

Choice and personal responsibility: What is a morally relevant choice? *

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Abstract

The principle that people should be held personally responsible for the consequences of their choices is a fundamental moral ideal in Western societies. We report from a large-scale experimental study of how far-reaching this principle is for inequality acceptance. Are individuals held personally responsible for nominal and forced choices, which do not meet minimal conditions for a morally relevant choice? We provide strong evidence of the minimal conditions being violated and discuss underlying mechanisms driving this behavior. We argue that our findings shed light on important current political debates about personal responsibility and redistributive policies.

The principle that people should be held personally responsible for the consequences of their choices is a fundamental moral ideal in Western societies, but the

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interpretation and application of this principle have been a heated political issue for centuries (Greenfield, 2011). In fact, it has been argued in recent years, that American politics has become “a personal responsibility” crusade (Hacker, 2006); for example, the significant drop in government transfers to single parents and families with nonemployed members in the US appears to be rooted in the presumption that these groups should be held personally responsible for their situation.¹ The principle of personal responsibility has also become a prominent notion in health policy debates in many industrialized countries, where lifestyle-related diseases, such as high cholesterol and obesity, contribute importantly to the burden of disease and costs of health-care in society. Indeed, it has been argued that much of the political discourse on life-style related diseases rests on how to understand personal responsibility (Wikler, 2002; Brownell, Kersh, Ludwig, Post, Puhl, Schwartz, and Willett, 2010).

In this paper, we examine experimentally what people consider to be a morally relevant choice in distributive decisions. Specifically, we study whether individuals are held personally responsible for *nominal* and *forced* choices, in the sense that they have to bear the consequences of these choices. It is by now well established that in many situations people hold individuals personally responsible for their choices in distributive decisions (Konow, 2000; Cappelen, Drange Hole, Sørensen, and Tungodden, 2007; Almås, Cappelen, Sørensen, and Tungodden, 2010; Cappelen, Konow, Sørensen, and Tungodden, 2013a; Durante, Putterman, and Weele, 2014), but it may be argued that nominal and forced choices do not meet minimal moral conditions for when we should hold someone personally responsible. In the philosophical literature, these minimal conditions have been stated as follows (Valentynne, 2008):

- A person **should not be held personally responsible** for the outcome of a choice if:
 - the person could not have changed the likelihood of the outcome by choosing differently (**no ex ante causal responsibility**), or

¹See Robert A. Moffitt’s Presidential Address to the Population Association of America “The Deserving Poor, the Family, and the U.S. Welfare System“ (Moffitt, 2015).

- the person could only have avoided the outcome at unreasonably large cost (**no acceptable alternative**).

We provide a formalization of these two conditions in the next section. The first condition is formalized by all alternatives in the choice set having the same probability distribution over outcomes, while the second condition is formalized by all alternatives in the choice set being weakly first order dominated by the chosen alternative. Both conditions thus capture cases where an individual ex ante would not have had any reason to choose differently, and thus it may be argued that in such a case an individual has not exercised agency and should therefore not be held personally responsible for the ex post outcome of the choice.²

To study whether people violate these minimal conditions for personal responsibility in their distributive choices, we conducted a lab experiment and a large-scale online experiment, a total of 8616 participants. In the experiments, we study third-party *spectators* who distribute income between two *stakeholders*. We use a between-subject treatment design, with a *base* treatment and two *choice* treatments. In the base treatment, the stakeholders make no choice and their earnings are determined by a lottery which gives earnings to one of the stakeholders earnings and no earnings to the other. A spectator then has to decide whether to redistribute from the stakeholder with earnings to the stakeholder with no earnings. In the choice treatments, the stakeholders make a choice before their earnings are determined, but these choice situations do not meet the minimal conditions of ex ante causal responsibility and the presence of an acceptable alternative outlined in the philosophical literature. In the *nominal choice* treatment, stakeholders choose between two lotteries that are identical ex ante, and thus they are not in a position to change the likelihood of the possible outcomes. In the *forced choice* treatment, stakeholders choose between a lottery and a safe alternative, where the safe alternative does not represent an acceptable alternative to the lottery. Taken together, if the spectators endorse the minimal conditions for assigning personal responsibility, the introduction of a nominal or forced choice should not affect the distribution decision; we

²There is an extensive literature on how to define an autonomous (or voluntary) choice, see for example Scanlon (1998); Olsaretti (2004); Vallentyne (2008). For a more general discussion of the relationship between autonomy, agency, and choice, see Sen (2002) and Schlosser (2015).

should observe the same level of income inequality implemented by the spectators in the choice treatments as in the base treatment. In the large-scale online experiment, we also implemented a number of additional treatments to shed further light on the underlying mechanisms of the spectator choices.

The main finding of the paper is that the spectators significantly violate the minimal conditions for assigning personal responsibility. The presence of a forced choice or a nominal choice causes a large increase in the willingness of spectators to accept income inequality between the stakeholders. The introduction of a forced choice causes an increase in implemented income inequality by almost 60% relative to the base treatment in the lab experiment, and by almost 130% in the online experiment, and the introduction of a nominal choice causes an increase in implemented inequality by almost 80% in both the lab experiment and the online experiments. These effects reflect that the spectators transfer less to the stakeholders with no earnings when the stakeholders have made a nominal or forced choice, which means that the worse off is held personally responsible for the bad outcome in situations where he or she had no reason to choose differently. We further show that the effects are robust to several manipulations of the choice situation: they also appear when the stakeholders have not been working and for different values of the safe alternative in the forced choice treatment. In the online experiment, we establish that the effects are robust across subgroups (political affiliation, gender, age, education, income), and we provide evidence showing that the effects are not driven by a cognitive bias or intuitive decision-making.

Our findings suggest that people consider the role of choice in determining agency and personal responsibility to go beyond the restrictions of the two minimal conditions. They find individual choices morally relevant in cases where these choices do not change the ex ante probabilities of the outcomes and in cases where there is no acceptable alternative to the chosen alternative. Our experimental results thus show that the presence of choice is a remarkably powerful source of inequality acceptance in society.

Our paper also provides evidence on the robustness and replicability of lab experimental findings (Open Science Collaboration, 2015; Camerer, Dreber, Forsell, Ho, Huber, Johannesson, Kirchler, Almenberg, Altmejd, Chan, Heikensten, Holzmeis-

ter, Imai, Isaksson, Nave, Pfeiffer, Razen, and Wu, 2016). We show that the treatment effects identified in the lab experiment with students replicate in a large-scale online experiment with a general population. However, we also show that the interaction effects found in the student sample do not replicate in the online experiment, which was purposefully scaled to have statistical power to identify the interaction effects established in the lab experiment. We believe that these findings demonstrate the importance of investigating the robustness of lab experimental results in large-scale samples and in alternative economic environments.

Our paper contributes to several strands of literature. The far-reaching effect of choice on inequality acceptance is of importance for understanding how fairness preferences may shape people's views on redistributive policies (Piketty, 1995; Alesina and Angeletos, 2005; Bénabou and Tirole, 2006b). In particular, it suggests that there will be less demand for redistribution in societies where institutions allow for more freedom of choice. Relatedly, the paper contributes to the emerging literature on how markets shape our moral considerations (Bowles, 1998; Vohs, Mead, and Goode, 2006; Sandel, 2012; Besley, 2013; Falk and Szech, 2013; Bartling, Weber, and Yao, 2015; Kirchler, Huber, Matthias, and Sutter, 2016; Bartling and Özdemir, 2017). A defining feature of any market is that people make choices, and our results suggest that markets may reduce people's willingness to redistribute income, even in cases where individuals' market choices are nominal or reflect situations where there are no acceptable alternatives. Our study also relates to the findings in Savani and Rattan (2012), who demonstrate that highlighting the concept of choice makes people less supportive of redistributive policies by activating the belief that life outcomes are caused by individual choices. We show that the presence of choice makes people more willing to accept inequalities even when individuals are not causally responsible for the outcome.

The findings also provide new insights to the large and growing experimental literature on how fairness considerations shape individual behavior (Konow, 2000; Cherry, Frykblom, and Shogren, 2002; Falk, Fehr, and Fischbacher, 2003; Cappelen et al., 2007; Falk, Fehr, and Fischbacher, 2008; Konow, Saijo, and Akai, 2009; Almås et al., 2010; Cappelen, Moene, Sørensen, and Tungodden, 2013b; Durante et al., 2014; Mollerstrom, Reme, and Sørensen, 2015; Cappelen and Tungodden,

forthcoming). A main focus in this literature has been on distributive behavior in situations where people are clearly *ex ante* causally responsible for the outcome and where there are acceptable alternatives in the choice set. It has been shown that a large majority of people in such situations hold individuals personally responsible for their choices. The present paper is the first study that aims to shed light on what is considered a morally relevant choice for assigning personal responsibility, where we show that people violate what can be considered minimal conditions for when we should hold someone personally responsible.

