Determinants of inequality acceptability in a representative sample of the Spanish population

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A B S T R A C T

Why is there general support for equality-enhancing policies in some social contexts, while in others, social inequalities seem to be widely regarded as acceptable? In the last sixty years, this research question has been raised hundreds of times across the social sciences. Here, we use a survey-experimental design that may overcome some of the limitations of previous studies. Three sets of determinants of inequality acceptability are explored: individual socioeconomic status (SES), societal economic inequality, and the source or origin of inequality. The results of a survey experiment conducted in 2020 based on a representative sample confirm that inequalities are considered fairer by high-SES individuals and when they are due to performance. Although the effect of societal inequality on preferences is less robust, we find that in more unequal contexts, equal distributions are judged to be fairer.

1. Introduction

Homans (1961) proposed one of the most influential theories of distributive justice in the social sciences. He revived the old Aristotelian idea of justice as proportionality (Aristotle trans., 1967) and argued that justice exists when the received benefits of a group member are proportional to her investments. The proportionality principle is central to the idea of inequality acceptability since, contrary to the Rawlsian egalitarian ideal (Haidt, 2012; Rawls, 1971), it offers a normative justification for some inequalities to be tolerated, justified, or accepted. Interestingly enough, in the last sixty years, hundreds of experimental studies have been conducted on the empirical validity of the equity or proportionality principle in sociology, economics, psychology, political science, and philosophy.[1] One of the main conclusions of these studies was already anticipated by Homans (1961: 246) when he claimed that people 'differ in their ideas of what legitimately constitutes investment, reward, and cost, and how these things are to be ranked'. Therefore, as Reinhard Selten and his collaborators argued very early on (Güth, 1988; Güth & Tietz, 1986; Selten, 1978), Homan's theory cannot be tested without additional assumptions about what constitutes people's investments or inputs. Given this theoretical ambiguity, the experimental

literature on distributive justice became divided in the eighties between social psychologists and sociologists (Cook & Hegtvedt, 1983; Harris, 1980; Wagstaff et al., 1996) testing the plausibility of the proportionality principle in highly abstract laboratory contexts and economists restricting inputs in the equity formula to the ideas of effort and productivity (Hoffman & Spitzer, 1985; Selten, 1978). The former concluded that the equity formula proposed by Homans was a very constrained representation of people's conception of distributive justice; the latter that people are more likely to accept inequalities when they are perceived as fair, typically because they are the product of effort or merit.

In this paper, we build on more recent definitions of justice as proportionality (Barr et al., 2015; Barr et al., 2016; Cappelen et al., 2007; Demel et al., 2019; Haidt, 2012; Konow, 1996, 2000, 2003). Most of them assume the so-called accountability principle (Konow, 2000, 2003). To judge the fairness or social appropriateness of a distribution, this principle discriminates between discretionary factors one can influence and exogenous variables one cannot. Then, a distribution will be fair if it rejects inequalities coming from factors the agent does not control, such as his or her birthplace (Buchanan, 1986; Roemer, 2000). However, a distribution may assume inequalities related to factors that a

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[1] In the Appendix, we review more than one hundred studies and present some evidence on the methodological differences between fields.

person can control, such as effort. This principle has received empirical support from studies in political science (Frohlich et al., 2004), economics (Almås et al., 2010; Cappelen et al., 2007; Konow, 2000), and sociology (Winter et al., 2012, 2018).

The question is whether the particular methodologies used in different scientific fields may account for some of this heterogeneity. In a previous paper, Barr et al. (2023) partly address this issue by comparing a survey experimental instrument and an incentivized laboratory design. Despite the many differences between laboratory and vignette experimental designs, they show that the two experimental methodologies yield remarkably similar treatment effects. However, they do not apply their survey instrument to understand individual differences. Here, we do so. The idea that survey experiments based on representative samples are strong in external validity and weak in internal validity is widely accepted, and inversely, laboratory experiments based on convenience samples are strong in internal validity and weak in external validity (Jimenez-Buedo & Miller, 2010). Surveys tend not to distinguish between different sources of inequality, and laboratory experimental samples tend to be too small to explore individual and social heterogeneity. In this sense, the two methodologies are complementary.

Our empirical strategy will rely on the hypothetical survey experiment introduced by Barr et al. (2023). However, in our case, it will be applied to a large and heterogeneous sample in different societal contexts. Substantively, we build on theoretical and empirical contributions from different disciplines to examine which economic inequalities individuals in different social and economic contexts regard as acceptable. Three sets of determinants of inequality acceptability will be explored: individual socioeconomic status (SES), societal economic inequality, and the source or origin of inequality. We will focus on individual preferences relating directly to the level of inequality considered acceptable or fair in a particular social context. The experimental methodology proposed here is particularly well suited for eliciting underlying preferences and controlling for the self-interest confound typically present in distributive justice studies.

We exploit a large ($N = 1497$) and heterogeneous sample of Spanish adults who participated in an online survey experiment conducted in 2020 to offer a direct empirical test of the joint effect of societal income inequality, individual SES, and knowledge about the origin of inequality on inequality acceptability. To study the three determinants of inequality acceptability, we will exploit natural variations of societal economic inequality and individual SES, as well as experimental variations of the source of inequality. Economic inequality variation was achieved by exploiting regional variation in inequality in Spain. To measure SES, we recruited samples of participants who are representative of the general population of each region in terms of its sociodemographic composition. Finally, the origin or source of inequality was induced experimentally by conducting distributive justice experiments.

We find a sizable effect of the source of inequality. Participants accept inequalities significantly more when these inequalities are due to effort and productivity. This effect is robust to the interaction with other important intervening factors, such as individual SES and societal inequality. The effect of socioeconomic status is also considerably more robust than the effect of income or education in other large-sample experiments, such as Almås et al. (2020). Furthermore, we report a new result on the effect of societal inequality on fairness views. There is a surprisingly high evaluation of equality in more unequal contexts. In addition to these three main effects, we find an interaction effect between the source of inequality and individual socioeconomic status that is consistent with previous results from economic laboratory experiments (Barr et al., 2015). Finally, although there is some indication that regional inequality may modulate the effect of the source of inequality and individual SES on fairness views, we cannot establish that the three variables produce a conjoint effect.

2. Related literature and hypotheses

2.1. Related literature

Early theoretical economic models assumed self-interested individuals, and, in the context of distributive problems, they stated that poorer people preferred more equal distributions while the rich did not. Albeit variations in empirical specifications, this self-interest approach has received strong empirical support. In sociology, this support comes from longitudinal (Owens & Pedulla, 2014) and cross-national panel surveys (Fernández & Jaime-Castillo, 2018). In political science, Margalit (2013, 2019) connects economic hardship and stated preferences for redistribution. In economics, Alesina and Giuliano (2011) review the survey literature and show a robust correlation between SES and attitudes toward redistribution and equalization. Some experimental studies provide additional evidence of the plausibility of this 'self-interest hypothesis'. Several studies have reported that people are more likely to accept inequalities when they are more educated, have a higher SES, or are not unemployed (Barr et al., 2015, 2016; Demel et al., 2019; Jakiela, 2015).

