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The merit primacy effect

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The merit primacy effect

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Abstract

Do people give primacy to merit when luck partly determines earnings? This paper reports from a novel experiment where third-party spectators have to decide whether to redistribute from a high-earner to a low-earner in cases where earnings are determined by luck and merit. The experiment has four treatments that vary the relative importance of luck and merit, but where it is always possible to decompose the part of the earnings that originate from each of the two sources. We argue that any reasonable fairness view in such cases should satisfy two fairness conditions: Fairness Consistency and Fairness Symmetry. Our main finding is that the spectators assign strong primacy to merit in situations where inequalities are due to both luck and merit, and as a result violate both fairness conditions. The spectators allocate close to the same share to the high-earner when merit only accounts for ten percent of the earnings as when merit accounts for all of the earnings, and paradoxically spectators allocate even more to the high-earner when luck determines a small part of the earnings. We believe that the results shed new light on inequality acceptance in society, in particular by showing how just a little bit of merit can make people significantly more inequality accepting.

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1 Introduction

People's willingness to accept income inequality depends critically on the source of inequality: people tend to view inequality due to luck as unfair and inequality due to merit as fair (Fong, 2001; Cappelen, Drange Hole, Sørensen, and Tungodden, 2007; Cappelen, Sørensen, and Tungodden, 2010). The importance of the source of inequality may contribute to explain the striking variation in income inequality and redistributive policies across the developed world, where countries may be in different social equilibria characterized by the extent to which merit or luck determines individual incomes (Alesina and Angeletos, 2005; Bénabou and Tirole, 2006; Piketty, 1995). The source of inequality is also important in the controversy around the top one percent income earners (Atkinson, Piketty, and Saez, 2011; Mankiw, 2013). Some consider these incomes largely to reflect merit and therefore consider them fair, while others argue that luck plays a crucial role in shaping the incomes of the most fortunate and therefore consider them unfair (Ipsos Mori, 2011).[1]

But to what extent are people consistent in how considerations about the sources of inequality shape their fairness views? In this paper, we report from a novel experiment that studies how people handle distributive situations where earnings are determined by both merit and luck. Our main research question is whether people, in their distributive choices, overweight one of the sources of inequality when both are present. In particular, do people give primacy to merit when luck also partly determines earnings? We outline a theoretical framework for analyzing this question, which introduces two normative conditions: Fairness Consistency and Fairness Symmetry. Fairness Consistency basically requires that the presence of some merit in a distributive

[1]More generally, the role of merit may play an important role in justifying work place inequality through performance-pay schemes. A comprehensive empirical study of wage inequality in the US concludes that "a growing incidence of performance-pay accounts for 25 percent of the growth in male wage inequality between the late 1970s and early 1990s" (Lemieux, MacLeod, and Parent, 2009).

situation should not make people less inequality accepting and the presence of some luck should not make people more inequality accepting; Fairness Symmetry requires that the weight attached to the less important source of inequality should not depend on whether it is merit or luck. Further, we introduce a choice rule that satisfies these two conditions, the Fairness Proportional Rule. It implies that the importance attached to each of the sources of inequality when determining the fair distribution should be proportional to the importance of this source of inequality in determining the earnings of the individuals.

In the experiment, we recruited individuals, *workers*, from an online market place for work to conduct some assignments. We then recruited other individuals, *spectators*, and gave them the opportunity to redistribute earnings between a pair of workers in a situation where one of the workers in the pair had earned all the money. Each third-party spectator was matched with a unique pair of workers. The spectators were randomly assigned to one of four treatments, where the treatments only differed with respect to the importance of merit relative to luck in determining earnings. In the only-luck treatment and the only-merit treatment, earnings were determined only by luck and only by merit, respectively. In the some-merit and mostly-merit treatments, ten percent and ninety percent of earnings were determined by merit, respectively, and the remainder by luck. This experimental variation in the relative importance of merit and luck allows us to test whether the spectators are consistent in how they handle these sources of inequality in distributive choices.

The main finding of the present study is that spectators give strong primacy to merit when both merit and luck determine earnings. The spectators allocate close to the same share to the high-earner when merit only accounts for ten percent of the earnings as when merit accounts for all of the earnings. Compared to the Fairness Proportional Rule, the spectators give the high-earner almost 20 percent more than predicted in the

some-merit treatment and 11 percent more than predicted in the mostly-merit treatment. The overweighting of merit causes the spectators to violate the basic normative conditions. Spectators violate Fairness Consistency by assigning significantly more to the high-earner in the mostly-merit treatment than in the only-merit treatment, and spectators violate Fairness Symmetry by assigning significantly more weight to the introduction of some merit than to the introduction of some luck. We also show that our main findings are robust across different subgroups; in all subgroups, we find that the spectators give primacy to merit and violate the basic normative conditions.

Our study contributes to the large and growing literature on social preferences. (Almås, Cappelen, and Tungodden, 2016; Andreoni and Miller, 2002; Bellemare, Kröger, and van Soest, 2008; Cappelen et al., 2007, 2010; Cappelen, Konow, Sørensen, and Tungodden, 2013; Charness and Rabin, 2002; Durante, Putterman, and Weele, 2014; Engelmann and Strobel, 2006; Fehr, Naef, and Schmidt, 2006; Fehr, Bernhard, and Rockenbach, 2008; Fehr, Glätzle-Rützler, and Sutter, 2013; Konow, 1996, 2000; Mollerstrom, Reme, and Sørensen, 2015). In line with earlier papers, we show that people are more willing to accept inequality when the source of inequality is merit than when it is luck. But in contrast to the literature we demonstrate that people are not consistent in how they handle merit and luck in distributive choices. In fact, we show that the introduction of a little bit of merit goes a long way towards making people as inequality accepting as they would be if the inequality was determined only by merit. The behavioral patterns documented in this paper may thus shed new light on inequality acceptance in society, by showing that it critically depends on whether people perceive the inequality to at least partly reflect merit. More broadly, our results demonstrate the importance of understanding the systematic biases that people express in their moral choices.