The paper is organized as follows: Section 1 provides a formal statement of the two minimal conditions. Section 2 and Section 3 report from the lab experiment, while Section 4 and Section 5 report from the online experiment. Section 6 discusses possible mechanisms driving the results, while Section 7 concludes. Supplementary analysis is reported in Appendix A, while a complete set of instructions are reported in Appendix B.³

1 Minimal conditions: A formal framework

To formalize the minimal conditions, let us define an abstract set of possible states of the world S , and let agents make choices between alternatives $X_i \in \mathcal{X}^i = \{X_1, X_2, \dots\}$ that are mappings from the states of the world to outcomes $\mathcal{M} \subset \mathbb{R}$, $X_i : S \rightarrow \mathcal{M}$. A probability measure μ on the sigma-algebra $\sigma(S)$ allows us to derive corresponding probability measures for each of the choices in \mathcal{X}^i that now can be considered random variables with probability measures ν_i , such that $\nu_i(B) = \mu(X_i^{-1}(B))$ for all B in $\sigma(\mathcal{M})$; and we define the distribution function F_i for the outcomes of each choice, $F_i(x) = \nu_i(\{s : X_i(s) \leq x\})$.

Given this formal framework, we can state the two conditions for when a person should not be held personally responsible for choosing X_i :

- All alternatives $X_i, X_j \in \mathcal{X}^i$ imply the same probability distribution over outcomes, $F_i(x) = F_j(x)$ for all $x \in \mathcal{M}$ (**no *ex ante* causal responsibility**).

³Data and code to reproduce the estimates are available at <https://github.com/FAIR-NHH/mmbruteluck/>

- The chosen alternative X_i weakly dominates all alternatives $X_j \in \mathcal{X}'$, $F_i(x) \leq F_j(x)$ for all $x \in \mathcal{M}$ (**no acceptable alternative**).

In the experiment, we present this framework in the simplest possible way. We define two states of the world, corresponding to a Green or a Yellow ball drawn from an urn, $S = \{G, Y\}$, with a uniform probability measure, $\mu(\{G\}) = \mu(\{Y\}) = 1/2$.

The nominal choice is introduced by the spectators choosing between the two alternatives, X_G and X_Y :

$$X_G(\{G\}) = L, \quad X_G(\{Y\}) = 0, \quad X_Y(\{G\}) = 0, \quad X_Y(\{Y\}) = L, \quad (1)$$

where $L > 0$. It follows that $F_G(x) = F_Y(x)$ for all $x \in \mathcal{M}$, and thus the condition of no ex ante responsibility is satisfied.

The forced choice is introduced by the spectators choosing between the two alternatives, X_G and X_S :

$$X_G(\{G\}) = L, \quad X_G(\{Y\}) = 0, \quad X_S(\{G\}) = 0, \quad X_S(\{Y\}) = 0. \quad (2)$$

It follows that $F_G(x) \leq F_S(x)$ for all $x \in \mathcal{M}$, and thus the condition of no acceptable alternative is satisfied.

2 Lab experiment: Design and sample

In the first part of the paper, we focus on the lab experiment conducted with students, which we then compare to a large-scale online experiment conducted with a general population. We here describe the lab experimental procedures and the student sample, before we detail the different treatments.

2.1 Experimental procedures and sample

The experiment with students was conducted in a computer lab using a web-based interface and neither subjects nor experimenters could associate decisions with particular participants. The incentivised part of the experiment had three phases: a

work phase, an earnings phase, and a redistribution phase. In the work phase, the participants worked on a real effort task; in the earnings phase, the payment for the real effort task was determined; and in the redistribution phase, each participant acted as a spectator and decided whether to redistribute earnings between two other participants (stakeholders) in the treatment. After the incentivized part of the experiment was completed, we asked the participants to write a short text about what motivated their decision as spectator in the redistribution phase. We also collected background information about age, gender, and political affiliation (i.e., which party they voted for in the last general election). Finally, the participants completed a three-item cognitive reflection test measuring the ability to correct for incorrect intuitive answers through reflection (Frederick, 2005).

All payments were made in cash immediately after the experiment, where special care was taken to ensure anonymity in the payment procedure. The computer assigned a payment code to each of the participants, and a group of assistants who were not present in the lab during the experiment prepared envelopes containing the payments corresponding to each payment code. After bringing the envelopes to the lab, the assistants immediately left and the envelopes were handed out in accordance with the payment codes. This procedure was explained to all participants at the start of the experiment. Average payment was 475 NOK (approximately 80 USD at the time of the experiment), including a 100 NOK show-up fee.

We recruited a total of 422 participants from the general student population enrolled at the University of Bergen and at the Norwegian School of Economics. At the beginning of the experiment, each participant was randomly assigned to one of three treatments. The participants were on average 22.7 years, 54% were males, and they scored on average 1.6 out of 3 on the cognitive reflection test. 41% of the participants self-reported to support one of the two right-wing parties in Norway, which is close to the distribution of votes in the last election in Norway. The treatments were balanced with respect to gender, age, cognitive reflection, and political affiliation.⁴

⁴Further details on the background information are provided in Table A.1 and Figure A.1 in the online appendix.

2.2 Base treatment

In the work phase, the participants worked on a descrambling real effort task. The participants were given sets of five words, for example "IS, SALTY, SKY, THE, BLUE", and the task was, for each of these sets, to make a sentence using four of the words. The participants were asked to work continuously on this task for 30 minutes. There was no production requirement and the participants were not informed that they would be paid for their work.

In the earnings phase, the participants were informed that they would be paid for taking part in the work phase. In the base treatment, each participant was told that his or her earnings would be determined by a lottery in which a ball would be randomly drawn from an urn containing an equal number of yellow and green balls. If a yellow ball was drawn, the participant would earn 800 NOK and if a green ball was drawn, the participant would earn 0 NOK. Importantly, in the base treatment, the participants were not asked to make any *choice* and differences in earnings were therefore entirely a result of luck. The participants were also told that later there would be a redistribution phase, but no further details were provided about the redistribution phase at this point.

In the redistribution phase, a lucky and an unlucky participant were anonymously paired, such that the earnings distribution in the pair was always (800, 0). All participants then made a spectator decision for one such pair of two other participants, where they could transfer any amount of the lucky participant's earnings to the unlucky participant. If a spectator decided not to transfer any money to the unlucky participant, the lucky participant would be paid 800 NOK and the unlucky participant 0 NOK for the task.⁵ All spectators had taken part in the same treatment as the two participants for which they made a decision, but they did not receive any information about their own earnings before they made the spectator decision.

⁵If more than one spectator made a decision for a pair of participants, we randomly selected one of the spectator decisions and paid out accordingly.

2.3 Treatment variations

The two choice treatments only differ from the base treatment in the earnings phase of the experiment, and Figure 1 provides an extensive game form representation of how the earnings were determined in each of the three treatments.

[Figure 1 about here]

In the *nominal choice* treatment, earnings were determined by the same lottery as in the base treatment, but the participants had to choose whether the yellow or the green ball should give earnings. The two alternatives in the choice set, yellow and green, provided ex ante identical prospects, and thus the participants faced a nominal choice. The participants could not reduce the likelihood of the bad outcome by making a specific choice, and, importantly, the inequality in earnings was therefore also in this treatment entirely a result of luck. In the *forced choice* treatment, we decided to implement a small positive fixed payment of 25 NOK instead of 0 as the safe alternative, which implies that the lottery strictly speaking does not weakly first order dominate the safe payment.⁶ We did this to avoid confusion among the spectators about the experimental design, as it might seem strange that someone has to choose between two alternatives where one is weakly dominated. However, we return to this issue in the online experiment, where we tested the robustness of this experimental design. Both in the nominal choice and the forced choice treatments, the participants were told that there would be a redistribution phase later, but no further details were provided about the redistribution phase at this point.

To summarize, in the redistribution phase, the spectators in all treatments had to determine whether to redistribute from a lucky participant with earnings of 800 NOK to an unlucky participant with earnings of 0 NOK. The only difference between the base treatment and the choice treatments was that the spectators in the choice treatments were informed that the participants had made a choice in the earnings phase, and the nature of this choice.

⁶The expected value of the lottery, 400 NOK, is 16 times higher than the value of the safe alternative. A participant would have to be more risk averse than the 95th percentile of the participants in the study of Choi, Fisman, Gale, and Kariv (2007) to prefer the safe alternative based on expected utility arguments (calculations available upon request).

