varepsilon_{i,\sigma}. \tag{7}$$

In accordance with our pre-analysis plan, we test $H_0^a : \beta_P = 0$ against $H_1^a : \beta_P \neq 0$ and $H_0^b : \beta_{E,P} = 0$ against $H_1^b : \beta_{E,P} \neq 0$. We interpret the results as evidence in favour of Hypothesis 3 if we find $\beta_{E,P} > 0$ and reject H_0^b but not H_0^a.

Hypothesis 4. The higher extent of redistribution in the case of passive inequality, due to situations in which inequality is based on effort, is driven by meritocrats.

Due to the within-subjects design, we can relate individual redistribution patterns across conditions. We will classify spectators into the three fairness types (and a residual type) based on their

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

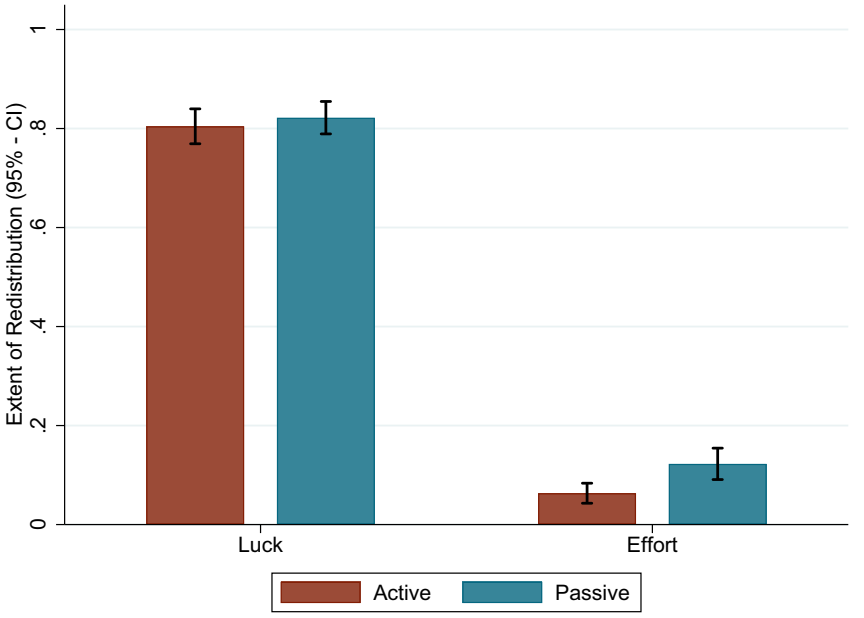

Figure 1. Average extent of redistribution $\bar{\theta}_{i,c}$ by treatment condition

Note: This figure displays the average extent of redistribution $\bar{\theta}_{i,c}$ by treatment condition, together with 95%-confidence intervals. Averages are taken over all decisions of all subjects in the restricted sample. Confidence intervals are based on standard errors clustered on the spectator level. Figure H.16 in the online appendix shows analogous results using the full sample.

decisions in the Active Inequality conditions (details follow later) and estimate

$$\begin{aligned}\theta_{i,\sigma} = &+ \beta^{E} &&+ \beta^{L}L_i &&+ \beta^{M}M_i &&+ \beta^{NC}NC_i \\ &+ \beta^{E}_{E}E_\sigma &&+ \beta^{L}_{E}E_\sigma L_i &&+ \beta^{M}_{E}E_\sigma M_i &&+ \beta^{NC}_{E}E_\sigma NC_i \\ &+ \beta^{E}_{P}P_\sigma &&+ \beta^{L}_{P}P_\sigma L_i &&+ \beta^{M}_{P}P_\sigma M_i &&+ \beta^{NC}_{P}P_\sigma NC_i \\ &+ \beta^{E}_{E,P}E_\sigma P_\sigma &&+ \beta^{L}_{E,P}E_\sigma P_\sigma L_i &&+ \beta^{M}_{E,P}E_\sigma P_\sigma M_i &&+ \beta^{NC}_{E,P}E_\sigma P_\sigma NC_i \\ &&&&&&&+ \delta\Delta_\sigma + \varepsilon_{i,\sigma}. \quad (8)\end{aligned}$$

Here, egalitarians are the baseline type and L_i (libertarian), M_i (meritocrat), and NC_i (non-classified) are indicators that equal 1 if spectator i is classified into the corresponding fairness type. As preregistered, we test $H_0^a : \beta^M_{E,P} = 0$ against $H_1^a : \beta^M_{E,P} \neq 0$ and $H_0^b : \beta^M_{E,P} = \beta^L_{E,P}$ against $H_1^b : \beta^M_{E,P} \neq \beta^L_{E,P}$ and interpret the results as evidence in favour of the hypothesis if $\beta^M_{E,P} > 0$, $\beta^M_{E,P} > \beta^L_{E,P}$, and we reject both H_0^a and H_0^b.