The paper is organized as follows: Section 2 outlines the theoretical framework.

Section 3 presents the experimental design. Section 4 reports the main results and the heterogeneity analysis. Section 5 provides some concluding remarks.

2 Theoretical framework

To guide our analysis and the interpretation of the results, we introduce a simple social preference model that focuses on how individuals make choices as third-party spectators when they are fully informed about the earnings of two other individuals and about the role of luck and merit in determining these earnings. What distribution of earnings - and thus rewards of merit - would they implement as spectators if given the opportunity to redistribute?

We assume that a spectator dislikes deviations from what he or she considers a fair distribution of earnings. Let y be the income the spectator allocates to the individual with greater earnings - in the following referred to as the *high-earner* - and let m be what the spectator considers to be the fair income of the high-earner. We now introduce the following simple spectator utility function (Cappelen et al., 2013):

$$V(y;\cdot) = -(y-m)^2 \tag{1}$$

Since there is no cost of redistribution, it follows straightforwardly from the model that the spectators implement what they view as the fair solution, i.e. $y = m$. The key question addressed in this study is what spectators view as the fair income of the high-earner in mixed-situations in which the earnings are caused by both luck and merit.

To study this question, it is useful to introduce benchmark situations where only-luck (L) or only-merit (M) causes the inequality in earnings. Let $m(L)$ and $m(M)$ denote what the spectator considers to be the fair income to the high-earner in each of these situations. We can now state, without loss of generality, that what the spectator

considers to be fair in a distributive situation S is given by:

$$m(S) = \alpha(S)m(L) + (1 - \alpha(S))m(M), \tag{2}$$

where $\alpha(S) = 1$ if we are in an only-luck situation $(S = L)$ and $\alpha(S) = 0$ when we are in an only-merit situation $(S = M)$.

Equation 2 highlights that what is considered as fair in a mixed-situation can be seen as a question of how much weight to assign to the fact that some of these earnings originate from luck and from merit, respectively. We argue that there are two normatively appealing conditions that restrict the set of reasonable weights used in 2. First, we introduce a minimal consistency condition:

Fairness Consistency: The fair income of the high-earner in a mixed-situation should be a convex combination of the fair income of the high-earner in the only-luck situation and in the only-merit situation, i.e., $0 \leq \alpha(S) \leq 1$.

Fairness Consistency is very weak and should be entirely uncontroversial. To illustrate, if merit is considered to justify more to the high-earner than luck in the situations where there is only one source of inequality, then merit and luck in combination should not justify giving less to the high-earner than in the only-luck situation and not more than in the only-merit situation.

A problem when evaluating mixed-situations is to determine how much of the earnings derive from luck and how much from merit. To introduce the second fairness condition, we introduce a set of situations where this problem is removed. Define a situation S^d as decomposable if the earnings can be decomposed into one part originating from luck and another part originating from merit (which is trivially the case for the only-luck and only-merit situations), where $l(S^d)$ denotes the share of total earnings that derives from luck in situation S^d. We can now introduce the following symmetry

condition

Fairness Symmetry: For any two decomposable situations S^1 and S^2: if $l^1 = 1-(l^2)$, then $\alpha(S^1) = 1-\alpha(S^2)$.

Fairness Symmetry is also a very weak condition. It does not impose any restrictions on how much weight to assign to the less important source of inequality in decomposable situations; it only requires that the weight should not depend on the source of inequality. To illustrate, the condition is violated if we do not assign much weigh to the luck part when luck is the less important source of inequality, while we assign significant weight to the merit part in the corresponding situation where merit is the less important source of inequality. The Fairness Symmetry condition serves as a benchmark for our study of whether spectators give primacy to one of the sources of inequality when both are present.[2]

The Fairness Symmetry condition is silent on how exactly to weigh each part in decomposable mixed-situations. We will argue that a reasonable approach is to let the weight be proportional to the importance of each of the sources of inequality in determining the total earnings, as captured by the following fairness rule.

Fairness Proportional Rule: For any decomposable situation S^d, the fair income to the high-earner is given by $m(S^d) = l(S^d)m(L) + (1-l(S^d))m(M)$.

To illustrate, consider a decomposable situation S^1 where earnings are mostly determined by luck, but a tiny fraction of the earnings, ten percent, is determined by merit. In this case the fairness proportional rule implies that the fair share to the high-earner is given by $m(S^1) = 0.9m(L)_i + 0.1m(M)$. In contrast, in a situation S^2

[2]Our use of the term "primacy effect" differs from the classical use of this term in the psychological literature, where it refers to the finding that people let the first items in a series be more influential than those presented later in the series (**?**).

where earnings are mostly determined by merit, but a tiny fraction of ten percent of the earnings is determined by luck, it implies that $m(S^2) = 0.1m(L) + 0.9m(M)$. The rule straightforwardly satisfies both Fairness Consistency and Fairness Symmetry, and in the following we will compare spectator behavior to what would be the predicted choices if the spectators followed this rule.