3 Results from the lab experiment

We first provide an overview of the spectator decisions. Figure 2 shows histograms of the amount transferred from the lucky participant to the unlucky participant in all three treatments. We observe that 63% of the spectators choose to equalize income between the lucky and the unlucky participant in the base treatment. This fraction falls significantly in the nominal choice treatment to 42% and in the forced choice treatment to 47% ($p < 0.01$ and $p = 0.01$). We also observe that about 10% of the participants in the base treatment do not transfer anything to the unlucky participant, a share that increases to about 20% both in the nominal choice treatment ($p = 0.050$) and the forced choice treatment ($p = 0.084$).

[Figure 2 about here]

To study how the introduction of a forced or nominal choice affects the level of inequality implemented by the spectator, we introduce the following measure of inequality between the two participants:

$$\text{Inequality} = \frac{|\text{Income Lucky} - \text{Income Unlucky}|}{\text{Total Income}} \in [0, 1].$$

This inequality measure is equivalent to the Gini coefficient in the present set of distributive situations and takes the value one if the spectator decides not to transfer anything to the unlucky participant and the value zero if the spectator equalizes and transfers 400.

[Figure 3 about here]

The left panel of Figure 3 shows the average income inequality implemented in the three treatments. In the base treatment, we observe significant redistribution; the average level of income inequality implemented by the spectators is about 0.2. This shows, in line with previous research, that most spectators perceive income inequality due to luck as unfair when people have done the same work, but also that a non-negligible fraction of the spectators hold others personally responsible for the outcome of lotteries (Cappelen, Sørensen, and Tungodden, 2010; Almås et al.,

2010; Cappelen et al., 2013a). The introduction of a forced choice causes a large increase in inequality acceptance; average income inequality implemented by the spectators in the forced choice treatment is almost 60% ($p = 0.007$) higher than in the base treatment. Even more strikingly, we find that the introduction of a nominal choice increases income inequality by almost 80% ($p < 0.001$). In the right panel of Figure 3, we observe the same patterns for the share of spectators that give nothing to one of the participants: it increases by about 90% ($p = 0.041$) and 120% ($p = 0.007$) with the introduction of a forced choice and a nominal choice.

Table 1 presents the corresponding linear regression results, where the dependent variable is the level of inequality implemented by the spectator, or an indicator variable taking the value one if the spectator has given nothing to the worse off. In both cases, we observe that the estimated treatment effects are significant and robust to the inclusion of a set of background variables. The regression results therefore clearly demonstrate that the introduction of a forced or nominal choice strongly affects the extent to which the spectators hold the participants responsible for the outcome, which means that many spectators violate the minimal conditions for assigning personal responsibility. From the estimated effects of the background variables, we also observe that the spectator behavior is strongly associated with political views and gender; left-wing spectators and females implement significantly less inequality and are more likely to assign some income to the worse off. There is no significant relationship between spectator behavior and their age or performance on the cognitive reflection test.

[Table 1 about here]

In Table 2, we study whether the effect of introducing a choice depends on the background characteristics of the spectator. In this analysis, we pool the two choice treatments and focus on the inequality measure as the dependent variable.⁷ We report linear regressions using the same set of dependent variables as in Table 1, but introduce interaction variables for political view, gender, age, and the performance

⁷In the online appendix, we show that the patterns are the same in each of the two choice treatments (Table A.3, Table A.4) and robust to using the share giving nothing to one of the participants as the dependent variable (Table A.5).

on the cognitive reflection test. We observe that there is a strong choice effect on the level of inequality implemented by the right-wing spectators (shown by the estimated coefficient for “Choice”): the average level of inequality increases from 0.21 in the base treatment to 0.46 in the choice treatments. In contrast, the introduction of a forced or nominal choice does not have an economically or statistically significant effect for left-wing spectators and the interaction effect between being left-wing and being in one of the choice treatments is highly significant. We also observe a strong interaction effect with regard to gender, where the choice effect is present only among males. We do not find any significant heterogeneities in terms of age and the score on the cognitive reflection test, which may reflect that the student sample is relatively homogenous in these dimensions.

[Table 2 about here]

4 Online experiment: Design and sample

In this part, we report from a large-scale online experiment conducted with the general population in Norway to shed further light on the findings from the lab experiment. We replicate the three treatments from the lab experiment, but also introduce five new treatments. The online experiment allows us to study whether the findings generalize to a general population sample, are robust to variations in the experimental design, and reflect cognitive biases in the decision-making of the spectators.

4.1 Experimental procedures and sample

In the large-scale online experiment that involved 8194 participants, we combined two different platforms. We recruited 5757 subjects from the general population of Norway through a leading international survey-provider (KANTAR), to act as third-party spectators in the redistribution phase.⁸ In contrast to the lab experiment, the

⁸The sample size for the three treatments that replicated the lab experiment was decided based on the criterion that we should have statistical power of 85% to identify a political interaction effect if it were at least half the size of the estimated political interaction effect in the lab experiment.

spectators had no other role in the experiment: they only conducted a real redistributive decision for the participants (stakeholders) recruited separately from the Amazon Mechanical Turk (AMT) online labor market platform.⁹ Each participant recruited from AMT was randomly allocated to a treatment, which either included both a work phase and an earnings phase or just an earnings phase. For the participants who had their earnings determined by a lottery, we randomly matched a winner and a loser in the same treatment and each spectator then made a decision for one such pair of stakeholders. The spectator decision was implemented for the stakeholders in the pair within a few days after the study was conducted.

Spectators were randomly allocated to treatments and were paid a fixed compensation for taking part in the study, independent of their spectator decision. The spectators also answered a set of general questions about background characteristics and a set of belief questions, and they conducted the cognitive reflection test. The spectators were on average 48.5 years old, 52% were males, and 31% of the spectators self-reported to support one of the two right-wing parties in Norway. They scored on average 1.4 out of 3 on the cognitive reflection test. As shown in Panel B of Table A.1, the spectators were balanced on the background characteristics across treatments.

4.2 Treatments

In the online experiment, we replicated the three treatments from the lab experiment: base, nominal choice, and forced choice. The earnings were lower than in the lab experiment to match the average earnings on the online labor market platform, but we made them proportional to the outcomes in the lab experiment: 8 USD or 0 USD with equal probability in the lottery and a fixed payment of 0.25 USD in the forced choice treatment. Hence, for these three treatments, the main difference in the experimental design between the lab experiment and the online experiment was that the spectators making the distributive decision in the online experiment had not

⁹The spectators were told that there was a one in five chance that their choice would be implemented. We recruited 2437 subjects from AMT. The participants who chose not to take part in the lottery in the forced choice treatment received their earnings. In addition, all the participants received a fixed compensation of 2 USD.

been involved in the work and the earnings phases.

In order to study whether the presence of a work phase would affect the spectator decisions, in particular the choice effect on inequality acceptance, we also conducted a variation of the three main treatments without a work phase. In these three treatments, the spectators made a distributive choice for stakeholders who had moved straight to the earnings phase. In the base treatment with no work, the stakeholders had been told that they would earn 8 USD or 0 USD, depending on the outcome of the lottery, while in the nominal and forced choice treatments with no work, they had made the same choice as in the corresponding treatment with work.

Finally, in order to study whether the spectator choices in the forced choice treatment would be sensitive to the fact that we had a small positive fixed payment as an alternative to the lottery, we conducted additional forced choice treatments (with a work phase) where we reduced the fixed payment to make the choice set in line with our formal definition of a forced choice. The fixed payment was 0 USD instead of 0.25 USD in the weakly dominated forced choice treatment, which means that the lottery weakly first order dominated the fixed payment; the fixed payment is -0.25 USD in the strictly dominated forced choice treatment, which means that the lottery strictly first order dominated the fixed payment.

5 Results from the online experiment

We first provide an overview of the spectator decisions in the online experiment. Figure 4 shows histograms of the amount transferred from the lucky stakeholder to the unlucky stakeholder in the three main treatments (base, nominal choice, forced choice), with and without the work phase.

Focusing first on the treatments with a work phase, we observe that an even larger share of the spectators in the online experiment than in the lab experiment decide to equalize income between the lucky and the unlucky stakeholder in the base treatment (78% versus 63%). But as in the lab experiment, this fraction falls significantly to 61% ($p < 0.001$) in the nominal choice treatment and to 58% ($p < 0.001$) in the forced choice treatment. Correspondingly, we observe that the share of spectators giving nothing to the unlucky stakeholder increases from 5% in the base treatment

to 17% ($p < 0.001$) in the forced choice treatment and to and 11% ($p < 0.001$) in the nominal choice treatment.