Only recently have social science researchers explored the effects of macro-level variables (economic growth, income inequality, democracy) on individual values and preferences. Roth and Wohlfart (2018) show that people are less in favor of redistribution and are less likely to support left-wing parties if they have experienced higher inequality during their lives. More generally, political preferences seem to be endogenous and longer periods of democratic government foster support for democracy (Fuchs-Schuendeln & Schuendeln, 2015). Finally, providing people with information about the high level of income inequality lowers their trust in the government to do what is right (Kuziemko et al., 2015). Most previous studies have reported a correlation between a macro-level variable and average levels of beliefs and preferences among the population, but different social groups might be affected by macroeconomic and macropolitical conditions differently.

Few studies provide indirect evidence on the interaction between macro-level conditions and individual experiences. Two recent articles have reported an interaction effect between the shape of the societal income distribution and the individual position in that distribution when explaining preferences for redistribution and equalization. Unfortunately, the direction of that interaction differs between studies. Fernandez and Castillo (2018) conclude that upper classes in highly equal societies show little commitment to inequality reduction, whereas Almås et al. (2020) report that the highly educated accept inequality less in a more equal society.

Beyond individual characteristics and the societal context, we incorporate into our analysis the distinction between different types of inequalities. To do so, we build on recent definitions of justice as proportionality (Barr et al., 2015, 2016; Cappelen et al., 2007; Demel et al., 2019; Haidt, 2012; Konow, 1996, 2000, 2003) and test the 'acknowledgment of earned entitlement' (Barr et al., 2015). As we argue above, contemporary theorizing on equity is consistent with the theoretical foundations developed by Homans (1961), Adams (1965), and subsequent theoretical developments (Austin & Walster, 1975; Berger et al., 1972; Jasso, 1978; Walster et al., 1976). Most theories are based on a sort of 'equity formula' where individual rewards received from a social situation are positively related to individual contributions to that situation, although the exact form of this relation may vary between theories. For example, equity as proportionality is theoretically defined and empirically tested in Cappelen et al. (2007); Frohlich et al. (2004); Haidt (2012); Konow (2000); Winter et al. (2012); and Barr et al. (2015). Individual contributions and rewards are not necessarily objective entities but are defined subjectively. For this 'subjective definition', Festinger's (1957) theory of cognitive dissonance has been favored by both classic (Adams, 1965; Homans, 1961) and contemporary proponents (Barr et al., 2015, 2016; Demel et al., 2019; Konow, 2000). An alternative to the cognitive dissonance formulation is the 'self-serving bias'

hypothesis, which argues that 'people tend to arrive at judgments of what is fair or right that are biased in the direction of their own self-interests' (Babcock & Loewenstein, 1997; Messick & Sentis, 1979). Experimental tests tend to confirm the self-serving-bias hypothesis (Rodriguez-Lara & Moreno-Garrido, 2012; Ubeda, 2014; Winter et al., 2018).

Finally, two recent studies provide indirect evidence of the conjoint effect of the three sets of determinants of inequality acceptability (SES, societal inequality, and source of inequality) presented above. Almås et al. (2020) find that in a relatively unequal society (the United States), the highly educated accept inequality significantly more than the less educated, whereas, in a relatively equal society (Norway), the less educated accept inequality more. Furthermore, this interaction between (individual) educational level and (societal) income inequality occurs only when the inequality is due to a difference in productivity, i.e., it is a triple interaction effect involving a scrutinizer's level of education, the source of the inequality under scrutiny, and the overall level of inequality in the scrutinizer's society. Barr and Miller (2020) have shown that Almås et al.'s findings replicate when they compare a highly equal society in Northern Spain with relatively unequal societies in Southern Spain, the United Kingdom, and South Africa. However, they also show that the drivers of the triple interaction effect vary depending on which societies are compared.

2.2. Theoretical framework and hypotheses

Our theoretical framework shares with previous theories the idea that, in a distributive situation, individuals face a 'trade-off' between their self-interest and some normative principle of distributive justice. Some well-known behavioral theories of fairness (Bolton & Ockenfels, 2000; Fehr & Schmidt, 1999) restrict the normative part of the equation to equality and assume a tension between selfishness and equality. These are theories of inequality or difference aversion (Cooper & Kagel, 2017). Unfortunately, by restricting attention to equality, they disregard the long tradition of justice as proportionality presented above (Aristotle, 1967; Haidt, 2012; Homans, 1961). For that reason, we do not assume any particular normative principle but propose that individual characteristics and the societal context will jointly affect the normative principle to which an individual adheres. To generate testable predictions, this theory assumes that *strict equality* (splitting rewards equally) and *strict proportionality* (splitting rewards proportional to contributions) are the two limits of the continuum of possible normative principles. These two limits coincide with the most common fairness ideals identified by Cappelen et al. (2007) and subsequent studies. The strict egalitarian ideal prescribes splitting rewards equally regardless of the context (experimental treatment in our case). The liberal egalitarian and libertarian ideals assume some notion of proportionality. Liberal egalitarians rely on proportionality when rewards are earned or deserved and on equality otherwise. Libertarians would allocate rewards proportionally to initial assignments regardless of the context.

A trade-off is likely to produce psychological tension, the sort of tension Festinger (1957) calls 'cognitive dissonance', and people will try to reduce that dissonance and re-establish some psychological balance. Fortunately, there is enough experimental evidence about how people resolve this tension, and this evidence is consistent with some simple theoretical models proposed recently (Barr et al., 2015; Cappelen et al., 2007; Konow, 2000). In Barr et al. (2015), people resolve the tension by choosing distributions that are located between selfish behavior and their normative ideal. This prediction calls for a two-step research process in which one should investigate (1) the distributive justice principle guiding individual behavior and (2) how individuals solve the trade-off between their self-interest and their preferred normative principle. The survey-experimental design presented here is useful to address the first step.

Following previous studies (Barr et al., 2015, 2016), we conjecture that individuals from a low socioeconomic status (SES) background tend

to adopt an egalitarian principle of justice as a way to rationalize the redistribution they benefit from. This helps alleviate the cognitive dissonance that arises from otherwise adhering to meritocratic ideals while receiving resources they may not feel entitled to. On the other hand, individuals from high SES backgrounds tend to lean towards meritocratic ideals that rationalize their privileged positions in society. This minimizes the cognitive dissonance that would arise from adhering to egalitarian principles while not fully supporting the redistribution of their own earnings. The basis for incorporating the societal context into this theoretical framework stems from the significant cross-cultural differences observed in the previous empirical research. Almås et al. (2020) argue that the persistence of inequality over time may shape citizens' views, by normalizing inequalities in those places where inequalities are large and common. We follow this argument and predict a positive relationship between societal inequality and individual inequality acceptance. Considering these previous results, we will be interested in the following qualitative predictions concerning the association between economic inequality, SES, source of inequality, and inequality acceptability:

Hypothesis 1. *On average, across societal contexts and individual types, a difference in productivity instead of luck as the source of inequality causes an increase in inequality acceptability.*

Hypothesis 2. *On average, across societal contexts and sources of inequality, high-SES individuals are more likely to regard inequalities as acceptable.*

Hypothesis 3. *On average, across individual types and sources of inequality, economic inequality is considered more acceptable in more unequal societies.*