3 Experimental Design

In the experiment, we had two types of participants: workers and spectators. Workers earned money by completing work on real effort assignments, but did not make any distributive decisions. The spectators, who are the main focus of this study, decided whether to redistribute earnings between a pair of workers who had completed the same assignment. A spectator's decision determined the actual distribution of payments between two workers and the decision thus had monetary consequences for the two workers, but not for the spectator. After making the distributive decision, the spectators completed a non-incentivized survey that included questions about their attitude towards redistributive policies as well as standard background questions about gender, age, political orientation, and education.

The spectators were randomly assigned to one of four treatments that only differed with respect to the relative importance of luck and merit in determining workers' earnings from the assignment. In the following, we describe the design and the sample in more detail.

3.1 Treatments

In all four treatments the spectators were informed that two workers had worked for a total of ten minutes and that the total earnings of the pair were fixed at 600 tokens

(equivalent to 6 USD). The spectator was also informed about how the earnings were determined, which differed across treatments.

In the *Only luck* treatment (*L*), spectators were informed that the workers had worked on a sentence unscrambling task for ten minutes and that the earnings for the assignment had been determined by a lottery. The worker winning the lottery had been assigned 600 tokens and the other worker had been assigned zero tokens. Hence, in this treatment, the inequality in earnings reflects that one worker was lucky and the other worker was unlucky.

In the *Only merit* treatment (*M*), spectators were informed that the workers had worked on a code recognition task for ten minutes and that the earnings for the assignment had been determined by the number of correct answer. The worker with the highest score had been assigned 600 tokens and the other worker had been assigned zero tokens. Hence, in this treatment, the inequality in earnings reflects that one worker was better than the other at the task.

In the *Some merit* treatment (*SM*) and *Mostly merit* treatment (*MM*) spectators were informed that workers had worked on both tasks. In both treatments, the inequality in earnings was partly due to luck and partly due to merit, but the earnings could be cleanly decomposed into one part originating from luck and one part originating from merit. In the some-merit treatment workers had worked for nine minutes on the sentence unscrambling task and one minute on the code recognition task. The tokens were allocated in proportion to the time they had spent on each of the tasks: 540 tokens were allocated for the sentence unscrambling task to the worker who won the lottery and 60 tokens were allocated for the code recognition task to the worker with the highest number of correct answers. Correspondingly, in the mostly-merit treatment, the workers had worked for one minute on the sentence unscrambling task and nine minutes on the code recognition task, with 60 tokens allocated to the worker who won the lottery and

540 tokens allocated to the worker with the highest number of correct answers.

To make the earnings distribution equal across all treatments, the analysis only includes spectator decisions from the some-merit and mostly-merit treatments for the pairs of workers where the worker who won the lottery also had the highest number of correct answers. Thus, prior to the spectator decision there was maximal inequality between the two workers in all four treatments, where the high-earner had 600 tokens and the low-earner had 0 tokens.

Table 1 provides an overview of the earnings distribution and the determinants of earnings in each of the four treatments.

[Table 1 about here.]

The experimental design allows us to study whether the spectators violate the two fairness conditions when choosing in mixed-situations, where, in line with equation 1, we assume that the spectators implement what they consider to be fair in each of the treatments.

Violation of Fairness Consistency: Fairness Consistency is violated if the income allocated to the high-earner in the *SM* or *MM* treatments is smaller than in the *L* treatment or larger than in the *M* treatment.

Violation of Fairness Symmetry: Fairness Symmetry is violated if the increase in income allocated to the high-earner when comparing *SM* and *L* is different from the increase when comparing *MM* and *M*.[3]

Finally, we compare the spectator choices to the prediction of the Fairness Proportional Rule, where the predicted choices are based on 2, $\alpha(SM) = 0.1$, $\alpha(MM) = 0.9$,

[3]To see this, note that from equation 2, $m(SM) = \alpha(SM)m(L) + (1 - \alpha(SM))m(M)$. By Fairness Symmetry, $\alpha(MM) = (1 - \alpha(SM))$. Hence, $m(MM) = (1 - \alpha(SM))m(L) + \alpha(SM)m(M)$. Thus, it follows that $m(SM) - m(L) = m(M) - m(MM)$.

and the spectator behavior in L and M. This comparison serves as the basis for our study of whether the spectators assign primacy to one of the sources of inequality in their distributive choices.

Luck primacy: The spectators assign primacy to luck in mixed situations if the share allocated to the high-earner is smaller than the predicted share in both the *SM* and *MM* treatments.

Merit primacy: The spectator choices assign primacy to merit in mixed situations if the share allocated to the high-earner is larger than the predicted share in both the *SM* and *MM* treatments.

It follows straightforwardly that the spectators violate Fairness Symmetry, but not necessarily Fairness Consistency, if they assign primacy to one of the sources of inequality in the mixed-situations.

3.2 Sample and procedures

We recruited 2115 individuals from the online labor market Amazon Mechanical Turk to take part in this study, where 1005 acted as spectators.[4] All individuals were US-based and had a high-quality track record at the platform.[5] Table A1 provides an overview of the background characteristics of the individuals who acted as spectators for each of the four treatments. The spectators were on average 34 years old, 46 percent were female and about one third reported to have high school as their highest educational attainment.[6]

[4]We conducted two rounds. In the first round, we recruited 400 individuals, who acted both as workers and as spectators; in the second round, we recruited 1815 individuals (who had not taken part in the first round), where 1210 acted in the role as worker and 605 acted in the role as spectator. As shown in Figures A1 and A2 in the appendix, the results are strikingly similar in the two rounds.

[5]The requirement was set to 95% approval rate across at least 5000 tasks.