When comparing the treatments with and without a work phase, we observe that spectators redistribute less when there is no work phase, but the patterns across treatments are the same. Thus, the work phase primarily seems to strengthen the perception among spectators of stakeholders being entitled to their earnings across treatments.

[Figure 4 about here]

In the left panel of Figure 5, we show the average income inequality implemented in the three main treatments, with and without the work phase. As in the lab experiment, we observe that the introduction of a choice in the earnings phase has a significant effect on inequality acceptance. The introduction of a forced choice causes an increase in implemented inequality by about 128% ($p < 0.001$) and 85% ($p < 0.001$) in the treatments both with and without a work phase; the effect of introducing a nominal choice causes an increase in implemented inequality by 81% ($p < 0.001$) and 56% ($p < 0.001$). In the right panel of Figure 5, we observe the same patterns for the share of spectators giving nothing to one of the stakeholders. In Figure A.2, we compare the three versions of the forced choice treatment, where we observe that the choice effect is large and highly significant for all of them. In the forced choice treatments where the lottery weakly or strongly first order dominates the safe alternative, we observe an increase in implemented inequality of 92% (weakly, $p < 0.001$) and 148% (strongly, $p < 0.001$) compared to the base treatment.

[Figure 5 about here]

In Table 3, we provide the corresponding linear regression analysis, where we have pooled the treatments with and without a work phase but have added an indicator variable taking the value one if the spectator makes a choice for a stakeholder in a treatment with a work phase.¹⁰ We observe that our findings are robust to the

¹⁰In the regression analysis, we focus on the six treatments reported in Figure 5. In Table A.6, we show that the results are robust to including the two other versions of the forced choice treatment. In Table A.7 in Appendix A, we show that the interactions between the choice treatments and the work requirement are not statistically significant.

inclusion of a set of background variables: the introduction of a forced or nominal choice in the earnings phase causes a highly significant increase in inequality acceptance. In contrast to the lab experiment, we observe that the effect is larger in the forced choice treatment than in the nominal choice treatment. We also observe from the estimated coefficient of the indicator variable for the work phase that the presence of a work phase significantly increases the level of inequality implemented by the spectators.

The online experiment provides us with a more heterogeneous sample of spectators than the lab experiment, and we observe from Table 3 that the spectator decisions are strongly associated with the background characteristics. As in the lab experiment, left-wing and female spectators implement significantly less inequality, but we also find significant associations for the other dimensions: older spectators implement less inequality, while spectators with a better score on the cognitive reflection test, with more university education, and with higher income implement significantly more inequality.

[Table 3 about here]

In Table 4, we study heterogeneity in the estimated treatment effects on inequality acceptance, where we pool the two choice treatments and focus on the inequality measure as the dependent variable.¹¹ The main finding is that the choice effect is large and highly significant for all subgroups. We observe some differences across subgroups: in particular, we find a significantly smaller effect of introducing choice on inequality acceptance among the older spectators. However, the online experiment does not replicate the large interaction effect with regard to the political dimension identified in the lab experiment. In the representative sample, there is a significant choice effect both among left-wing and right-wing spectators. In fact, as we show in Table A.14 in Appendix A, only among spectators supporting the most left-wing party in Norway do we not find a statistically significant choice effect. A possible explanation for the significant political interaction effect in the student

¹¹In the online appendix, we show that the patterns are the same in each of the two treatments (Table A.9, Table A.10) and robust to using the share giving nothing to one of the participants as the dependent variable (Table A.11).

sample may therefore be that the student sample is more polarized in their views on redistribution than the general population, with a large share of students being strictly egalitarian. The large and highly significant female effect in the lab sample is also not replicated in the online experiment, we only find small and marginally insignificant differences between males and females in the representative sample.

[Table 4 about here]

6 Mechanisms

We here discuss potential mechanisms that may drive the choice effect on inequality acceptance, in particular whether the choice effect reflects a cognitive bias or intuitive decision-making.

It is well established in the psychological literature that people sometimes suffer from illusion of control (Langer, 1975; Langer and Roth, 1975) and make fundamental attribution errors (Ross, 1977), and it has been shown that these cognitive biases may explain important phenomena in political economy (Bénabou and Tirole, 2006a; Glaeser and Ponzetto, 2017), labor economics (Bertrand and Hallock, 2001), and financial decision-making (Charness and Gneezy, 2010). Illusion of control is the tendency to overestimate one's ability to control events for which there is no causal link between one's choices and the outcomes, while the fundamental attribution error is the tendency to overestimate the role of internal characteristics of an individual, rather than external forces, in causing outcomes.¹²

In contrast to classical studies of illusion of control that focus on the perceptions of the decision-maker, we focus on the perceptions of spectators. We also focus on

¹²The psychological literature has also identified a phenomenon coined outcome bias, namely that people take irrelevant outcome information into account when evaluating the quality of a decision (Baron and Hershey, 1988; Kahneman, 2011). However, it appears unlikely that the observed choice effect is driven by an outcome bias. In the forced choice treatment, the two stakeholders have made the same choice, and hence it is impossible for the spectator to differentiate between the two stakeholders based on the quality of this decision. In the nominal choice treatment, the two stakeholders have chosen different colors, but the fact that the spectators evaluate these two decisions in combination makes it unlikely that they consider them of different quality. There is a rich psychological literature discussing various aspects of outcome bias, illusion of control, and the fundamental attribution error, see Hastie and Daves (2010); Kahneman (2011); Ross and Nisbett (2011).

situations where there is a causal link between the choice of the stakeholder and the final outcome. In the nominal choice treatment, the ex post outcome completely depends on the choice of the stakeholder: if the unlucky stakeholder had chosen the other color, he or she would have had high earnings; in the forced choice treatment, the unlucky stakeholder would not be part of the lottery if he or she had chosen the safe alternative.

Even though our design differs from the classical setting used to study the illusion of control, it may still be the case that the spectators have some kind of illusion of control. In the nominal choice treatment, the spectators would show an ex ante illusion of control on behalf of the stakeholders if they considered the stakeholders to have any control over their potential earnings, since the choice of the stakeholder ex ante does not make one of the outcomes more likely. In the forced choice treatment, the situation is different, since the stakeholders clearly have some control over their expected earnings (by choosing between a safe alternative and a lottery). It appears less likely that the spectators should suffer from any kind of illusion of control in this treatment, since it is hard to see how anyone could believe that the stakeholders can control the outcome of the lottery when making the forced choice.

To study how perceptions of control relate to the spectator decisions, we asked the spectators in the online experiment to assess the extent to which the two stakeholders had control over what they earned in the experiment. Figure A.3 provides histograms of the responses by treatment. We do not see any difference in the responses in the base treatment and the nominal treatment: 82.3% and 81.9% of the spectators respond that the stakeholders had no control over their earnings. In the forced choice treatment, we observe a significantly lower share of spectators, 57.8%, reporting that the stakeholders had no control, consistent with the fact that the stakeholders in this treatment made a choice between a safe alternative and a lottery. In Table A.15, we report treatment regressions where we include the level of perceived stakeholder control. We observe that the estimated treatment effect for the nominal choice treatment is not at all affected by the inclusion of this control variable: the estimated forced choice treatment is slightly reduced but still highly significant. In Table A.16, we show that the estimated treatment effects remain largely the same if we restrict the sample to the spectators who report that the stakeholders had no con-

trol over their earnings. This analysis thus strongly suggests that the choice effect on inequality acceptance, both in the nominal choice and in the forced choice treatment, is not primarily driven by the spectators' perception of stakeholder control - and thus neither by any illusion of control on behalf of the stakeholders.

To study whether the spectators make a fundamental attribution error in the sense that they assume that some stakeholders have an inherent ability to know *ex ante* the color of the ball that will be drawn in the lottery, we also asked the spectators in the nominal choice treatment in the online experiment whether they believed that some stakeholders were better than others at guessing whether the green or the yellow ball would be drawn in the lottery. 6.8% agreed with this view, 10.4% did not know, and 82.8% of the spectators agreed with the view that people are equally good in guessing the color of the ball (in line with the share of spectators responding that the stakeholders in this treatment had no control of their earnings). We do not find any statistically significant difference in the behavior between those who did not make a fundamental attribution error and the rest (inequality: $p = 0.209$, share giving nothing to the worse off: $p = 0.257$). Thus, we do not find evidence of the behavior in the nominal choice treatment being driven by some spectators making a fundamental attribution error.