Hypothesis 4. (Individual differences in the Acknowledgment of Earned Entitlement): *Across societal contexts, high-SES participants respond more strongly in terms of inequality acceptability than low-SES participants to the introduction of a difference in productivity as the source of inequality.*

Hypothesis 5. *High-SES participants respond more strongly in terms of inequality acceptability in relatively unequal societies than in relatively equal societies to the introduction of a difference in productivity as the source of inequality.*

Hypotheses 1–3 describe the mean effects of the three independent variables considered in this study. Specifically, we predict positive effects of the source of inequality (individual productivity), individual (high) SES, and (high) economic inequality on individual inequality acceptability. The predictions about the source of inequality and individual SES reflect the most common findings of the previous literature. The effect of economic inequality is less robust in previous studies. We hypothesize that inequality may be more acceptable in societies that are more unequal if people adapt their preferences concerning inequality to the inequality level of their environment. This is what Almås et al. (2020) find when they report higher levels of inequality acceptance in an unequal society (USA) than in an equal society (Norway). Hypothesis 4 predicts an interaction effect between (high) individual SES and the source of inequality (individual productivity). Barr et al. (2015), among others, have empirically supported this interaction effect. They conclude that high-SES individuals make allocations to others that reflect those others' initial endowments more when those endowments are earned rather than random; among low-SES individuals, this is not the case. Hypothesis 5 proposes a triple interaction between the three determinants. Formally, this triple interaction is the result of multiplying the two-way interaction described in Hypothesis 4 (source of inequality and SES) by an indicator of (high) societal economic inequality (inequality). Almås et al. (2020) and Barr and Miller (2020) provide suggestive evidence that high-SES individuals accept merit-based

inequalities significantly more than low-SES individuals in relatively unequal societies. Here, we formulate and test this triple-interaction hypothesis.

These research hypotheses, as well as the main features of the experimental design, were preregistered in an institutional registry prior to the beginning of the fieldwork.[2]

3. Methods

3.1. Research design

The key experiments were conducted online and consisted of a vignette manipulation embedded in a questionnaire designed to elicit sociodemographic and attitudinal variables related to inequality and redistribution.[3] Respondents were presented with a classical scenario of a group project and were asked questions about the fairness of different reward allocation schemes. This article studies inequality acceptability directly, rather than inferring it from policy support or ideological dispositions. The survey experiment was introduced and validated against results from incentivized laboratory experiments by Barr et al. (2023). Our work applies this instrument to a large heterogeneous sample of the Spanish adult population. Our vignette experiment was followed by two unrelated tasks, a dictator game (DG), and two questions to elicit inequality aversion. These tasks were introduced after the vignette, so they could not affect the results presented here. The goal of the DG and the questions was to study social preferences in a large and heterogeneous sample, as well as the association between social preferences and the socioeconomic status of participants. The results of these analyses are part of a larger project and are not reported in this article.

3.2. Survey instrument

The survey presented participants with a scenario or vignette within which a decision-maker had to choose between two possible reward allocation schemes between three other individuals. Then, participants were asked to indicate using a seven-point scale ranging from "very unfair" to "very fair", how fair they considered each of the decision-makers' possible choices. In particular, the vignette described the second phase of a behavioral experiment with groups of four subjects not knowing who else belonged to the group. The initial resource allocation was unequal: one member received 16€, one 11€, and one 6€. The fourth group member, receiving no initial endowment, had to decide whether to leave the unequal distribution across the other three or balance it by allocating 11€ to each. We limited the number of possible allocations to these two obvious candidates (unequal or equal) to reduce time costs.

On the first page of the survey instrument, the initial distribution was represented graphically as counters or tokens on a circular "tray" divided into three areas that are colored differently (Fig. 1). Then, the second page (Fig. 2) again showed the distribution of the initial allocations using the same image followed by the two final distributions to be chosen by the decision-maker: equal allocation (distribution 1) or unequal initial allocation (distribution 2). The seven-point scale that the participants were asked to use to assess the distributions was underneath each of the two possible final distributions. The information given to participants in the scenario or vignette regarding the basis for the initial allocation differed across treatments in the survey. In the earned treatment, participants were told that initial allocations were based on individual performance. In the random treatment, they were told that allocations were independent of individual performance. Participants were randomly assigned to earned and random treatments. If distribution 1 (unequal tray) is considered significantly fairer under the earned

than under the random treatment, that is interpreted as evidence that earned entitlement is acknowledged. This finding can be confirmed by testing whether distribution 2 (equal tray) is considered significantly less fair under the earned than under the random treatment.

In addition to our experimental design, the survey included alternative paths to elicit attitudes toward inequality and redistribution from the state, in which respondents were asked to locate themselves at both scales that range from the minimum desire for redistribution to the maximum desire. The questions were displayed as follows: "On a scale 1 to 10, where 1 = «People should take more responsibility for being able to sustain themselves and cover their own expenses» and 10 = «Public Administration should hold responsibility for ensuring everyone has what they need to survive», please position yourself" and "Please, indicate to which point you agree or disagree with the following statement (on a scale 1 to 5, where 1 is agree and 5 disagree): «The State should take action in reducing differences in income levels»."

3.3. Sample

The survey was conducted online in the fall of 2020 by a professional pollster in Spain. Beyond eliciting sociodemographic characteristics, location (zip code), and attitudes toward inequality and redistribution, the survey included the distributive justice experiment described above. Every participant evaluated the two trays (unequal and equal). Participants received a small participation fee, consisting of points accumulated across survey participation, as is customary in online panels. In our study, participants accumulated points worth 1.6 euros as compensation for a seven-minute participation on average.[4] The sample of participants ($N = 1497$)[5] was a heterogeneous sample from the Spanish adult population and was selected via quota in terms of gender, age, and region. The respondents were 49.2% female, 43.4 years old on average, 46.5% had tertiary education and 18.8% were unemployed or inactive. Descriptive statistics across treatments are shown in Table 1. Individual characteristics are similarly distributed between experimental conditions, except for SES. Participants in the *earned treatment* are slightly more educated and richer than in the *random treatment*. Hence, we control for these variables in the empirical models reported below. Questions to elicit redistribution preferences were balanced across treatments, as well as political ideology.

As we could expect, the mean fairness evaluation of each tray differs significantly between treatments. The proportional tray was considered fairer when the respondent had been told that the differences reflected performance, whereas the equally distributed tray was evaluated as worse, on average, under such a scheme. Interestingly, the evaluations of the proportional and the equal trays in the earned treatment are almost identical on average. At the individual level, the two evaluations are highly, but not perfectly negatively correlated ($r=-0.664$). In the random treatment, this correlation between the two evaluations is also negative, but moderate ($r=-0.516$). Only when the distribution of allocations was random, there is a clear tendency to judge positively the equal tray and more negatively the proportional one. Participants clearly find an equal distribution of randomly generated allocations fair. In contrast, both equal and proportional distributions are considered moderately fair when allocations were earned.

The sample was selected from the 19 Spanish administrative territories (17 regions and 2 autonomous cities). To gauge the actual

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[2] Preregistrations are available online (https://aspredicted.org/dk35s.pdf).

[3] The survey was originally administered in Spanish. A translated version of the survey can be found in the Appendix.

[4] This amount does not include the earnings of the dictator, in which participants earned 1 extra Euro on average.