[6]In Table A1 in the appendix, we show that the spectators are balanced on the background variables across treatments.

The workers were explained how the initial assignment of earnings would be determined, but they were not informed about their actual earnings. They were told, however, that a third person, the spectator, would be informed about the assignment and their earnings, and would be given the opportunity to redistribute the earnings between them and the other worker they were matched with. The workers received the payment determined by the spectator within a few days after the spectators made their choice. The spectators received a fixed participation fee of 2 dollars. Table 2 summarizes the main stages in the experiment.

[Table 2 about here.]

4 Results

Figure 1 provides, for each treatment, a histogram of the spectator behavior in terms of how much the spectator allocates to the high-earner. We observe considerable heterogeneity both within and between treatments. In the only-luck treatment, the majority of the spectators, 68 percent, choose to equalize earnings completely, while 10 percent choose not to transfer any money to the low-earner. In contrast, in the only-merit treatment, a much smaller share of the spectators, 28 percent, choose to equalize, while a much larger fraction, 23 percent, choose not to redistribute at all. The spectator behavior in the some-merit and the mostly-merit treatments are quite similar to the behavior in the only-merit treatment, with 22 percent and 18 percent respectively choosing to equalize earnings, and 16 percent and 27 percent choosing not to redistribute at all.

[Figure 1 about here.]

We now turn to a regression analysis of the treatment effects. Let D_i be the share of earnings allocated to the high-earner or an indicator variable taking the value one

if the spectator equalizes earnings. Further, let $I(SM_i)$, $I(MM_i)$ and $I(M_i)$ be indicator variables taking the value one if the spectator is in the respective treatment, and let $\mathbf{X}_i$ be a vector of control variables. Our main empirical specification can now be written as follows:

$$D_i = \alpha + \beta_1 I(SM_i) + \beta_2 I(MM_i) + \beta_3 I(M_i) + \gamma \mathbf{X}_i + \varepsilon_i. \tag{3}$$

The only-luck treatment serves as the baseline in equation 3, and thus β_i provides an estimate of the causal effect on spectator behavior of moving from a situation where only-luck determines earnings to a situation where some, mostly, or only-merit determines the earnings.

Table 3 reports the estimates for equation 3, both with and without the inclusion of control variables. From columns (1) and (2), we observe that the introduction of merit has a significant effect on the share allocated to the high earner. In line with previous studies (Almås et al., 2016), we observe that there is a huge effect of moving from an only-luck situation to an only-merit situation: the share allocated to the high-earner increases with 31 percent (from 0.55 to 0.72; $p < 0.001$). Strikingly, however, we observe almost the same increase when only some-merit is introduced (0.68; $p < 0.001$), and actually even a larger increase when merit mostly determines the earnings, but there is some role of luck (0.79; $p < 0.001$). As shown in column (2), these findings are robust to the inclusion of background variables.

We find a similar pattern when we consider the share of spectators equalizing. The move from an only-luck situation to an only-merit situation causes a huge reduction in the share of spectators equalizing (from 0.68 to 0.28; $p < 0.001$), and the drop is actually even larger in the mixed situations (0.22 when there is some merit and 0.18 when there is mostly merit; $p < 0.001$).

[Table 3 about here.]

We observe that the spectators violate both fairness conditions. Spectators violate Fairness Consistency by assigning significantly more to the high-earner in the *MM* treatment than in the *M* treatment ($p = 0.001$), and spectators violate Fairness Symmetry by assigning significantly more weight to the introduction of some merit than to the introduction of some luck (where the latter actually causes the spectator to give even more to the high-earner; $p < 0.001$).

Result 1: Spectators violate both Fairness Consistency and Fairness Symmetry in distributive situations where earnings are determined by both luck and merit.

In Figure 2, we compare spectator choices and predicted spectator choices based on the Fairness Proportional Rule.

[Figure 2 about here.]

We observe that the spectators clearly are driven by a merit primacy effect; the share assigned to the high-earner is significantly higher than the predicted share in both the *SM* and *MM* treatments ($p < 0.001$). The spectators give the high-earner almost 20 percent more than predicted in the some-merit treatment (0.68 versus 0.57) and 11 percent more than predicted in the mostly-merit treatment (0.71 versus 0.79).[7]

Result 2: Spectators assign primacy to merit in distributive situations where earnings are determined by both luck and merit.

To study whether spectator choices relate to the characteristics of the spectators (political orientation, socioeconomic status, and gender), we conducted a heterogeneity analysis by estimating the following regression with interactions:

[7]Note that this cannot reflect an attribution error (Charness, 2004), since the spectators know for sure how much of the inequality in earnings relates to each of the two sources of inequality.

$$
\begin{aligned}
S_i = &\alpha + \beta_1 I(SM_i) + \beta_2 I(MM_i) + \beta_3 I(M_i) + \theta B_i + \lambda_1 I(SM_i) B_i + \lambda_2 I(MM_i) B_i \\
&+ \lambda_3 I(M_i) B_i \gamma + \mathbf{X}_i + \varepsilon_i,
\end{aligned} \tag{4}
$$

where B_i is an indicator variable for spectator i being either conservative, having high education or being female.

[Table 4 about here.]

We observe from Table 4 that there are no significant differences in treatment effects across the subgroups; in all subgroups, a significantly higher share is allocated to the high-earner in all the merit treatments. We also show in Figure A3 that the comparison between actual and predicted spectator choices are strikingly similar across subgroups.

Result 3: In all subgroups, we observe a strong merit primacy effect that makes spectators violate both Fairness Consistency and Fairness Symmetry in distributive situations where earnings are determined by both luck and merit.