Another possibility is that the choice effect reflects intuitive decision-making (Frederick, 2005), where spectators use the heuristic that individuals should be held personally responsible for the consequences of their choices, without reflecting on the specific circumstances of the present experiment. We do not find any evidence supporting this hypothesis in our data. As shown in Table 2 and Table 4, the interaction effect for the score on the cognitive reflection test is not statistically significant in the online experiment or in the lab experiment. The point estimates actually go in the opposite direction: the estimated treatment effects are larger for the spectators who are less prone to make errors in the cognitive reflection test. We also observe from the interaction analysis for the representative sample that the choice effect is equally large for people with university education and high income as for the rest of the population, which may be seen as suggestive of the choice effect not being driven by the spectators misunderstanding the experimental situation.

At the end of the lab experiment, the participants were given an open-ended

question about what motivated their spectator decision. In the responses, we do not find any evidence of cognitive biases, but we do find a large share of spectators justifying their decision by referring to the choices made by the stakeholders in the nominal choice treatment (34.6%) and in the forced choice treatment(41.7%).

In sum, we do not find any evidence of the spectator decisions reflecting cognitive biases or intuitive decision-making. Instead, it appears that the spectators assign normative importance to stakeholders having made a choice (choosing the color in the normative choice treatment and choosing the lottery in the forced choice treatment), even in a situation where the spectators realize that the stakeholders have no control over the final outcome. This suggests that the presence of a choice creates a perception of agency, which makes the spectators more willing to hold participants personally responsible for the outcome than in the base treatment where no choice is involved. Such a view violates the outlined minimal conditions for a morally relevant choice, and our results thus provide evidence of the far-reaching role of choice in shaping people’s views on personal responsibility and inequality acceptance.

7 Conclusion

We have reported from a large-scale study of what people consider a morally relevant choice when assigning personal responsibility. We find that third-party spectators implement a significantly more unequal distribution of income when the stakeholders have made a nominal or a forced choice than in a baseline condition where the stakeholders have not made any choices. We provide evidence suggesting that the spectator behavior does not reflect a cognitive bias or intuitive decision-making, but rather reflects that they consider nominal and forced choices to create some level of agency and personal responsibility. The findings are robust across subgroups and to several manipulations of the choice situation.

Our findings have important implications for the political debate on the role of individual choices in different spheres of society, including in health, education, and retirement. They show that a greater reliance on individual choices may not only contribute to more autonomy and freedom, but is also likely to contribute to more inequality acceptance in society, even in cases where individuals only have made

nominal or forced choices. More generally, the findings highlight the critical role of choice in shaping our understanding of personal responsibility and our acceptance of inequality.

Our findings may also shed light on how to understand political disagreements in society. We may, for example, view the present controversy around the situation of single parents and families with nonemployed members in the US as reflecting disagreement about whether they have made morally relevant choices that have caused their difficult situation. Similarly, whether people consider someone who takes on an hazardous job to be making a free or forced choice, is likely to determine whether they hold him or her personally responsible for the consequences of taking this job, and thus whether they find this person deserving of assistance if he or she ends up in a bad situation (Greenfield, 2011; Olsaretti, 2004).

Our findings suggest a number of interesting avenues for future research. We believe that it is of great importance to better understand the moral psychology underlying why people consider normative choices and forced choices to create agency and personal responsibility (Haidt, 2012). We have provided evidence suggesting that the fundamental role of choice is not driven by cognitive biases or intuitive decision-making, but more research is needed on how people assign personal responsibility in distributive situations. In this respect, we also need a better understanding of the extent to which people's views on personal responsibility are shaped by deliberation and public debate. Future research should also study more broadly the notion of an autonomous choice and implications for personal responsibility, including how people assign personal responsibility when individuals have incomplete information or have been nudged in a particular direction in their choices (Sunstein and Thaler, 2008). It is commonly argued in the philosophical literature that an autonomous choice requires that the person is fully informed and has the capacity to reflect and act upon his or her beliefs, desires and intentions (Vallentyne, 2008), but we lack empirical evidence of how people evaluate such situations.

The present study focuses on how spectators assign personal responsibility, but another important line of research is to study how stakeholders handle nominal choices and forced choices. Stakeholder decisions will be shaped by both selfish and moral considerations and the presence of nominal and forced choices may create

moral wiggle room (Dana, Weber, and Kuang, 2007). It would therefore be interesting to study whether the effects observed in the present study are even stronger when lucky stakeholders make distributive decisions and benefit from assigning importance to choices, and whether unlucky stakeholders assign any importance to such choices in their distributive decisions. The idea of individual choice is extremely powerful in modern societies, and thus it is of great importance to understand how it shapes our distributive behavior and our policies both as stakeholders and spectators.

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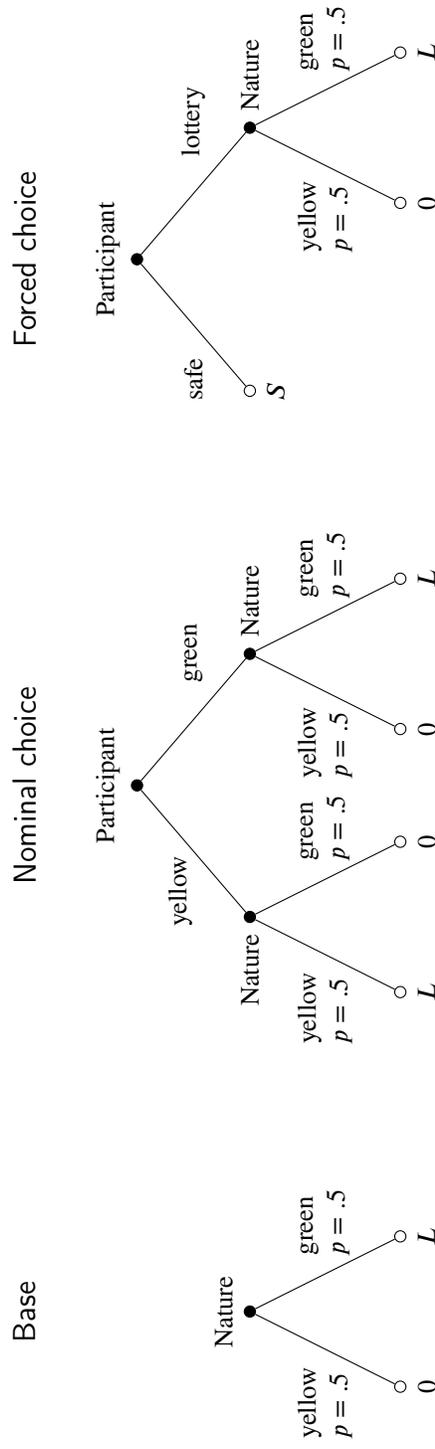
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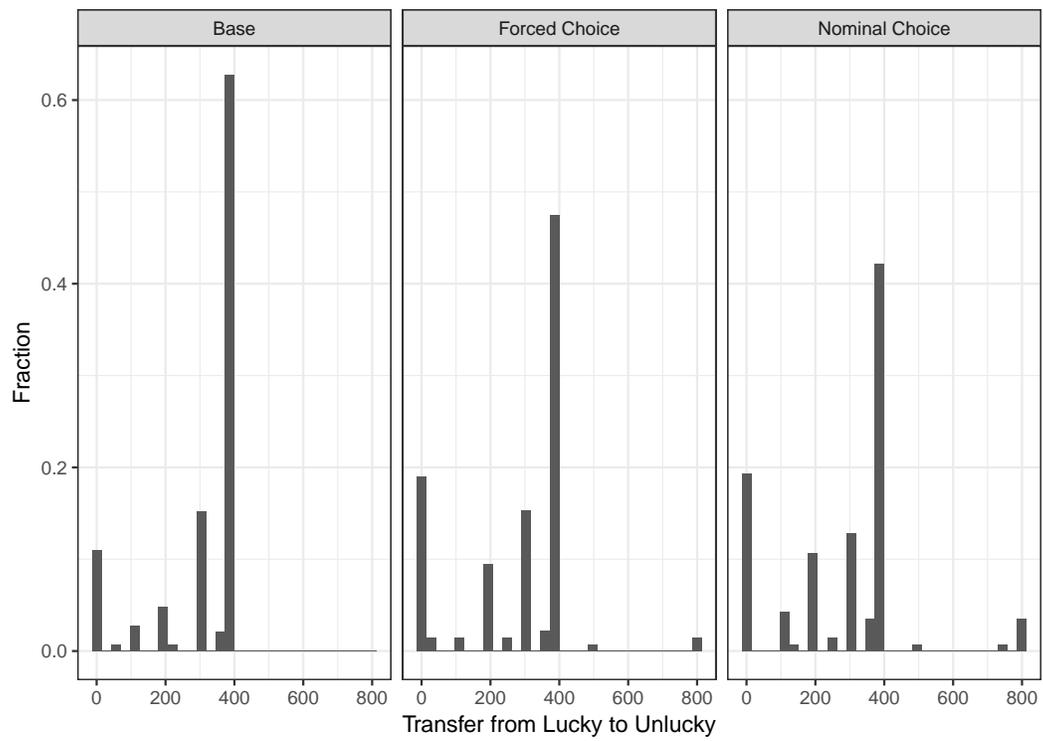
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Figure 1: Game tree, by treatment - earnings phase