[5] The original sample size was 1,500. However, 1 subject answered the vignette evaluation sheet under both treatments due to a mistake in the implementation of the online survey. Moreover, 2 subjects reported systematically unreasonable answers throughout the sociodemographic questionnaire, so they were removed from the sample as well. Therefore, our analytic sample consisted of 1,497 subjects.

The situation

In this situation four people were grouped together. Each of the four does not know who else is in his or her group. The research assigns each of the four people an initial sum of money. One person was assigned €16, another €11 and the other €6. The fourth member was given a tray that looks like the one below (each circle worth €1). Each section of the tray represents the amount of money assigned initially to the other three members of the group. The initial sums of money assigned to each group member depend on how productive they were when working in the previous workshop.
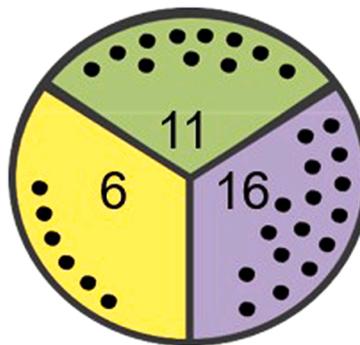
The fourth member of the group has to make a choice about how much money the other members of their group are to take home at the end of the workshop. Specifically, he/she has to decide whether to leave their tray as it is (in which case the other three members goes home with the amount of money initially assigned to them **based on his/her productivity)** or distribute the money equally among them.

In the next pages we show you several possible decisions and ask your opinion about whether these decisions are fair or not for you.

Fig. 1. Vignette (Barr et al., 2023).

inequality present in each region, we draw on several sources. The inequality measures we include in the analysis are the Gini index at the regional level (NUTS2) from the Atlas of Income Distribution of the Spanish National Statistics Office (2018). Respondents were equally distributed over treatments in terms of the inequality they faced in their places of living.

3.4. Analytic approach

Our outcome variable involves participants' judgment of the proposed distributions. More specifically, to measure *inequality acceptability,* participants were asked to evaluate the fairness of the trays using a seven-point scale. Thus, each participant reports two fairness evaluations, one per tray. We add a dummy variable that takes value 1 when it refers to the equal tray, 0 otherwise. In our data, this variable ranges

from *one* (very unfair) to *seven* (very fair). The main treatment variable is the manipulation of the origin of inequality in the vignette experiment. We distinguish between the *earned* treatment and the *random* treatment. Concerning societal inequality, we use Gini indices at the regional level (NUTS2). With respect to *socioeconomic status (SES),* we use two different measures. First, we asked subjects to indicate their household monthly income. The dummy variable *High Income* is equal to *1* if the subject reports a monthly net income above 2500€ and *0* otherwise. We include an additional variable to examine the potential impact that social status can have on inequality acceptability. We consider the level of studies achieved, which could be interpreted as a proxy for income. We construct a dummy variable *Tertiary Studies* taking the value of *1* if the respondent has completed tertiary studies and 0 otherwise.

To test our Hypotheses H1 to H5, we estimate the following linear regression model:

Suppose Individual A received a tray that looked like this:
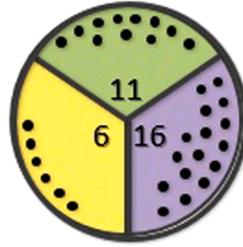
on which each of the three segments related to one of the three other people involved in the task and the number of tokens in each **segment depended on how productive the person to whom the quadrant relates was in the sorting task.**

Then, Individual A had to choose 1 of the following 2 final token distributions:
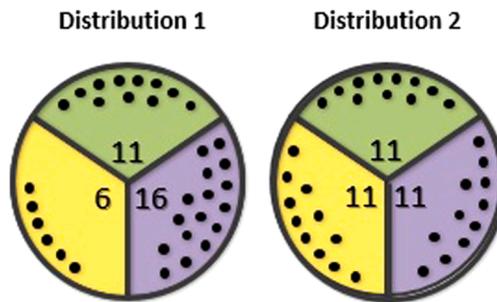
Please indicate how fair you think each of these choices is by ticking one of the red boxes below under each choice

Fig. 2. Evaluation sheet (Barr et al., 2023).

$$Y_i = a_0 + a_1 ET_i + a_2 E_i + a_3 SES_i + a_4 Ineq_i + a_5 (E_i * SES_i) + a_6 (E_i * Ineq_i)$$
$$+ a_7 (SES_i * Ineq_i) + a_8 (E_i * Ineq_i * SES_i) + a_9 (ET_i * E_i)$$
$$+ a_{10} (ET_i * SES_i) + a_{11} (ET_i * Ineq_i) + a_{12} (ET_i * E_i * SES_i)$$
$$+ a_{13} (ET_i * E_i * Ineq_i) + a_{14} (ET_i * SES_i * Ineq_i)$$
$$+ a_{15} (ET_i * E_i * SES_i * Ineq_i) + a_{16} X_i + \varepsilon_i$$

where Y_i stands for i's evaluation of the tray; ET_i *is 1 when it refers to the equal tray and 0 when the evaluated tray is the proportional one;* E_i *is 1 if i played under the* earned treatment *and zero if i played under the* random treatment; SES_i *is the individual socioeconomic status, and* $Ineq_i$ *refers to the degree of inequality of the region of respondent i.* X_i *refers to a set of sociodemographic variables that are self-reported by subject i in the questionnaire, namely, age, gender, Spanish nationality, civil status, level of education, and ideology.*

4. Results

4.1. Mean effects of the three main variables

Our main experimental manipulation involves a vignette description in which half of the participants were told that inequalities in the tray were due to performance in a previous task (*earned treatment*) and the other half were told that inequalities were due to chance (*random treatment*). Participants were asked to evaluate the fairness of the two distributions simultaneously. Panels (A) and (B) of Fig. 3 plot the average evaluation of the proportional and equal trays under the *random* and *earned treatments*. The evaluation of the proportional tray is 1.26 points (44.15%) higher in the *earned treatment* than in the *random treatment* (Mann-Whitney-Wilcoxon rank-sum test, $p < 0.001$). In contrast, the assessment of the equal tray is 1.33 points (23.4%) lower in the *earned treatment* (Mann-Whitney-Wilcoxon rank-sum test, $p < 0.001$). The regression results are reported in Tables 2 and 3. The coefficient of the experimental treatment variable (*earned*) and the interaction with the

Table 1

Descriptive statistics.

Variable	Random	Earned	Sample	Difference	P value
Evaluation of proportional tray (1–7)	2.94	4.23	3.59	−1.29***	P<0.001
Evaluation of equal tray (1–7)	5.60	4.24	4.92	1.36***	P<0.001
The state should reduce income differences (1–5)	4.13	4.08	4.11	0.05	0.322
Own responsibility vs. government responsibility (1–10)	6.67	6.52	6.59	0.14	0.207
Tertiary education (%)	43.02	49.93	46.48	−6.90***	0.002
High income (%)	24.02	29.94	26.96	−5.92**	0.011
Gini (2018)	0.327	0.325	0.326	0.002	0.185
Ideology (1 left, 10 right)	4.92	5.03	4.97	−0.11	0.331
Age	42.73	44.06	43.38	1.32*	0.061
Female (%)	51.06	47.46	49.24	3.60	0.163
Spanish (%)	95.45	94.66	95.11	0.78	0.482
Married (%)	47.72	51.73	49.72	−4.01	0.121
Unemployed (%)	19.77	17.93	18.84	−1.83	0.418

Table 1: Main descriptive statistics. The table displays the means of the relevant variables (proportions for dichotomous variables) by treatment, their differences, and the p-values of the Mann-Whitney test and the proportionality test.