5 Concluding remarks

We have shown that people are not consistent in how they handle merit and luck in distributive choices. In the present study, we find that spectators overweight merit when determining how much to give to the high-earner in situations where earnings are determined by both merit and luck. In fact, spectators allocate close to the same share to the high-earner when merit only accounts for ten percent of the earnings as when merit accounts for all of the earnings. In other words, a little bit of merit makes people significantly more inequality accepting.

We believe that this finding can shed important light on inequality acceptance in society, by showing that inequality acceptance critically depends on whether people believe that the inequality at least partly reflects merit. This may contribute to explain why some people consider the income of the top one percent to be fair; they may believe that even though luck is part of the story, these earnings also reflect some merit and this fact may take primacy in their fairness considerations: "The incomes at the top, especially in the top one percent, have grown much faster than average. These high earners have made significant economic contributions, but they have also reaped large gains. The question for public policy is what, if anything, to do about it" (p.22) (Mankiw, 2013). At the same time, the power of merit is also reflected in the fact that many of those who consider the increase in income of the top one percent unfair, find it urgent to argue that these incomes do not reflect merit at all: "Inequality is rising for structural reasons that have nothing to do with the social value produced by the labour of the top one percent of earners".[8]

The primacy of merit in people's fairness considerations may also be important for our understanding of the cross-country variation in income inequality. A main focus in the present literature has been on people's beliefs about the relative importance of merit and luck in determining earnings (Alesina and Angeletos, 2005; Bénabou and Tirole, 2006; Piketty, 1995). Our findings, however, suggest that cross-country beliefs differences are less essential, at least as long as people in most countries consider merit to have some role in determining earnings. In this case, our study suggests that inequality acceptance is largely driven by what people consider to be a fair inequality when merit is the only source of inequality. Consequently, the cross-country variation in inequality acceptance may be driven by different societies having different views about the extent to which merit can justify income inequalities rather than by differ-

[8]http://www.economist.com/blogs/democracyinamerica/2013/06/inequality

ences in beliefs about the relative importance of merit and luck in determining earnings (Almås et al., 2016).

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Table 1: Overview of treatments and initial distributions

Treatment	Time	Task	Initial distribution High-earner	Low-earner
Only luck	100 %	Luck task	600	0
		Initial distribution	**600**	**0**
Some merit	10 %	Merit task	60	0
	90 %	Luck task	540	0
		Initial distribution	**600**	**0**
Mostly merit	90 %	Merit task	540	0
	10 %	Luck task	60	0
		Initial distribution	**600**	**0**
Only merit	100 %	Merit task	600	0
		Initial distribution	**600**	**0**

Note: The table shows the distribution of tokens between the high-earner and the low-earner prior to redistribution for each of the four treatments. To ensure that the total initial distribution was the same across all treatments we only included the situations in the some-merit and mostly-merit treatment in which the winner of the merit task also was the winner of the lottery.

Table 2: Sequence of events in the experiment

Stage of experiment	
1. **Work stage:**	Workers complete assignments.
2. **Earnings stage:**	Workers are matched in pairs and assigned earnings according to treatment.
3. **Redistribution stage:**	Each spectator decides for one pair of workers whether and how much to redistribute.
4. **Payment stage:**	Workers in the pair are paid according to the decision of the spectator.

Note: The table provides an overview of the main stages in the experiment.

Table 3: Main treatment effects

	Share	Share	Equalize	Equalize
Some merit	0.131***	0.131***	-0.467***	-0.468***
	(0.0178)	(0.0178)	(0.0391)	(0.0389)
Mostly merit	0.233***	0.233***	-0.503***	-0.503***
	(0.0189)	(0.0189)	(0.0382)	(0.0381)
Only merit	0.171***	0.172***	-0.407***	-0.413***
	(0.0182)	(0.0182)	(0.0405)	(0.0405)
Female		-0.00994		0.0717**
		(0.0130)		(0.0276)
Age		-0.0170		0.0395
		(0.0132)		(0.0274)
College		0.00599		-0.00777
		(0.0142)		(0.0292)
Liberal		-0.00621		-0.00832
		(0.0133)		(0.0273)
Constant	0.554***	0.566***	0.682***	0.642***
	(0.0128)	(0.0197)	(0.0292)	(0.0411)
N	1005	1005	1005	1005

Note: The first two columns report linear regressions of the share of earnings given to the high-earner. The second two columns report linear regressions on the share of spectators who choose to equalize. "Some merit" is an indicator variable taking the value one if the participant is in the some-merit treatment "Mostly merit" is an indicator variable taking the value one if the participant is in the mostly merit treatment "Only merit" is an indicator variable taking the value one if the participant is in the only-merit treatment. "Female is a dummy for the spectator being a woman, "Age" is a dummy variable taking the value one if the spectator's age is above the median, "College" is a dummy for having completed college and "Liberal" is a dummy which is equal to one if the spectator considers himself to be either liberal or very liberal. Robust standard errors in parenthesis. (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$)