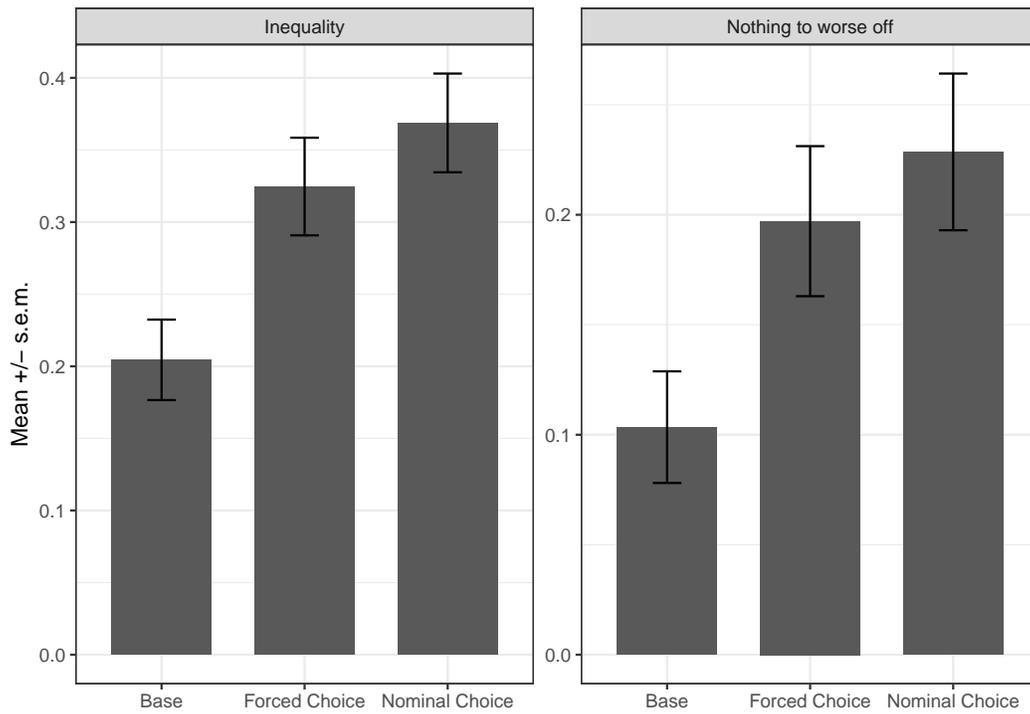
Note: The figure shows the sequential form game representation of how the earnings were determined in each of the three treatments in the experiments. In the lab experiment (section 2), $L = 800$ and $S = 25$ (in NOK). In the online experiment (section 4), $L = 8$ and $S \in \{-0.25, 0, 0.25\}$ (in USD).

Figure 2: Histogram of transfer to the unlucky participant in the lab experiment, by treatment



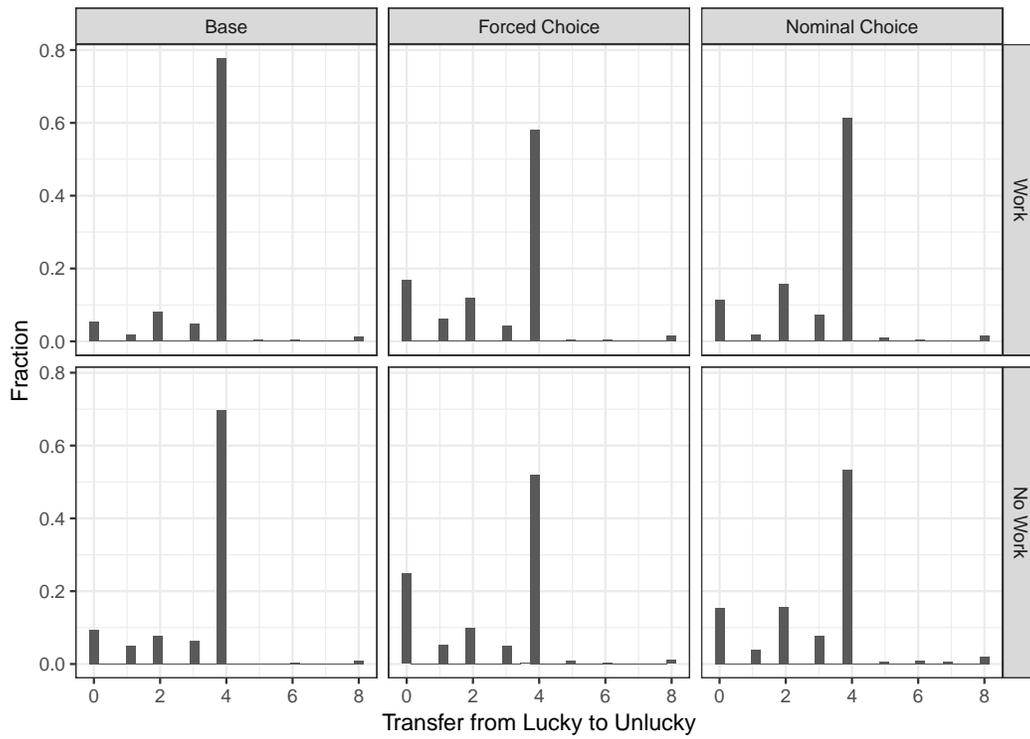
Note: The figure shows the histogram of the amount of money transferred from the lucky to the unlucky participant by the spectator in each treatment.

Figure 3: Inequality implemented by the spectator in the lab experiment



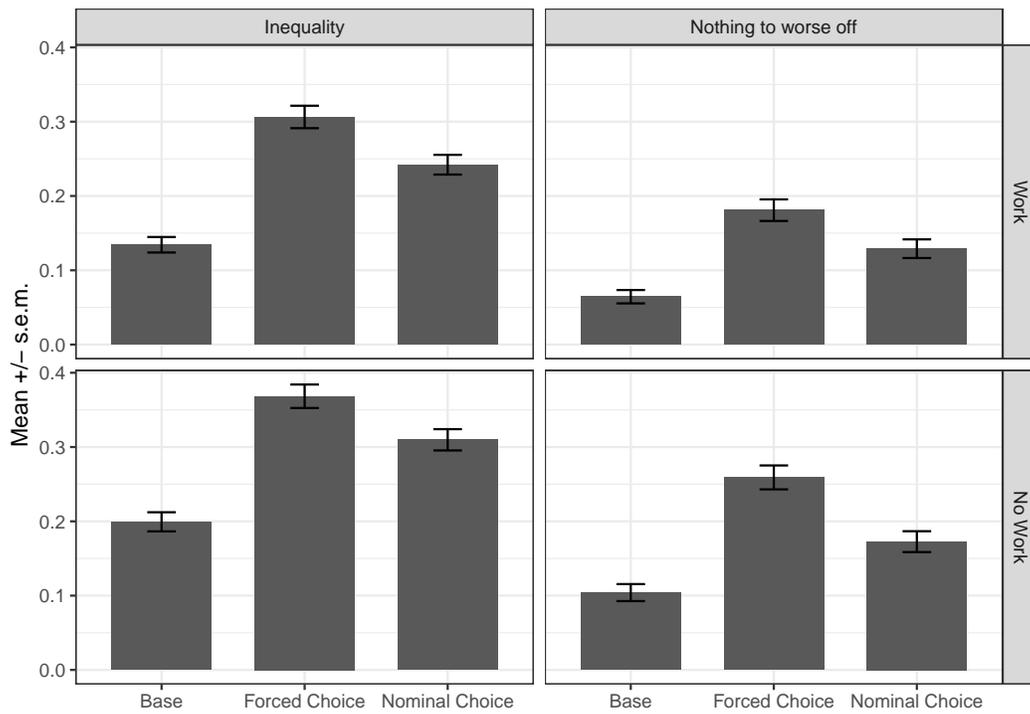
Note: The left panel shows the average inequality implemented by the spectators in each treatment, the right panel shows the share of spectators assigning no income to one of the participants in the pair in each of the treatments. The standard errors of the mean are indicated.