5. Results

First, we compare the average extent of redistribution between treatment conditions, displayed in Figure 1. Averages are taken over all decisions of all subjects in the restricted sample.

Comparing redistribution levels between Active Inequality & Luck and Active Inequality & Effort, we replicate what many studies have documented before: Under active inequality, where workers' actions determine their own earnings and spectators do not need to balance potentially conflicting fairness ideals, they redistribute much less if distributions reflect differential effort than if they are based on a random draw.

Consistent with our theoretical considerations from Section 2, a comparison of redistribution levels between Active Inequality & Luck and Passive Inequality & Luck shows that it makes no

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

difference whether inequality is active or passive in the Luck domain: The difference is insignificant and small both in absolute and relative terms.[9] This indicates that in the Luck domain, given that in either case the initial distribution is not tied to relative effort, it does not matter whether the money goes to the workers themselves or to their passive friends.

To judge how spectators deal with the dilemma of meritocracy, we examine how the average extent of redistribution in Passive Inequality & Effort compares to the Active Inequality & Luck and Active Inequality & Effort benchmarks. As displayed in Figure 1, the fraction of inequality that is equalized in Passive Inequality & Effort (8%) is significantly higher than the share that is equalized in Active Inequality & Effort (5%).[10] However, the key takeaway is that the average extent of redistribution in Passive Inequality & Effort is much closer to the Active Inequality & Effort benchmark than to the Active Inequality & Luck benchmark (80%). This is consistent with our theoretical considerations from Section 2, but given that any magnitude between the two benchmarks would have been similarly consistent, this result may almost be considered a corner solution. Speaking in model terms, the data suggest that spectators "have a high α": they prioritize fairness toward the workers — whose effort is reflected in the initial distribution — and accept that in the Passive Inequality case the beneficiaries end up with different shares even though one did not "merit" more than the other. Overall, these results suggest that spectators treat the dilemma of meritocracy by prioritizing fairness toward the workers over fairness toward the friends.

5.1. The aggregate level: Testing the hypotheses

To test the hypotheses from Section 4.3, we estimate the corresponding preregistered regression equations using OLS regressions. All reported equations control for the initial extent of inequality in a given situation (Δ_σ), and standard errors are always clustered on the spectator level. The results are reported in Table 3. The titles below the column numbers indicate which hypothesis is referred to.

The estimates in columns (1) and (2) indicate that, both in the case of Active Inequality and Passive Inequality, spectators redistribute significantly less if the initial distribution is based on effort rather than luck. The differences in the average extent of redistribution amount to 76%p (Active Inequality) and 73%p (Passive Inequality), respectively.

> In both the Active Inequality and the Passive Inequality domain, spectators redistribute considerably less on average if inequality is based on effort instead of luck.

Moving to the regression equation in column (3), which makes use of all observations in the restricted sample, we see that spectators redistribute significantly more if inequality is passive. Consistent with Hypothesis 2, the average extent of redistribution is 2.2%p higher if the money is distributed between passive friends instead of the workers themselves. Yet, in contrast to the magnitude of the difference in redistribution levels between Effort and Luck situations, the effect is almost negligible. We summarize these observations in the following result:

> Spectators redistribute significantly more if inequality is passive. However, the magnitude of the effect is small.

The remaining columns, (4)–(6), test for an interaction effect: Does the fact that payoffs are passive matter more if the initial distribution is based on workers' relative effort levels instead of a random draw? Whereas the difference in average redistribution levels between Passive Inequality and

[9] $d = 0.007$ and $p = 0.62$ in an OLS regression of the form $\theta_{i,\sigma} = \beta + \beta_P \cdot P_\sigma + \varepsilon_{i,\sigma}$, using only observations from the Luck domain and clustering standard errors on the spectator level.

[10] $d = 0.034$ and $p < 0.001$ in an OLS regression of the form $\theta_{i,\sigma} = \beta + \beta_P \cdot P_\sigma + \varepsilon_{i,\sigma}$, using only observations from the Effort domain and clustering standard errors on the spectator level.