Table 4: Heterogeneity analysis

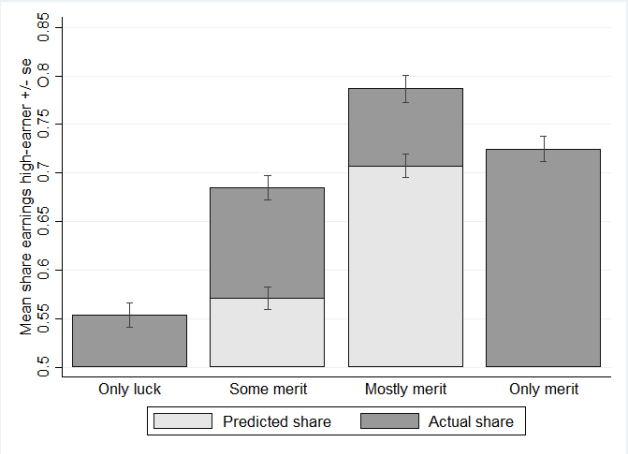
	Political View B=1 if Liberal		Education B=1 if High		Gender B=1 if Female	
	Share	Equalize	Share	Equalize	Share	Equalize
Some merit	0.113***	-0.442***	0.121***	-0.465***	0.119***	-0.523***
	(0.028)	(0.059)	(0.031)	(0.065)	(0.024)	(0.051)
Mostly merit	0.256***	-0.531***	0.243***	-0.501***	0.259***	-0.548***
	(0.029)	(0.057)	(0.034)	(0.068)	(0.026)	(0.049)
Only merit	0.170***	-0.414***	0.153***	-0.428***	0.196***	-0.426***
	(0.028)	(0.060)	(0.032)	(0.070)	(0.026)	(0.056)
B	-0.00598	-0.00777	-0.00260	-0.0111	0.00976	0.00989
	(0.026)	(0.059)	(0.027)	(0.061)	(0.025)	(0.059)
B*Some merit	0.0332	-0.0488	0.0161	-0.00583	0.0250	0.118
	(0.036)	(0.079)	(0.038)	(0.081)	(0.036)	(0.079)
B*Mostly merit	-0.0394	0.0476	-0.0125	-0.00184	-0.0564	0.0991
	(0.038)	(0.077)	(0.041)	(0.082)	(0.038)	(0.077)
B*Only merit	0.00324	0.00135	0.0283	0.0212	-0.0487	0.0325
	(0.037)	(0.082)	(0.039)	(0.086)	(0.036)	(0.081)
Constant	0.565***	0.641***	0.571***	0.644***	0.556***	0.670***
	(0.024)	(0.051)	(0.026)	(0.054)	(0.023)	(0.048)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observation	1005	1005	1005	1005	1005	1005
R-squared	0.152	0.192	0.149	0.191	0.154	0.193
Some merit+B*Some merit	0.146***	-0.491***	0.137***	-0.471***	0.144***	-0.405***
	(0.023)	(0.052)	(0.022)	(0.049)	(0.026)	(0.060)
Mostly merit+B*Mostly merit	0.217***	-0.483***	0.230***	-0.503***	0.202***	-0.449***
	(0.025)	(0.051)	(0.023)	(0.046)	(0.028)	(0.059)
Only merit+B*Only merit	0.174***	-0.413***	0.181***	-0.406***	0.147***	-0.394***
	(0.024)	(0.055)	(0.022)	(0.050)	(0.026)	(0.059)

Note: The table reports results from robust OLS regression of share of earnings given to the high-earner and the tendency to equalize on explanatory variables and interactions with subgroups of the population corresponding to regression equation 4. B is an indicator variable taking the value 1 if the spectator is liberal (column 1 and 2), has college education (column 3 and 4) or is female (column 5 and 6). In these regressions we include all background variables used in Table 3, except the variable captured by B. All variables are defined in Table 3. Standard errors in parentheses (* $p<0.05$, ** $p<0.01$, *** $p<0.001$)

Figure 1: Histograms of share of earnings allocated to high-earner

Note: The figure shows, by treatment, the histogram of the fraction of spectators who choose the alternative shares of earnings to the high-earner.

Figure 2: Reward of high-earner: Actual versus predicted spectator choice



Note: The figure shows the average share of total earnings allocated to the worker who initially held all the earnings for each treatment. It also shows the predicted share of earnings given the fairness independence assumption. The upper and lower level of the standard error of the mean and the prediction is also displayed.

A Appendix

Table A1 provides an overview of the background variables by treatment and show that the sample is balanced.

[Table A1 about here.]

The experiment was conducted in two rounds. The two rounds were identical in all respects except that in the first round the participants took the role of both worker and spectator, where each worker acted as a spectator for a pair of workers within the same treatment. In this round, we had twice as many spectator decisions as pairs of workers and each spectators' decision was therefore implemented for his respective pair with fifty percent probability. The workers were not informed about their own earnings prior to acting as spectators. In the second round the spectators only acted as spectators and had not participated in the work phase and we had a unique spectator for each pair of workers. The spectators decision was thus implemented with certainty.

Figure A1 displays the average share of earnings given to the high-earner in each of the four treatments for the two rounds separately, while Figure A2 shows that comparison of actual and predicted choice by round. The results are strikingly similar, indicating that the spectators were not influenced by being exposed to the treatment themselves.

[Figure A1 about here.]

[Figure A2 about here.]

[Figure A3 about here.]