Figure 4: Histograms of transfer to the unlucky participant in the online experiment



Note: The figure shows histograms of the amount of money transferred from the lucky to the unlucky participant by the spectator in each treatment. The top two panels are for treatments with work requirements, the two bottom panels are for treatments without such a requirement.

Figure 5: Inequality implemented by the spectator in the online experiment



Note: The left panels show the average inequality implemented by the spectators in each treatment, the right panel shows the share of spectators assigning no income to one of the participants in the pair in each of the treatments. The top panels show for treatments with work requirements, the bottom panels show for treatments without such a requirement. The standard errors of the mean are indicated.

Table 1: Regression analysis: The role of choice in the lab experiment

	Inequality		Nothing to worse off	
	(1)	(2)	(3)	(4)
Forced Choice	0.120 (0.044)	0.125 (0.044)	0.094 (0.043)	0.101 (0.042)
Nominal Choice	0.164 (0.044)	0.163 (0.044)	0.125 (0.044)	0.128 (0.043)
Left-Wing		-0.115 (0.037)		-0.075 (0.037)
Female		-0.108 (0.040)		-0.159 (0.039)
Age		0.017 (0.037)		0.051 (0.036)
Cognitive Reflection		0.001 (0.040)		0.009 (0.039)
Constant	0.204 (0.028)	0.310 (0.051)	0.103 (0.025)	0.182 (0.047)
Observations	422	422	422	422
R^2	0.033	0.081	0.020	0.086

Note: The table reports linear regressions of the variable “Inequality” (columns (1)–(2), measuring the level of inequality implemented by the spectator) and of the indicator variable “Nothing to the worse off” (columns (3)–(4), taking the value one if the spectator does not assign any income to one of the participants) on a set of explanatory variables. “Forced Choice”: indicator variable for the spectator being in the Forced Choice treatment. “Nominal Choice”: indicator variable for the spectator being in the Nominal Choice treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (22 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). Robust standard errors in parentheses.

Table 2: Regression analysis: Heterogeneous effects in the lab experiment on “Inequality”

	Inequality					
	(1)	(2)	(3)	(4)	(5)	(6)
Choice	0.144 (0.037)	0.258 (0.058)	0.250 (0.053)	0.157 (0.055)	0.105 (0.054)	0.361 (0.098)
Choice × Left-Wing		-0.192 (0.074)				-0.146 (0.075)
Choice × Female			-0.235 (0.073)			-0.216 (0.085)
Choice × Age				-0.021 (0.075)		-0.044 (0.075)
Choice × Cognitive Reflection					0.072 (0.075)	-0.011 (0.084)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Linear combination		0.066 (0.047)	0.015 (0.050)	0.136 (0.050)	0.177 (0.051)	
Observations	422	422	422	422	422	422
R^2	0.080	0.093	0.100	0.080	0.082	0.109

Note: The table reports linear regressions of the variable “Inequality”, which includes interactions between being in one of the choice treatments and the background variables. “Choice”: indicator variable for the spectator being in the Nominal Choice or the Forced Choice treatment. “Left-wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (22 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). The “Linear combination” row shows the treatment effect of choice on the group that has the value one on the corresponding background variable, while “Choice” shows the treatment effect for the other group. Robust standard errors in parentheses. The estimates for the other controls are shown in Table A.2.

Table 3: Regression analysis: The role of choice in the online experiment

	Inequality			Nothing to worse off		
	(1)	(2)	(3)	(4)	(5)	(6)
Forced Choice	0.170 (0.014)	0.166 (0.013)	0.166 (0.013)	0.136 (0.013)	0.133 (0.013)	0.133 (0.013)
Nominal Choice	0.109 (0.013)	0.108 (0.013)	0.108 (0.013)	0.066 (0.012)	0.066 (0.012)	0.066 (0.012)
Work requirement	-0.065 (0.011)	-0.067 (0.011)	-0.067 (0.011)	-0.054 (0.011)	-0.055 (0.011)	-0.055 (0.011)
Left-Wing		-0.065 (0.012)	-0.062 (0.012)		-0.049 (0.012)	-0.046 (0.012)
Female		-0.097 (0.011)	-0.088 (0.011)		-0.056 (0.011)	-0.048 (0.011)
Age		-0.075 (0.011)	-0.076 (0.011)		-0.059 (0.011)	-0.060 (0.011)
Cognitive Reflection		0.065 (0.011)	0.057 (0.011)		0.058 (0.011)	0.049 (0.011)
University education			0.019 (0.011)			0.027 (0.011)
High income			0.049 (0.013)			0.048 (0.012)
Constant	0.199 (0.010)	0.298 (0.017)	0.266 (0.018)	0.111 (0.010)	0.174 (0.016)	0.140 (0.017)
Observations	4,336	4,336	4,336	4,336	4,336	4,336
R^2	0.043	0.091	0.096	0.030	0.058	0.065

Note: The table reports linear regressions of the variable “Inequality” (columns (1)–(3), measuring the inequality implemented by the spectator) and of the indicator variable “Nothing to the worse off” (columns (4)–(6), taking the value one if the spectator does not assign any income to one of the participants) on a set of explanatory variables. “Forced Choice”: indicator variable for the spectator being in the Forced Choice treatment. “Nominal Choice”: indicator variable for the spectator being in the Nominal Choice treatment. “Work requirement”: indicator variable for the participants being in a work requirement treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (49 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). “University education”: indicator variable for the spectator having university education. “High income”: indicator variable for the spectator having above median income (above 500 000 NOK). Robust standard errors in parentheses.

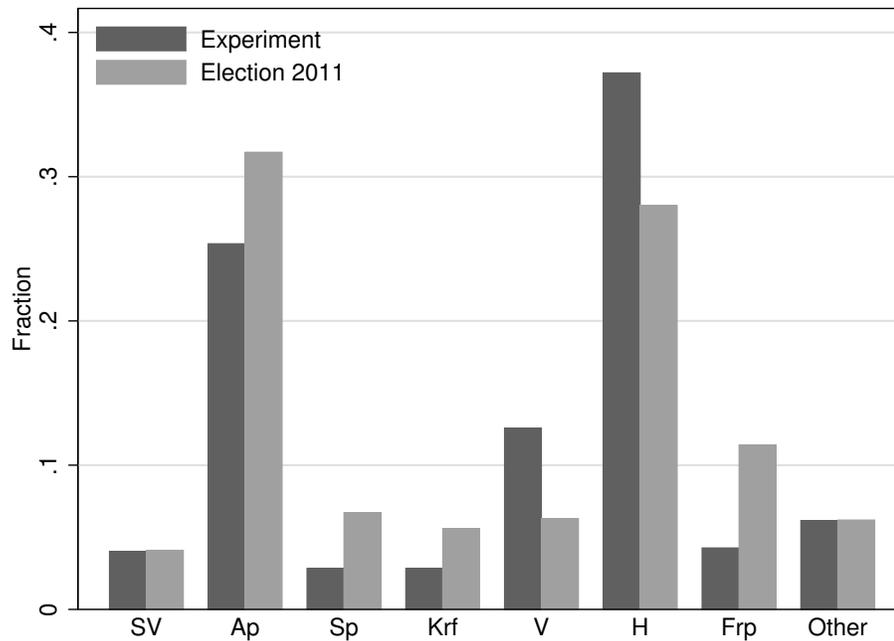
Table 4: Regression analysis: Heterogeneous effects in the online experiment on “Inequality”

	Inequality							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Choice	0.137 (0.011)	0.154 (0.021)	0.160 (0.016)	0.168 (0.015)	0.114 (0.014)	0.133 (0.016)	0.126 (0.013)	0.176 (0.031)
Choice × Left-Wing		-0.024 (0.024)						-0.018 (0.025)
Choice × Female			-0.048 (0.022)					-0.036 (0.023)
Choice × Age				-0.069 (0.022)				-0.065 (0.022)
Choice × Cognitive Reflection					0.049 (0.022)			0.032 (0.022)
Choice × University education						0.006 (0.022)		-0.001 (0.022)
Choice × High income							0.031 (0.024)	0.017 (0.025)
Work requirement	-0.067 (0.011)	-0.068 (0.011)	-0.068 (0.011)	-0.068 (0.011)	-0.068 (0.011)	-0.067 (0.011)	-0.067 (0.011)	-0.068 (0.011)
Other controls	Yes							
Linear combination		0.129 (0.013)	0.112 (0.014)	0.099 (0.015)	0.163 (0.017)	0.139 (0.015)	0.157 (0.020)	
Observations	4,336	4,336	4,336	4,336	4,336	4,336	4,336	4,336
R^2	0.092	0.093	0.093	0.094	0.093	0.092	0.093	0.096