* stands for significance at 10%.

** at 5% and.

*** at 1%.

tray (*equal tray*earned*) are consistently significant across the different specifications. The linear combination of these two variables (*Earned (Equal Tray=1)*) shows that the evaluations of equal shares in the earned treatment are lower than in the random treatment. The size of this effect is higher than the effect of any other variable.

The political-free framing of this design implies advantages in eliciting attitudes toward inequalities in terms of minimizing the weight of ideology or partisanship as heuristics to build her own preferences. Nevertheless, our dependent variables sufficiently capture the political implications of these attitudes if we look at the relationships between the reported attitudes in the vignette and the included questions related to the redistributive preferences. The pairwise correlations between the evaluation of the equal tray and the self-reported preferences for more state redistribution are positive and significant ($p<0.001$ & 0.019), whereas the inverse pattern occurs with the evaluation of the proportional tray (both $p<0.001$). A simple linear regression shows that both questions for redistributive preferences have significant explanatory power over the vignettes' evaluations (see Table A.1 in the Appendix).

Result 1. *On average, inequalities are considered fairer when they are due to performance than to luck. Likewise, equal shares are regarded as less fair in the earned treatment.*

The effect of SES on inequality acceptance is also very robust. Panels (C) and (D) of Fig. 3 shows that high-income individuals evaluate the proportional tray as fairer than non-high-income individuals (*Mann-Whitney-Wilcoxon rank-sum test, $p<0.001$*) and the equal tray as less fair (*Mann-Whitney-Wilcoxon rank-sum test, $p = 0.023$*). Panels (E) and (F) demonstrate that the effect of SES is similarly important when this variable is operationalized using education. The evaluation of the proportional tray by individuals with tertiary education is higher than the evaluation made by participants with lower education (*Mann-Whitney-Wilcoxon rank-sum test, $p<0.001$*). The opposite effect is observed for the evaluation of the equal tray, where those with lower education made higher valuations (*Mann-Whitney-Wilcoxon rank-sum test, $p<0.008$*).
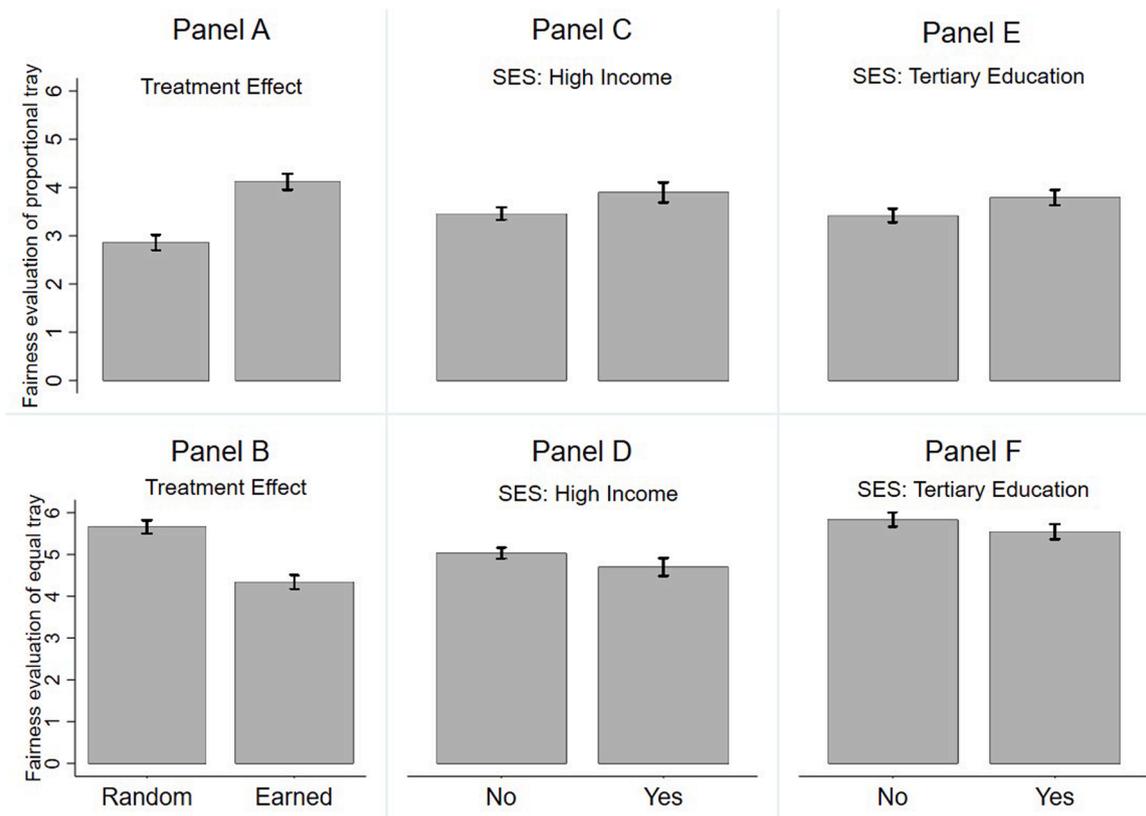
Fig. 3. Fairness evaluation of proportional and equal trays by defined subsamples.
Note: The figure shows the average fairness evaluation of both trays for each subsample: Panels (A) and (B) refer to treated vs. nontreated subjects; Panels (C) and (D) refer to high-income vs. non-high-income individuals; and Panels (E) and (F) refer to highly educated vs. non-highly educated subjects. The whiskers indicate standard errors. All these graphs correspond to models from Table 2.