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

Table 3. Treatment effects on the extent of redistribution

	Dependent Variable: Extent of Redistribution ($\theta_{i,c}$, Share)					
	Restricted Sample				Main Sample	Full Sample
	(1) H1a	(2) H1b	(3) H2	(4) H3	(5) H3	(6) H3
Effort (E_σ)	-.757***	-.730***		-.757***	-.747***	-.741***
	(.019)	(.019)		(.019)	(.02)	(.02)
Passive (P_σ)			.022**	.007	.021	.017
			(.009)	(.014)	(.015)	(.016)
Effort (E_σ) × Passive (P_σ)				.027	.022	.042**
				(.016)	(.019)	(.021)
Initial Inequality (Δ_σ)	.031*	.035*	.024	.033**	.079***	.054
	(.018)	(.019)	(.015)	(.015)	(.019)	(.042)
Constant	.795***	.801***	.421***	.794***	.784***	.789***
	(.018)	(.018)	(.011)	(.018)	(.019)	(.024)
Included Treatments	A-L & A-E	P-L & P-E	All	All	All	All
Clusters	437	437	437	437	543	543
Observations	4,203	4,196	8,399	8,399	10,236	12,448
R^2	.62	.575	.001	.598	.488	.364

Note: This table reports results from OLS regressions of the extent of redistribution implemented by spectator *i* in situation σ on treatment indicators, controlling for the initial extent of inequality in situation σ. Columns (1) and (2) correspond to Equation 5 and estimate the difference between redistribution in the Effort versus Luck case, once in the Active Inequality and once in the Passive Inequality domain. Column (3) corresponds to Equation 6 and estimates the difference between redistribution if inequality is active versus passive, pooling Effort and Luck situations. Columns (4)–(6) correspond to Equation 7 and interact both treatment dimensions using observations from all treatment conditions. For information on the composition of the different subsamples, see Section 4.2. Standard errors (in parentheses) are clustered on the spectator level. Table I.5 in the online appendix shows results for columns (1)–(4) using the full sample.
* $p < .1$, ** $p < .05$, *** $p < .01$.

Active Inequality situations is less than $1\%p$ if the initial distribution is determined by luck, this difference is about five times as large ($0.007 + 0.027$) if the initial distribution is proportional to workers' relative effort. The interaction effect is still small, however, and just short of reaching statistical significance. The numbers and qualitative patterns are very similar if the same equation is estimated on the main sample (column (5)), which includes observations that cannot be reconciled with commonly considered fairness ideals, that is, $\theta_{i,\sigma} \notin [0, 1]$. Similarly, results change little if we consider the full sample (column (6)), which includes situations based on true scenarios and from blocks where spectators rushed through the instructions, albeit the interaction effect is statistically significant here. Relative to our main regression equation in column (4) the share of variance explained drops sharply in columns (5) and (6), which indicates that our sample restrictions successfully reduce the amount of noise in the data. Overall, we interpret these observations as (partial) support in favor of Hypothesis 3:

> The higher extent of redistribution in the case of passive inequality is, if anything, driven by situations in which inequality is based on effort.

5.2. The individual level: Redistribution patterns & fairness types

Our within-subjects design has the advantage that we can classify spectators into redistribution patterns corresponding to each of the three fairness types discussed in Section 2.2: egalitarians (E), libertarians (L), and meritocrats (M). Since we elicit participants' decisions under active and passive inequality, we estimate their redistribution pattern for both types of inequality separately. Let $d \in \{A, P\}$ indicate the inequality domain. We define a spectator's redistribution pattern $\tau_{i,d}$, as

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

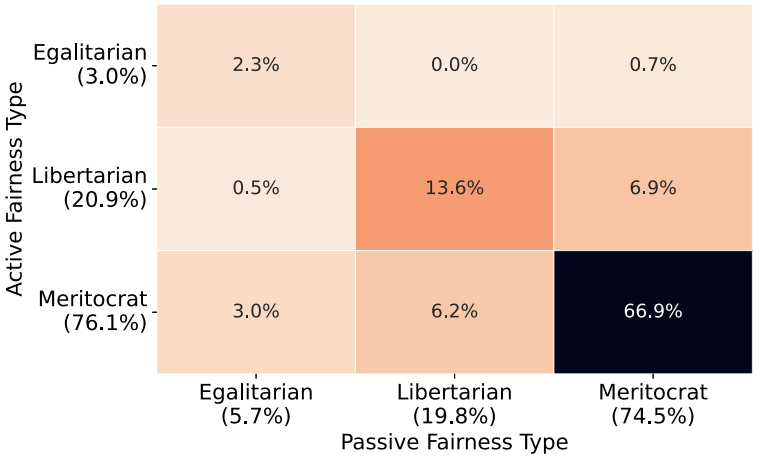

Figure 2. Two-dimensional redistribution patterns
Note: This moving matrix displays the distribution of spectators over two-dimensional redistribution patterns. Fairness types under active inequality are shown on the vertical axis. Redistribution patterns under passive inequality are shown on the horizontal axis. The figure disregards two spectators who are nonclassified in at least one dimension.