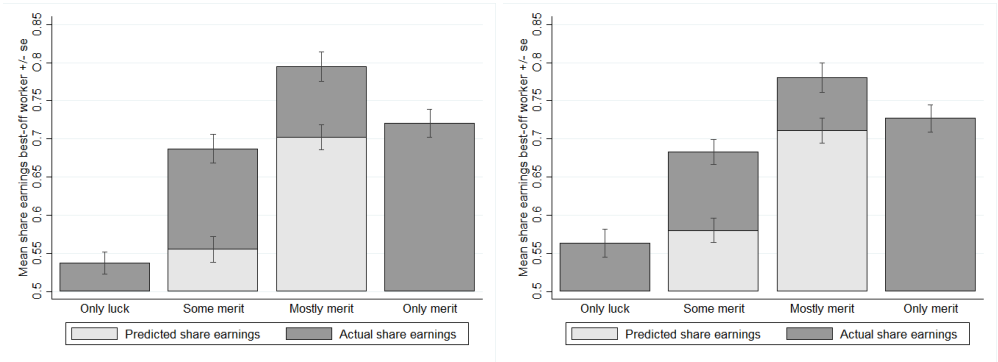
Table A1: Sample statistics and balance test

	Only luck	Some merit	Mostly merit	Only merit	p-value
Female	0.45	0.46	0.45	0.52	0.441
	(0.50)	(0.50)	(0.50)	(0.50)	
Age	0.45	0.46	0.47	0.51	0.564
	(0.50)	(0.50)	(0.50)	(0.50)	
Liberal	0.56	0.55	0.59	0.55	0.712
	(0.50)	(0.50)	(0.49)	(0.50)	
College	0.64	0.63	0.73	0.69	0.074
	(0.48)	(0.48)	(0.44)	(0.47)	
Observations	255	251	245	254	

Note: "Age" in years, "Female" as proportion of the sample, "Liberal" as proportion of the spectators answering that they consider themselves to be liberal and "College" as proportion of the sample reporting College as their highest educational attainment. Standard deviations in parenthesis. The final column reports the p-value from the F-test of regressions of the background characteristic on the treatment dummies.