Table 2

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	(1)	(2)	(3)	(4)
	Fairness evaluation of trays			
	SES: High Income		SES: Tertiary Studies	
Specification A				
Equal Tray	0.851	0.781	0.735	0.735
	(2.055)	(2.057)	(2.039)	(2.040)
Earned	1.278***	1.280***	1.279***	1.283***
	(0.103)	(0.104)	(0.104)	(0.104)
SES	0.336***	0.334***	0.280***	0.276***
	(0.120)	(0.120)	(0.104)	(0.104)
Inequality	0.165	0.109	−0.152	−0.192
	(3.478)	(3.473)	(3.451)	(3.455)
Equal Tray *Earned	−2.625***	−2.637***	−2.263***	−2.632***
	(0.186)	(0.186)	(0.187)	(0.187)
Equal Tray * SES	−0.520**	−0.517**	−0.428**	−0.428**
	(0.212)	(0.212)	(0.187)	(0.187)
Equal Tray * Inequality	5.929	6.155	6.473	6.473
	(6.250)	(6.256)	(6.202)	(6.208)
Constant	2.804**	3.071***	2.867**	3.289
	(1.143)	(1.157)	(1.134)	(1.146)
Linear combinations				
Earned	−1.348***	−1.357***	−1.352***	−1.349***
(Equal Tray=1)	(0.105)	(0.105)	(0.106)	(0.105)
SES	−0.184	−0.183	−0.148	−0.152
(Equal Tray=1)	(0.118)	(0.119)	(0.105)	(0.105)
Inequality	6.094*	6.264*	6.321*	6.281*
(Equal Tray=1)	(3.506)	(3.504)	(3.493)	(3.483)
Controls	No	Yes	No	Yes
Obs	1497	1495	1495	1495
Specification B				
Equal Tray	0.756	0.689	0.678	0.677
	(2.060)	(2.062)	(2.043)	(2.043)
Earned	1.273***	1.267***	1.277***	1.2776***
	(0.120)	(0.120)	(0.143)	(0.143)
SES	0.328*	0.310*	0.277*	0.269*
	(0.171)	(0.171)	(0.141)	(0.141)
Inequality	0.164	0.109	−0.152	−0.191
	(3.480)	(3.476)	(3.452)	(3.455)
Earned* SES	0.016	0.043	0.006	0.014
	(0.239)	(0.239)	(0.208)	(0.208)
Equal Tray * Earned	−2.460***	−2.476***	−2.481***	−2.481***
	(0.218)	(0.218)	(0.260)	(0.260)
Equal Tray * SES	−0.190	−0.195	−0.264	−0.264
	(0.291)	(0.292)	(0.249)	(0.249)
Equal Tray * Inequality	5.975	6.195	6.432	6.433
	(6.259)	(6.265)	(6.203)	(6.207)
Equal Tray * Earned* SES	−0.623	−0.607	−0.326	−0.326
	(0.420)	(0.421)	(0.373)	(0.373)
Constant	2.807**	3.059***	2.868**	3.287***
	(1.145)	(1.158)	(1.135)	(1.148)
Linear combinations				
Earned (Equal Tray=1)	−1.187***	−1.208***	−1.204***	−1.203***
	(0.124)	(0.123)	(0.147)	(0.146)
SES	0.137	0.115	0.014	0.006
(Equal Tray=1)	(0.165)	(0.166)	(0.145)	(0.145)
Inequality	6.139*	6.304*	6.281*	6.242*
(Equal Tray=1)	(3.509)	(3.508)	(3.489)	(3.479)
Earned*SES	−0.606***	−0.564**	−0.320	−0.312
(Equal Tray=1)	(0.234)	(0.234)	(0.210)	(0.209)
Controls	No	Yes	No	Yes
Obs	1497	1495	1495	1495

Note: Table 2 reports estimated coefficients from regressions for Fairness Evaluation of trays on the listed explanatory variables plus additional controls in even columns –age, gender, Spanish nationality, married status, ideology and

education (just for models with SES: high income). Standard errors are clustered by individuals and reported in parentheses. The table presents four columns; the dependent variable is the assessment of fairness. Equal Tray is introduced as a dummy, as well as their interactions with the relevant regressors. The effect of interest variables on the fairness evaluation of equal tray appears as linear combinations, whereas their effect on the fairness evaluation of proportional tray is displayed in the corresponding cell. Socioeconomic status (SES) is defined through High Income variable in regressions (1) and (2), whilst Tertiary Studies is used as SES in Columns (3) and (4). Inequality is operationalized by using Gini indices at the regional level (NUTS2). Specification B builds on the first one by including the interaction between treatment and SES to distinguish heterogeneous effects.

*** - sig. at 1%.
** -sig. at 5%.
* -sig at 10%.

This is the case even though these two variables are only weakly correlated ($r = 0.242, p < 0.001$) in our sample. Also, we reach the same conclusion by observing Tables 2 and 3, where we report a higher evaluation of the proportional tray from high-income participants and a lower evaluation when they face an equal distribution. Proportional earnings are seen as fairer by high-SES subjects, regardless of the operationalization (through high-income or tertiary studies) and the specification. However, the effect of SES on the evaluation of equal shares is not significant according to the linear combination of *SES (Equal Tray=1)*.

Result 2. *On average, across societal contexts and sources of inequality, high-SES individuals are more likely to regard inequalities as fairer and equal shares as less fair.*

Next, we focus on the effect of societal inequality on inequality acceptability. Can the level of economic inequality affect our degree of tolerance toward inequality? We expected that those living in more unequal environments would show a higher tolerance to inequality. Contrary to expectations, our results from the regression analysis using regional inequality returned no effect on inequality acceptability. Nevertheless, when considering the evaluation of the equal tray, we find that these are considered fairer in more unequal regions as depicted by the linear combination of *Inequality (Equal Tray=1)* in Table 2.

Result 3. *On average, across individual types and sources of inequality, economic inequality is not considered fairer in more unequal contexts. In contrast, equal shares are considered fairer in more unequal regions.*

4.2. Heterogeneous effects

Tables 2 and 3 show the results testing the moderating effect of the source of inequality (productivity or luck) on the impact of socioeconomic status (SES) on the trays' evaluations. We expected that high-SES participants would respond more strongly in terms of inequality acceptability than low-SES participants to the introduction of a difference in productivity as the source of inequality. However, our results from the regression analysis indicate that there is no such moderating effect since none of our cross-effects reach statistical significance in the evaluation of the proportional tray. Nonetheless, we find a consistent interaction effect in the expected direction when considering the equal tray (see linear combination *Earned*SES* when equal tray=1). High-SES participants consider the equal distribution less fair when a difference in productivity is introduced.

Result 4. *Across societal contexts, high-SES participants do not respond more strongly in terms of inequality acceptability than low-SES participants to the introduction of a difference in productivity as the source of inequality. In contrast, when a difference in productivity is introduced, high-SES participants consider the equal tray less fair.*

Finally, Table 3 shows the results for the full regression model that tests the effect of the quadruple interaction between the distribution of