follows:

$$\tau_{i,d} = \begin{cases} E & \text{if } \bar{\theta}_{i,d-L} \geq 0.5 \text{ and } \bar{\theta}_{i,d-E} \geq 0.5 \\ M & \text{if } \bar{\theta}_{i,d-L} \geq 0.5 \text{ and } \bar{\theta}_{i,d-E} < 0.5 \\ L & \text{if } \bar{\theta}_{i,d-L} < 0.5 \text{ and } \bar{\theta}_{i,d-E} < 0.5 \\ NC & \text{else,} \end{cases}$$

where NC describes a residual class of "Nonclassifieds." To follow the literature, we define fairness types based on the redistribution patterns under Active Inequality. When comparing Active Inequality and Passive Inequality, we use the more general term "redistribution pattern." Notably, spectators might have a meritocratic fairness type but an egalitarian redistribution pattern under Passive Inequality. Our empirical classification has looser limits than the theoretical definition used in Section 2.2 since we anticipated actual decisions to contain noise. The shares of classified spectators who decide perfectly in line with one fairness type according to the theoretical classification are 63% for Active Inequality and 69% for Passive Inequality.

Online Appendix C provides a detailed analysis for each inequality domain separately. There, we show that i) nearly all subjects can be classified into one fairness type, and ii) most participants show consistent redistribution patterns across situations. The main text focuses on the relationship between the redistribution pattern under active and passive inequality.

Figure 2, depicts the distribution of spectators over two-dimensional redistribution patterns. The position on the vertical axis describes the spectators' fairness type under active inequality, and the position on the horizontal axis describes his redistribution pattern under passive inequality. Marginal distributions are reported with the axis labels. The figure shows that most spectators are "on the diagonal," that is, they display the same redistribution pattern under both active and passive inequality. Only 3% of all spectators in the restricted sample switch from meritocratic to egalitarian, meaning that they prioritize fairness toward beneficiaries ($\alpha < 0.5$ in the theoretical framework). Between 6% and 7% of spectators each switch from meritocratic to libertarian or vice versa, which is not consistent with our theoretical framework. Can this switching be explained by random noise? Given the fairness type of a spectator, if he is off the diagonal because of random choices under Passive Inequality, he is equally likely to "move" to either of the other two redistribution patterns. Hence,

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

we test whether the spectators who lie off the diagonal are equally likely to be classified as either of the two other redistribution patterns using three exact binomial tests, adjusted for multiple hypotheses testing by Bonferroni correction. We cannot reject the hypothesis that the off-diagonal proportions are random noise for egalitarian and libertarian fairness types. In contrast, libertarian fairness types are significantly more likely to become meritocrats than egalitarians under Passive Inequality. Overall, more than 85% of spectators are classified in a way that is consistent with our theoretical framework, which – together with the observation that spectators make very consistent observations *within* each condition — indicates that the framework explains spectators' behavior well.

As shown theoretically in Section 2, the fact that the money is distributed between passive stakeholders who differentially profit from their friends' effort in the Passive Inequality conditions should only matter for meritocrats, and only if the initial distribution reflects relative effort. To formally test whether this is the case, we estimate regression Equation 8 using OLS and clustering standard errors on the spectator level. We are particularly interested in the triple interaction of the Passive Inequality and Effort indicators (P_σ and E_σ) with spectators' (active inequality) fairness type.

The results are displayed in Table 4, in which a number of coefficients are suppressed for increased readability.[11] The estimates in column (1), which corresponds to Equation 8 and uses egalitarians as the reference fairness type, show that the triple interaction effect amounts to 24.3%p and is significant for meritocrats. This indicates that, relative to egalitarians, the fact that inequality is passive nudges meritocrats more strongly to redistribute more if inequality is based on effort instead of luck. As the triple interaction effect for meritocrats is also significantly higher than that for libertarians (Wald test, $p < 0.0001$), the data formally yields strong support for Hypothesis 4.