Figure A1: Share given to high earned by experiment round

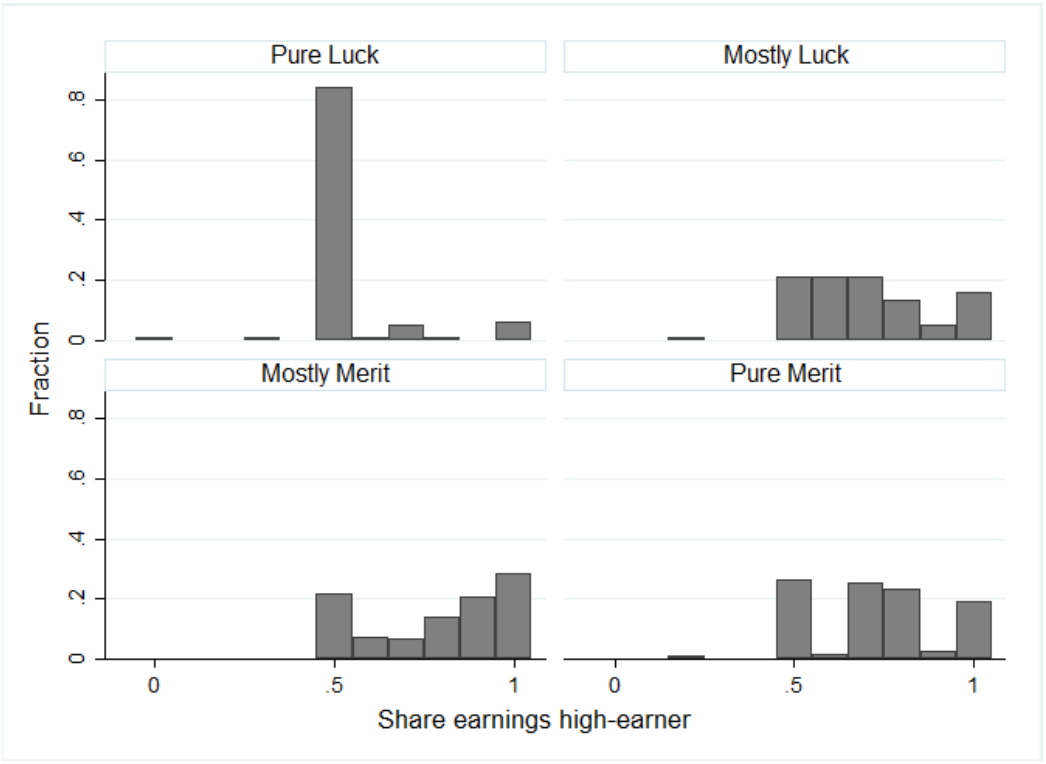
(a) Round 1 (b) Round 2



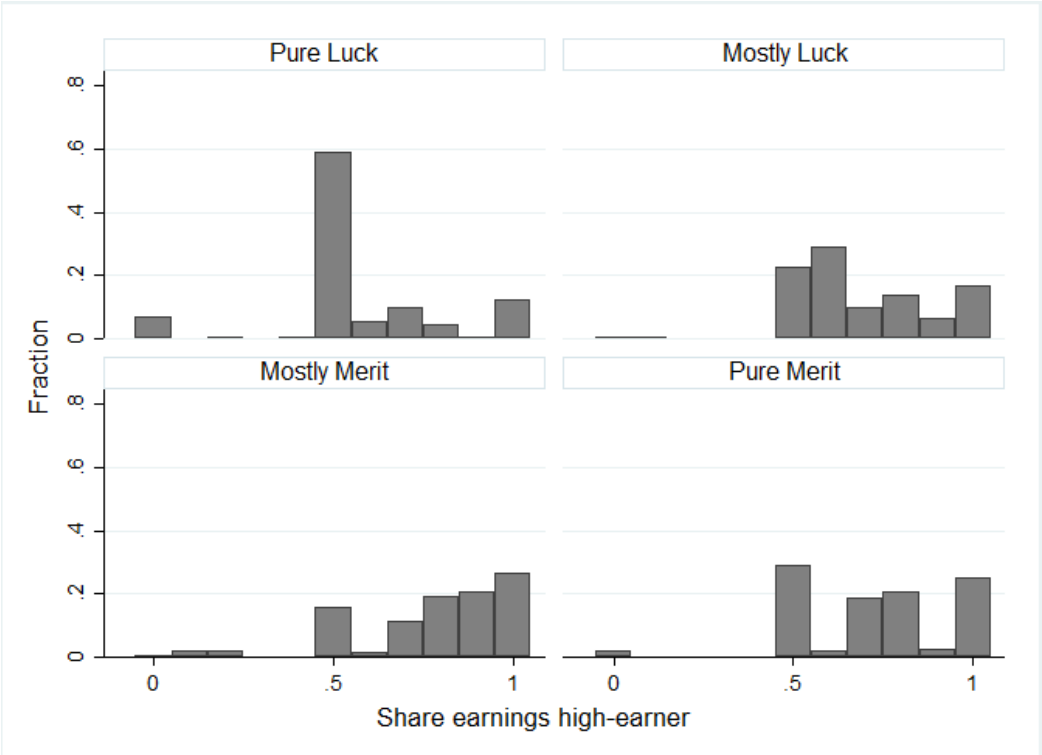
Note: The figure shows the mean share of earnings allocated to high-earner in each of the treatments as well as the predicted share in the some-merit and mostly-merit treatments. In experiment 1 the spectators had also participated in the worker session while experiment 2 was conducted with pure spectators.

Figure A2: Histogram by experiment round

(a) Round 1



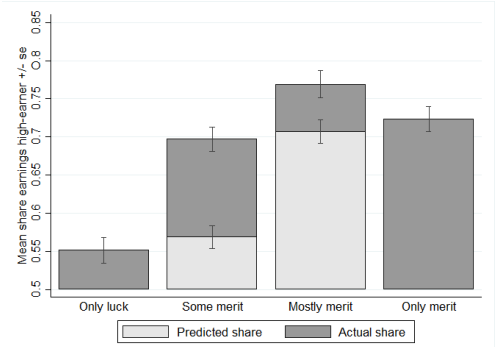
(b) Round 2



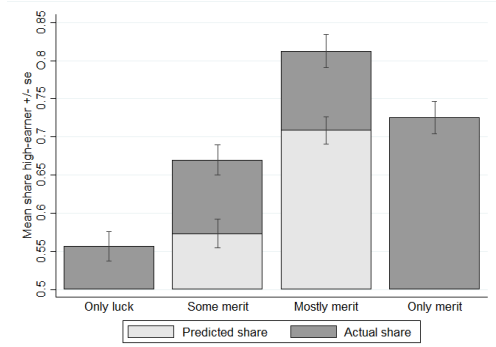
Note: The figure shows, by treatment, the histogram of the fraction of spectators who choose the alternative shares of earnings to the high-earner in each experimental round.

Figure A3: Reward of high-earner: Heterogeneity analysis

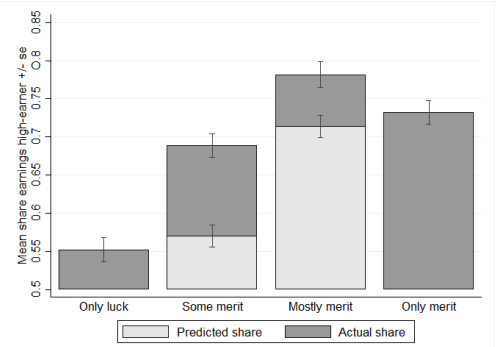
(a) Liberal



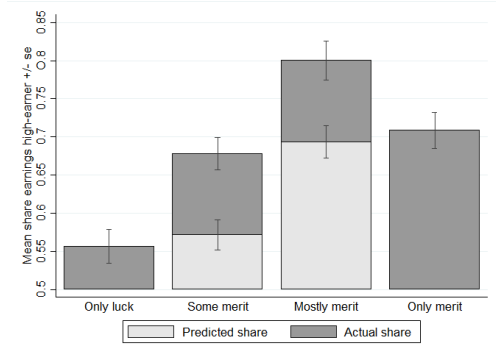
(b) Non-liberal



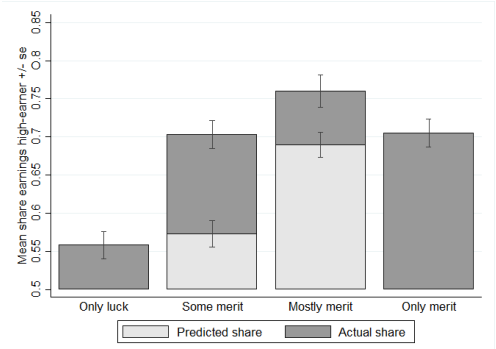
(c) College



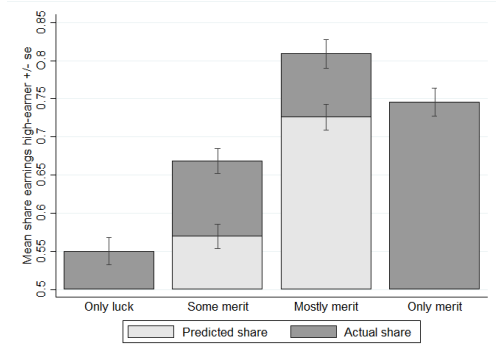
(d) High-School



(e) Female



(f) Male



Note: The figure shows the average share given to the high-earner for each subgroup in the four treatments. It also shows the predicted share given to the high-earner in the some-merit and mostly-merit treatments. The standard errors are indicated by the bars.

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