Table 3

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	(1)	(2)	(3)	(4)
	Fairness evaluation of trays			
	SES: High Income		SES: Tertiary Studies	
Equal Tray	2.961	2.920	1.669	1.669
	(2.498)	(2.500)	(2.593)	(2.595)
Earned	1.320***	1.314***	1.352***	1.351***
	(0.141)	(0.141)	(0.163)	(0.163)
SES	0.410**	0.387*	0.219	0.206
	(0.205)	(0.205)	(0.169)	(0.169)
Inequality	2.755	2.657	0.719	0.508
	(4.172)	(4.164)	(4.344)	(4.353)
Earned * SES	−0.010	0.028	0.017	0.023
	(0.289)	(0.288)	(0.250)	(0.251)
Earned* Inequality	−0.132	−0.128	−0.243	−0.241
	(0.219)	(0.217)	(0.261)	(0.263)
SES* Inequality	−0.240	−0.220	0.154	0.165
	(0.340)	(0.339)	(0.241)	(0.243)
Earned*SES*	0.057	0.021	0.014	0.020
Inequality	(0.493)	(0.493)	(0.404)	(0.406)
Equal Tray * Earned	−2.560***	−2.580***	−2.598***	−2.598***
	(0.259)	(0.259)	(0.299)	(0.299)
Equal Tray * SES	−0.376	−0.379	−0.131	−0.131
	(0.353)	(0.353)	(0.295)	(0.295)
Equal Tray * Inequality	−0.753	−0.614	3.403	3.403
	(7.594)	(7.601)	(7.883)	(7.890)
Equal Tray *Earned*SES	−0.680	−0.660	−0.517	−0.517
	(0.510)	(0.510)	(0.450)	(0.450)
Equal Tray*	0.272	0.285	0.371	0.371
Earned*Inequality	(0.388)	(0.389)	(0.473)	(0.474)
Equal Tray*	0.537	0.534	−0.346	−0.346
SES*Inequality	(0.564)	(0.564)	(0.427)	(0.427)
Equal Tray* Earned * SES	0.255	0.242	0.488	0.488
* Inequality	(0.851)	(0.852)	(0.722)	(0.722)
Constant	1.958	2.228	2.583*	3.069**
	(1.372)	(1.385)	(1.426)	(1.440)
Linear combinations				
Earned	−1.240***	−1.265***	−1.245***	−1.247***
(Equal Tray=1)	(0.144)	(0.143)	(0.167)	(0.167)
SES	0.034	0.007	0.087	0.075
(Equal Tray=1)	(0.206)	(0.205)	(0.173)	(0.171)
Inequality	2.002	2.042	4.122	3.912
(Equal Tray=1)	(4.258)	(4.265)	(4.416)	(4.408)
Earned*SES	−0.690**	−0.632**	−0.500**	−0.494**
(Equal Tray=1)	(0.283)	(0.284)	(0.250)	(0.249)
Earned*Inequality	0.140	0.157	0.128	0.129
(Equal Tray=1)	(0.219)	(0.218)	(0.266)	(0.264)
SES*Inequality	0.297	0.313	−0.192	−0.181
(Equal Tray=1)	(0.303)	(0.304)	(0.247)	(0.248)
Earned*SES*Ineq	0.312	0.263	0.502	0.508
(Equal Tray=1)	(0.469)	(0.470)	(0.410)	(0.408)
Controls	No	Yes	No	Yes
Obs	1497	1495	1495	1495

Table 3 reports estimated coefficients from regressions of our full model for Fairness Evaluation of trays on the listed explanatory variables plus additional controls in even columns –age, gender, Spanish nationality, married status, ideology, and education (just for models with SES: High income)-. Standard errors are clustered by individuals and reported in parentheses. The table presents four columns; the dependent variable is the assessment of the tray. Equal Tray is introduced as a dummy, as well as their interactions with the relevant regressors. The impact of interest variables on the fairness evaluation of the equal tray appears as linear combinations, whereas their effect on the fairness evaluation of the proportional tray is displayed in the corresponding cell. Socioeconomic status (SES) is defined through the High-Income variable in regressions (1) and (2), whereas Tertiary Studies is used as SES in Columns (3) and (4). Inequality is operationalized by using a binary variable from Gini indices at the regional level (NUTS2), which takes 1 if it is above the median regional value (i.e., subject lives in a relatively unequal CCAA) and 0 otherwise.

*** - sig. at 1%.

** -sig. at 5%.

* -sig at 10%.

the tray, SES, the overall level of economic inequality, and the source of inequality on the perception of the fairness evaluation of trays. Contrary to our expectations, we find no robust effect of the quadruple interaction neither for the proportional tray nor for the equal tray (results for the lineal combination of the triple interaction when equal tray=1). The coefficient is in the expected direction, but the estimation is considerably noisy.

Result 5. *High-SES participants do not respond more strongly in terms of inequality acceptability in relatively unequal societies than in relatively equal societies to the introduction of a difference in productivity as the source of inequality.*

4. Conclusions

Scientific replication is the cornerstone of scientific advancement and knowledge accumulation (Falk and Heckman 2009). In this article, we replicated, using a large sample and a vignette experiment, the acknowledgment of earned entitlement, one of the most stable experimental results in the social sciences (Barr et al., 2015; Konow, 2000). The richness of our sample allowed us to test how this experimental result interacts with other determinants typically considered in the survey literature. The outcome is a comprehensive study of the main predictors of inequality acceptability at the individual level.

Why is there general support for equality-enhancing policies in some social contexts, while social inequalities seem to be widely regarded as acceptable in others? This article combines theories and methodologies from different disciplines to examine the factors affecting the acceptability of economic inequalities by individuals. In particular, we explore three sets of determinants of inequality acceptability: individual socioeconomic status (SES), societal economic inequality, and the source or origin of inequality. Although the results are in line with the extant literature on preferences for redistribution, a number of contributions should be highlighted.

First, using a large and heterogeneous sample, we replicate the acknowledgment of the earned entitlement effect (Barr et al., 2015; Konow, 2000). The size of our sample allows us to control for a number of potential confounding factors. Moreover, we report a robust effect of socioeconomic status in line with previous studies (Alesina & Giuliano, 2011; Barr et al., 2015, 2016; Demel et al., 2019; Jakiela, 2015). Income is typically a noisy variable in this literature, but in our experiment, it works very well as a predictor of attitudes toward inequality. The same is true for education. In our experiment, the effect of individual SES can be estimated with these two variables indistinctively, even though they are not highly correlated. Third, we report a result on the effect of societal inequality on fairness views. Equal shares are considered fairer in more unequal regions. This result should be taken with caution since economic inequality is not considered fairer in more unequal contexts. The effect of societal inequality on individual inequality acceptability is then an open question. Another open question in the literature was the (geographical) level of inequality that could be relevant for fairness attitudes and preferences. We find that the regional level of inequality affects attitudes toward equality. Finally, interactions between societal inequality and other covariates are not robust either. This question, previously discussed by Almås et al. (2020) and Barr and Miller (2020) calls for further investigation.

This article offers insights using an experimental instrument that can be applied in very different contexts where a large and heterogeneous sample is required. These include international and cross-cultural comparisons, experimental manipulations embedded in ongoing representative panels, or situations in which onsite experiments are severely limited, as it was the case during the recent global pandemic. The fact that our main experimental manipulation produced highly significant results using a representative sample of participants and its interaction with real-world individual characteristics may encourage other researchers to increasingly use validated survey instruments.

Our study is not without limitations, and further research should explore a larger number of individual covariates, as well as alternative measures of these variables. This should include measures of actual economic inequality at different levels of disaggregation and perceived inequality. Perceptions could play a crucial role in building individual preferences and may differ from the actual context, as Fernández-Albertos and Kuo (2018) point out. Finally, our research exploits regional heterogeneity within a country. Future research could explore cross-cultural differences.

Data availability

Data will be made available on request.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.socec.2023.102072.

References

Adams, J. S. (1965). Inequity in social exchange. *Advances in Experimental Social Psychology, 2*, 267–269.

Alesina, A., & Giuliano, P. (2011). Preferences for redistribution. In J. Benhabib, A. Bisin, & M. O. Jackson (Eds.), *Handbook of social economics* (pp. 93–132). North Holland: Elsevier.

Almås, I., Cappelen, A., Sorensen, E., & Tungodden, B. (2010). Fairness and the development of inequality acceptance. *Science, 328*, 1176–1178.

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

Aristotle, Rackham, H. (1967). *Politics*. Cambridge, MA: Harvard University Press. trans.

Austin, W., & Walster, E. (1975). Equity with the world: the trans-relational effects of equity and inequity. *Sociometry, 38*, 474–496.