> Provided that inequality is passive, the larger extent of redistribution under effort than under luck is driven by meritocrats.

Considering columns (2)–(4), where Equation 7 is estimated separately for the three fairness types, it becomes apparent that the data do not perfectly fit the story behind Hypothesis 4, though. While the interaction effect of Passive Inequality and Effort amounts to almost 10%p for meritocrats and is highly significant, in the Luck domain they redistribute on average about 6%p less if inequality is passive, which is a significant difference as well. Conversely, libertarians redistribute on average about 27%p more if inequality is passive in the Luck domain, while the interaction effect largely offsets this difference (−23%p) for the Effort domain, and both coefficients are highly significant again.

5.3. Potential channels

Our analysis of potential channels had not been pre-registered. We provide a detailed analysis in Online Appendix D that we summarize here. In the open-ended questions, a plurality of spectators states to distribute earnings proportionally to relative efforts. Most of the spectators who mention effort refer specifically to the workers' efforts, suggesting that the relative effort of workers is seen as more relevant than the relative effort of the friends. This hypothesis is bolstered by an analysis of the 25 spectators who discuss the dilemma of meritocracy. Most of them argue that, since workers actually worked, they are entitled to the fruits of their work while friends are not entitled because they did not work. Potentially, as a consequence, they put more weight on the worker perspective.

We further test this idea by using the beliefs of spectators about the share of money workers give in a dictator game to their own friends as opposed to the friend of the other worker. If spectators make merit judgments based on workers' relative effort and then try to respect their distributional

[11] For a regression table that reports the same regression equations but does not omit coefficients, please refer to Table I.8 in Online Appendix I.

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

Table 4. Treatment effects on the extent of redistribution by fairness type

	Dependent Variable: Extent of Redistribution ($\theta_{i,c}$, Share)			
	(1) Pooled	(2) Egalitarians	(3) Meritocrats	(4) Libertarians
Effort (E_σ)	-.025	-.025	-.960***	-.109***
	(.036)	(.038)	(.006)	(.018)
Passive (P_σ)	-.018	-.017	-.059***	.268***
	(.031)	(.032)	(.012)	(.042)
Effort (E_σ) × Passive (P_σ)	-.144	-.144	.099***	-.232***
	(.103)	(.108)	(.015)	(.044)
Effort (E_σ) × Passive (P_σ) × Meritocrat	.243**			
	(.104)			
Effort (E_σ) × Passive (P_σ) × Libertarian	-.088			
	(.112)			
Initial Inequality (Δ_σ)	.031**	-.052	-.004	.175***
	(.014)	(.101)	(.012)	(.045)
Constant	.977***	1.001***	.977***	.084***
	(.015)	(.036)	(.006)	(.019)
Clusters	437	13	332	91
Observations	8,399	249	6,403	1,731
R^2	.817	.106	.864	.228

Note: This table reports results from OLS regressions of the extent of redistribution implemented by spectator i in situation σ on treatment indicators and spectator i's fairness type, controlling for the initial extent of inequality in situation σ. Results are based on observations in the restricted sample. Column (1) corresponds to Equation 8. Columns (2)–(4) correspond to Equation 7 but are estimated on subsets of spectators who share the corresponding fairness type. Standard errors (in parentheses) are clustered on the spectator level. Table I.6 in the online appendix shows analogous results using the full sample. * $p < .1$, ** $p < .05$, *** $p < .01$.

preferences, we should observe that these beliefs are associated with the average extent of redistribution implemented by spectators. Indeed, in the Effort domain we find that spectators who think that workers strongly prioritize their own friends redistribute significantly less than spectators who think that workers treat both friends more evenly.

5.4. Heterogeneity by demographics and external validity

As pre-registered, Online Appendix E documents heterogeneity in redistribution decisions and fairness types along the following demographic subgroups: social class, wealth, income, voting frequency, political left-right position, partisanship, education, age, and sex. To summarize, heterogeneity is most pronounced along the wealth dimension, where those with high wealth redistribute less than those with low wealth. Still, all demographic subgroups considered resolve the dilemma of meritocracy in favor of the worker perspective, and differences between treatments are much larger than differences between demographic subgroups. For instance, no subgroup equalizes more than 12% of the initial inequality in Passive Inequality & Effort and no subgroup equalizes less than 80% of the initial inequality in Passive Inequality & Luck. Similarly, the distribution of fairness types and redistribution patterns does not differ notably between demographic subgroups.

Online Appendix F investigates in detail to what extent our experimental measures of redistributional preferences are associated with preferences over real-world policies elicited in the post-experimental questionnaire. This analysis was not pre-registered. We find positive associations between redistribution in our experiment and stated preferences regarding any of these policies which

https://doi.org/10.1017/eec.2025.10010 Published online by Cambridge University Press

include a higher marginal income tax, a higher marginal estate tax, more support for disability insurance, more support for unemployment insurance, more support for equal opportunity programs, and rejection of intergenerational transmission. Still, most associations are not significant, suggesting that our experimental measures are informative about political attitudes but to a limited extent.

6. Conclusion

We studied redistributive preferences in the presence of the dilemma of meritocracy, where individuals infringe on meritocratic fairness because they either redistribute earned resources or accept inequality between individuals with similar merits. In a stylized survey experiment, US subjects prioritized fairness toward active benefactors over fairness toward passive beneficiaries, accepting inequality as long as it was merited at some stage.

We view our investigation as a first step in studying preferences toward passive inequality experimentally and hope that other researchers can build on our experimental design and findings. We employed an abstract experimental design to study the role of passive inequality in an abstract setting without interference from other variables. A promising avenue for future research is to enrich our design to study the role of moderating variables in a controlled manner. Thereby, scholars could also bring the design closer to relevant real-life situations.

First, we consider the size of the stakes involved to be of primary importance. The most relevant examples of passive inequality involve large sums of money, for instance, inheritances. In most countries, large inheritances are taxed more than small ones, which are often not taxed at all. One potential explanation for this is that small inheritances are seen as just, while large ones are seen as unjust. Distributing sums of money that are in the order of magnitude of large inheritances is very costly for the experimenter. A potential way around this problem is to employ our design in low-income counties (Slonim & Roth, 1998, Ariely et al., 2009).

Second, our treatments make it very clear that the initial distribution is either exclusively determined by workers' relative efforts or by luck, whereas resource distributions are usually determined by a combination of the two that is hard to disentangle. Recent research has documented that if active inequality is based on both effort and luck, this affects redistribution behavior in a non-trivial way. For example, spectators prioritize rewarding effort when the relative contribution of effort and luck can be decomposed (Cappelen & Tungodden, 2017), but uncertainty induces meritocrats to behave in a more egalitarian way (Cappelen et al., 2022b). Similarly, uncertainty allows individuals to form biased beliefs about the source of inequality (Konow, 2000, Rodriguez-Lara & Moreno-Garrido, 2012, Deffains et al., 2016, Cassar & Klein, 2019, Valero, 2022). Hence, it might be interesting to study how uncertainty about the source of inequality affects preferences for redistribution in the context of passive inequality.

Finally, individuals may not only inherit differential amounts of resources that can be consumed but also differential opportunities to generate resources themselves. Some papers investigate preferences for redistribution under unequal opportunities, albeit in settings where those unequal opportunities arise exogenously (Eisenkopf et al., 2013, Alesina et al., 2018, Andre, 2025, Schwaiger et al., 2022, Bhattacharya and Mollerstrom, 2022, Dong et al., 2022, Preuss et al., 2023). Our setup could easily be extended to accommodate the inheritance of unequal opportunities by introducing a second production stage in which the beneficiaries' returns to effort depend on their benefactors' efforts in the first production stage. This would introduce a dilemma similar to the one studied in this paper because a meritocrat should reject unequal opportunities but welcome that higher effort in the first stage pays off for beneficiaries in the second stage, leading to a very different decision problem for individuals making fairness judgments as compared to those in the papers mentioned above.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/eec.2025.10010.

Acknowledgements. We thank Johannes Goldbeck for excellent research assistance, Thomas Dohmen, Sebastian Kube, Moritz Schularick, and Florian Zimmermann for their outstanding supervision, and Johannes Abeler, Peter Andre, Christian Apenbrink, Roland Bénabou, Alexander Cappelen, Armin Falk, Simon Gaechter, Luca Henkel, Chui-Yee Ho, Thomas Kohler, Michael Kosfeld, George Loewenstein, Anna Schulze-Tilling, Louis Strang, and audiences at ESA Bologna, NSEF PhD & Postdoc Workshop Naples, Fairness and the Moral Mind Virtual Workshop, and IAME Applied Micro Coffee Bonn for constructive comments. Funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC2126/1-390838866. Guenther acknowledges financial support from the European Research Council (POPULIZATION Grant No. 852526). The replication material for the study is available at https://doi.org/10.5281/zenodo.15254781.