Babcock, L., & Loewenstein, G. (1997). Explaining bargaining impasse: the role of self-serving biases. *Journal of Economic Perspectives, 11*(1), 109–126.

Barr, A., & Miller, L. (2020). The effect of education, income inequality and merit on inequality acceptance. *Journal of Economic Psychology*, (276), 80.

Barr, A., Burns, J., Miller, L., & Shaw, I. (2015). Economic status and acknowledgement of earned entitlement. *Journal of Economic Behavior and Organization, 118*, 55–68.

Barr, A., Miller, L., & Ubeda, P. (2016). Moral consequences of becoming unemployed. *Proceedings of the National Academy of Sciences of the United States of America, 113* (17), 4676–4681.

Barr, A., Miller, L., & Ubeda, P. (2023). Is the acknowledgment of earned entitlement effect robust across experimental modes an populations? *Sociological Methods & Research, 52*(1), 209–230.

Berger, J., Zelditch, M., Anderson, B., Cohen, B., Berger, J., Zelditch, M., & Anderson, B. (1972). Structural aspects of distributive justice: A status-value formulation. In *Sociological theories in progress, 2* pp. 119–246). Boston: Houghton Mifflin.

Bolton, G., & Ockenfels, A. (2000). ERC: A theory of equity, reciprocity and competition. *American Economic Review, 90*, 166–193.

Buchanan, J. (1986). *Liberty, market and the state: Political economy in the 1980s*. New York: New York University.

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

Cook, K. S., & Hegtvedt, K. A. (1983). Distributive Justice, Equity, and Equality. *Annual Review of Sociology, 9*, 217–241.

Cooper, D., & Kagel, J. (2017). Other regarding preferences: A selective survey of experimental results. J. Kagel, J., Roth, A. (Eds.) In *Handbook of experimental economics, 2* p. 217). Princeton, NJ: Princeton University Press.

Demel, S., Barr, A., Miller, L., & Ubeda, P. (2019). Commitment to political ideology is a luxury only students can afford: A distributive justice experiment. *Journal of Experimental Political Science, 6*(1), 33–42.

Fehr, E., & Schmidt, K. (1999). A theory of fairness, competition and cooperation. *Quarterly Journal of Economics, 114*, 817–868.

Fernandez, J. J., & Jaime-Castillo, A. M. (2018). The institutional foundation of social class differences in pro-redistribution attitudes: A cross-national analysis, 1985–2010. *Social Forces, 96*(3), 1009–1038.

Fernandez-Albertos, J., & Kuo, A. (2018). Income perception, information, and progressive taxation: Evidence from a survey experiment. *Political Science Research and Methods, 6*(1), 83–110.

Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.

Frohlich, N., Oppenheimer, J., & Kurki, A. (2004). Modelling other-regarding preferences and an experimental test. *Public Choice, 119*, 91–117.

Fuchs-Schuendeln, N., & Schuendeln, M. (2015). On the endogeneity of political preferences: Evidence from individual experience with democracy. *Science, 347* (6226), 1145–1148.

Güth, W. (1988). On the behavioural approach to distributive justice –a theoretical and experimental investigation. In S. Maital (Ed.), *Applied behavioral economics* (pp. 703–717). Brighton: Wheatsheaf Books.

Güth, W., & Tietz, R. (1986). *Strategic power* versus *distributive justice: An experimental analysis of ultimatum bargaining*. In H. Brandstatter, & E. Kirchler (Eds.), *Economic psychology* (pp. 129–137). Linz: Rudolf Trauner Verlag.

Haidt, J. (2012). *The righteous mind: Why good people are divided by politics and religion*. New York: Pantheon Books.

Harris, R. J. (1980). Equity judgments in hypothetical, four-person partnerships. *Journal of Experimental Social Psychology, 16*, 96–115.

Hoffman, E., & Spitzer, M. L. (1985). Entitlements, Rights, and Fairness: An Experimental Examination of Subjects' Concepts of Distributive Justice. *Journal of Legal Studies, 14*, 259–298.

Homans, G. (1961). Social behavior. *Its elemenrary forms*. New YorkHarcourt: Brace & World, Inc.

Jakiela, P. (2015). How fair shares compare: experimental evidence from two cultures. *Journal of Economic Behavior and Organization, 118*, 40–54.

Jasso, G. (1978). On the justice of earnings: A new specification of the justice evaluation function. *American Journal of Sociology, 83*, 1398–1419.

Jimenez-Buedo, M., & Miller, L. M. (2010). Why a trade-off? The relationship between the external and internal validity of experiments. *Theoria, 25*(3), 301–321.

Konow, J. (1996). A positive theory of economic theory. *Journal of Economic Behavior & Organization, 31*(1), 13–35.

Konow, J. (2000). Fair shares: Accountability and cognitive dissonance in allocation decisions. *American Economic Review, 90*(4), 1072–1091.

Konow, J. (2003). Which is the fairest one of all? A positive analysis of justice theories. *Journal of Economic Literature, 41*(4), 1188–1239.

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.

Margalit, Y. (2013). Explaining social policy preferences: Evidence from the great recession. *American Political Science Review, 107*(01), 80–103.

Margalit, Y. (2019). Political responses to economic shocks. *Annual Review of Political Science, 22*, 277–295.

Messick, D., & Sentis, K. (1979). Fairness and preference. *Journal of Experimental Social Psychology, 15*(4), 418–434.

Owens, L. A., & Pedulla, D. S. (2014). Material welfare and changing political preferences: The case of support for redistributive social policies. *Social Forces, 92*(3), 1087–1113.

Rawls, J. (1971). *A theory of justice*. Cambridge, MA: Harvard University Press.

Rodriguez-Lara, I., & Moreno-Garrido, L. (2012). Self-interest and fairness: Self-serving choices of justice principles. *Experimental Economics, 15*, 158–175.

Roemer, J. E. (2000). *Equality of opportunity*. Cambridge, MA: Harvard University Press.

Roth, C., & Wohlfart, J. (2018). Experienced inequality and preferences for redistribution. *Journal of Public Economics, 167*, 251–262.

Selten, R. (1978). The equity principle in economic behavior. In H. W. Gottinger, & W. Leinfellner (Eds.), *Decision theory and social ethics* (pp. 289–302). Dordrecht: D. Reidel Publishing Company.

Ubeda, P. (2014). The consistency of fairness rules: An experimental study. *Journal of Economic Psychology, 41*, 88–100.

Wagstaff, G. F., Huggins, J., & Perfect, T. J. (1996). Equality ratio equity, general linear equity and framing effects in judgments of allocation divisions. *European Journal of Social Psychology, 26*(1), 29–41.

Walster, E., Berscheid, E., & Walster, G. W. (1976). New directions in equity research. In L. Berkowitz, & E. Walster (Eds.), *Equity theory: toward a general theory of social interaction* (pp. 1–42). New York: Academic Press.

Winter, F., Rauhut, H., & Helbing, D. (2012). How norms can generate conflict: An experiment on the failure of cooperative micro-motives on the macro-level. *Social Forces, 90*, 919–946.

Winter, F., Rauhut, H., & Miller, L. (2018). Dynamic bargaining and normative conflict. *Journal of Behavioral and Experimental Economics, 74*, 112–126.