Competing interests. The authors had no financial or non-financial interests that are directly or indirectly related to the work submitted for publication.

References

Alesina, A., & Angeletos, G. -M. (2005). Fairness & redistribution. *American Economic Review*, *95*(4), 960–980.

Alesina, A., & Giuliano, P., (2011). Preferences for redistribution, In *Handbook of Social Economics*, (Vol. 1, pp. 93–131)Elsevier.

Alesina, A., Stantcheva, S., & Teso, E. (2018). Intergenerational mobility & preferences for redistribution. *American Economic Review*, *108*(2), 521–554.

Almås, I., Cappelen, A. W., & Tungodden, B. (2020). Cutthroat capitalism versus cuddly socialism: Are Americans more meritocratic & efficiency-seeking than Scandinavians?. *Journal of Political Economy*, *128*(5), 1753–1788.

Andre, P. (2025). Shallow meritocracy. *Review of Economic Studies 92*(2), 772–807. https://doi.org/10.2139/ssrn.3916303

Ariely, D., Gneezy, U., Loewenstein, G., & Mazar, N. (2009). Large stakes & big mistakes. *The Review of Economic Studies*, *76*(2), 451–469.

Bardsley, N. (2000). Control without deception: Individual behaviour in free-riding experiments revisited. *Experimental Economics*, *3*, 215–240.

Benabou, R. (2000). Meritocracy, redistribution, & the size of the pie. *Meritocracy & Economic Inequality*, (317–339. Princeton University Press).

Bhattacharya, P., & Mollerstrom, J. (2022). Lucky to work.

Björklund, A., Roine, J., & Waldenström, D. (2012). Intergenerational top income mobility in sweden: Capitalist dynasties in the land of equal opportunity?. *Journal of Public Economics*, *96*(5-6), 474–484.

Bock, O., Baetge, I., & Nicklisch, A. (2014). hroot: Hamburg registration & organization online tool. *European Economic Review*, *71*, 117–120.

Bowles, S., & Gintis, H. (2002). The inheritance of inequality. *Journal of Economic Perspectives*, *16*(3), 3–30.

Cappelen, A. W. Benjamin E., & Tungodden, B. (2022). Moral universalism: Global evidence.

Cappelen, A. W., Falch, R., & Tungodden, B. (2020). Fair & unfair income inequality, In K. F. Zimmermann, (Ed.), *Handbook of Labor, Human Resources & Population Economics* (1–25) Springer International Publishing.

Cappelen, A. W., Hole, A. D., Sørensen, E. Ø., & Tungodden, B. (2007). The pluralism of fairness ideals: An experimental approach. *American Economic Review*, *97*(3), 818–827.

Cappelen, A. W., Konow, J., Sørensen, E. Ø., & Tungodden, B. (2013). Just luck: An experimental study of risk-taking & fairness. *American Economic Review*, *103*(4), 1398–1413.

Cappelen, A. W., Mollerstrom, J., Reme, B., & Tungodden, B. (2022). A meritocratic origin of egalitarian behaviour, *The Economic Journal*, *132*(646), 2101–2117.

Cappelen, A. W. Sørensen E. Ø., & Tungodden, B. (2010). Responsibility for what? Fairness & individual responsibility, *European Economic Review*, *54*(3), 429–441.

Cappelen, A. W., & Tungodden, B. (2017). Fairness & the proportionality principle. *Social Choice & Welfare*, *49*(3-4), 709–719.

Cassar, L., & Klein, A. H. (2019). A matter of perspective: How failure shapes distributive preferences. *Management Science*, *65*(11), 5050–5064.

Chen, D. L., Schonger, M., & Wickens, C. (2016). Otree — an open-source platform for laboratory, online, & field experiments. *Journal of Behavioral & Experimental Finance*, *9*, 88–97.

Chetty, R., Hendren, N., & Katz, L. F. (2016). The effects of exposure to better neighborhoods on children: New evidence from the moving to opportunity experiment. *American Economic Review*, *106*(4), 855–902.

Cohen, R., Maltz, A., & Ofek-Shanny, Y. (2022). Social preferences over taste-based inequality.

Deffains, B., Espinosa, R., & Thöni, C. (2016). Political self-serving bias & redistribution. *Journal of Public Economics*, *134*, 67–74.

Dong, L., Huang, L., & Lien, J. (2022). They never had a chance: Unequal opportunities & fair redistributions. Discussion Paper 2022-11, The Centre for Decision Research & Experimental Economics, School of Economics, University of Nottingham.

Eisenkopf, G., Fischbacher, U., & Föllmi-Heusi, F. (2013). Unequal opportunities & distributive justice. *Journal of Economic Behavior & Organization*, *93*, 51–61.

Gächter, S., Starmer, C., & Tufano, F. (2015). Measuring the closeness of relationships: A comprehensive evaluation of the 'inclusion of the other in the self' scale. *PLOS ONE*, *10*(6), e0129478.
Gärtner, M., Mollerstrom, J., & Seim, D. (2017). Individual risk preferences & the demand for redistribution. *Journal of Public Economics*, *153*, 49–55.
Gill, D., & Prowse, V. (2012). A structural analysis of disappointment aversion in a real effort competition. *American Economic Review*, *102*(1), 469–503.
Konow, J. (2000). Fair shares: Accountability & cognitive dissonance in allocation decisions. *American Economic Review*, *90*(4), 1072–1092.
Kosse, F., Deckers, T., Pinger, P., Schildberg-Hörisch, H., & Falk, A. (2020). The formation of prosociality: Causal evidence on the role of social environment. *Journal of Political Economy*, *128*(2), 434–467.
Kuziemko, I., Norton, M. I., Saez, E., & Stantcheva, S. (2015). How elastic are preferences for redistribution? Evidence from randomized survey experiments, *American Economic Review*, *105*(4), 1478–1508.
Lekfuangfu, W. N., Powdthavee, N., & Riyanto, Y. E. (2023). Luck or rights? An experiment on preferences for redistribution following inheritance of opportunity. *Journal of Behavioral & Experimental Economics*, *106*, 102078.
McConnell, T. (2022) Moral dilemmas. In E. N. Zalta, & U. Nodelman (Eds.), *The Stanford Encyclopedia of Philosophy* Metaphysics Research Lab, Stanford University.
Mollerstrom, J., Reme, B., & Sørensen, E. Ø. (2015). Luck, choice & responsibility — An experimental study of fairness views. *Journal of Public Economics*, *131*, 33–40.
Palan, S., & Schitter, C. (2018). Prolific.ac — A subject pool for online experiments. *Journal of Behavioral & Experimental Finance*, *17*, 22–27.
Peer, E., Rothschild, D., Gordon, A., Evernden, Z., & Damer, E. (2021). Data quality of platforms & panels for online behavioral research. *Behavior Research Methods*, *54*(4), 1643–1662.
Piketty, T., & Saez, E. (2013). A theory of optimal inheritance taxation. *Econometrica*, *81*(5), 1851–1886.
Preuss, M., Reyes, G., Somerville, J., & Joy W. (2023). Inequality of opportunity & income redistribution, arXiv:2209.00534.
Rodriguez-Lara, I., & Moreno-Garrido, L. (2012). Self-interest & fairness: Self-serving choices of justice principles. *Experimental Economics*, *15*(1), 158–175.
Roth, C., & Wohlfart, J. (2018). Experienced inequality & preferences for redistribution. *Journal of Public Economics*, *167*(12), 251–262.
Schaube, S., & Strang, L. (2025). (Not) everyone can be a winner — The role of payoff interdependence for redistribution *Journal of Public Economics*, *243*(1), 105146.
Schwaiger, R., Huber, J., Kirchler, M., Kleinlercher, D., & Weitzel, U. (2022). Unequal opportunities, social groups, & redistribution: Evidence from germany. *Journal of Behavioral & Experimental Economics*, *100*, 101911.
Slonim, R., & Roth, A. E. (1998). Learning in high stakes ultimatum games: An experiment in the slovak republic. *Econometrica*, *66*(3), 569–596.
Stantcheva, S. (2021). Understanding tax policy: How do people reason?. *The Quarterly Journal of Economics*, *136*(4), 2309–2369.
Stantcheva, S. (2023). How to run surveys: A guide to creating your own identifying variation & revealing the invisible. *Annual Review of Economics*, *15*(1), 205–234.
Valero, V. (2022). Redistribution & beliefs about the source of income inequality. *Experimental Economics*, *25*(3), 876–901.

Cite this article: Freyer, T., & Guenther, L. (2025). Passive inequality and the dilemma of meritocracy. *Experimental Economics*, 28(2), 379–400. https://doi.org/10.1017/eec.2025.10010