Note: The table reports linear regressions of the variable “Inequality” on “Choice”: indicator variable for the spectator being in the Nominal Choice or Forced Choice treatment. “Left-wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (49 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). “University education”: indicator variable for the spectator having university education. “High income”: indicator variable for the spectator having above median income (above 500 000 NOK). “Work requirement”: indicator variable for the participants being in a work requirement treatment. Robust standard errors in parentheses. The full regression table is shown in Table A.2

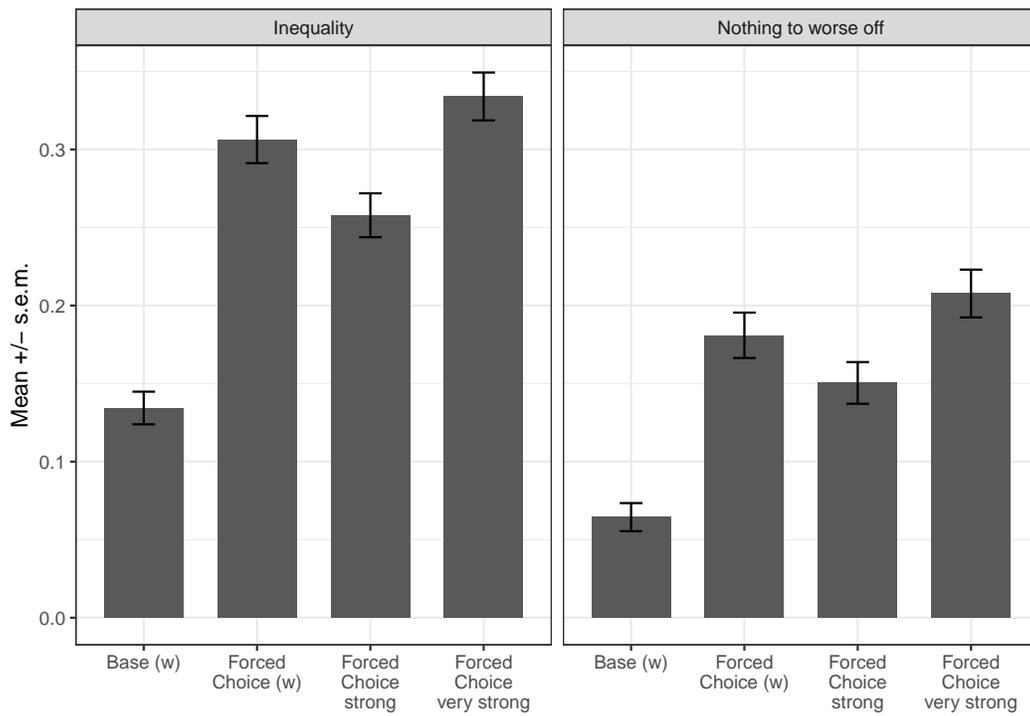
A Online appendix: Supplementary Figures and Tables

Figure A.1: Lab experiment - political affiliation



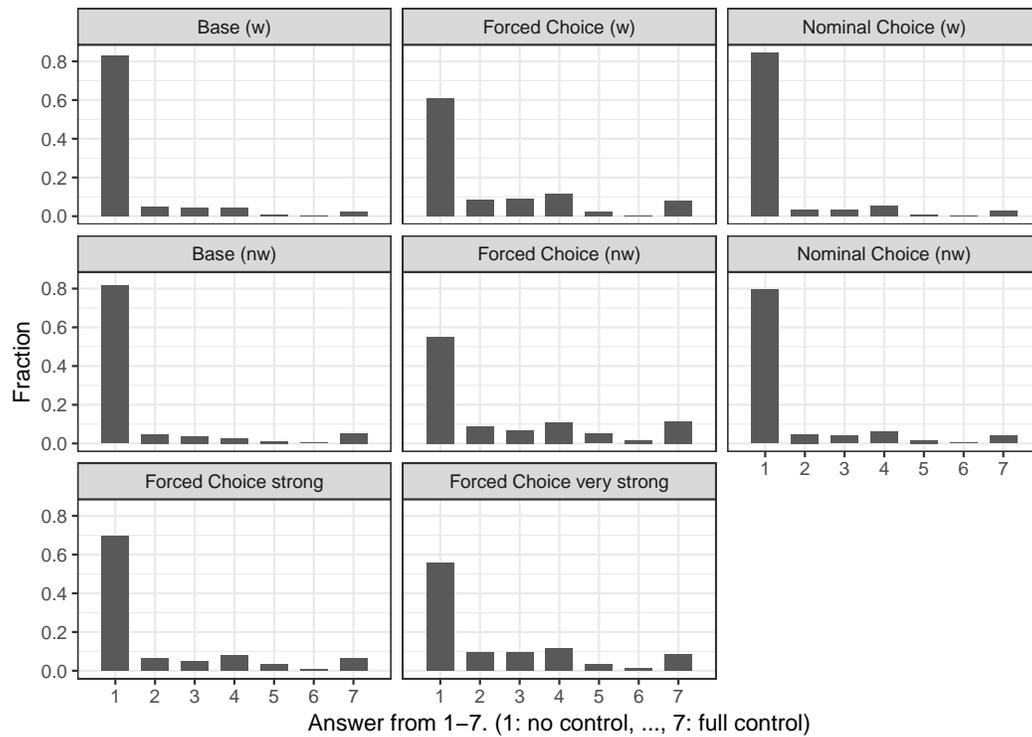
Note: The figure shows the distribution of political affiliations in the lab experiment and in the general population in the election in Norway prior to this study. SV: Sosialistisk Venstreparti; AP: Arbeiderpartiet; SP: Senterpartiet; Krf: Kristelig Folkeparti; V: Venstre; H: Høyre; Frp: Fremskrittspartiet. “Høyre” and “Fremskrittspartiet” are the two right-wing parties in Norway.

Figure A.2: Inequality implemented by the spectator in the online experiment, different versions of the forced treatment



Note: The left panel shows the average inequality implemented by the spectators in the base treatment and in each of the three forced choice treatments, the right panel shows the share of spectators assigning no income to one of the participants in the pair in each of these treatments. The standard errors of the mean are indicated.

Figure A.3: Control over earnings?



Note: The figure shows the histogram of how spectators responded to the question of whether the participants had control over their earnings, by treatment. The question asked was: “Before you made your choice, participant A earned 8 USD, while participant B earned 0 USD. To what extent did the two participants have control over their own earnings before you made your choice?” The alternatives given were on a 1–7 scale, with 1 indicating “no control” and 7 indicating “full control.”

Table A.1: Descriptive statistics: Background characteristics of subjects

Panel A: Lab experiment					
	Age	Female	CRS	Left-wing	
Treatment:	Mean (se)	Mean (se)	Mean (se)	Mean (se)	N
Base	22.8 (0.27)	0.44 (0.04)	1.58 (0.09)	0.60 (0.04)	145
Forced Choice	22.5 (0.25)	0.47 (0.04)	1.84 (0.09)	0.60 (0.04)	137
Nominal Choice	22.7 (0.26)	0.47 (0.04)	1.55 (0.10)	0.56 (0.04)	140
All	22.7 (0.15)	0.46 (0.02)	1.65 (0.05)	0.59 (0.02)	422
Panel B: Online experiment					
	Age	Female	CRS	Left-wing	
Treatment:	Mean (se)	Mean (se)	Mean (se)	Mean (se)	N
Base	49.7 (0.62)	0.49 (0.02)	1.33 (0.04)	0.69 (0.02)	745
Base No work	48.2 (0.63)	0.51 (0.02)	1.38 (0.04)	0.69 (0.02)	711
Forced Choice	48.9 (0.64)	0.46 (0.02)	1.43 (0.04)	0.68 (0.02)	702
Forced Choice Strong	47.7 (0.62)	0.46 (0.02)	1.35 (0.04)	0.71 (0.02)	718
Forced Choice Very Strong	47.5 (0.64)	0.47 (0.02)	1.35 (0.04)	0.69 (0.02)	703
Forced Choice No Work	48.1 (0.62)	0.46 (0.02)	1.40 (0.04)	0.70 (0.02)	741
Nominal Choice	48.6 (0.63)	0.44 (0.02)	1.40 (0.04)	0.67 (0.02)	713
Nominal Choice No work	49.2 (0.63)	0.51 (0.02)	1.35 (0.04)	0.70 (0.02)	724
All	48.5 (0.22)	0.48 (0.01)	1.37 (0.02)	0.69 (0.01)	5757

Note: The table reports background characteristics of the subject pools participating in the experiments, by treatment. Panel A provides background characteristics for the subjects in the lab experiment, panel B for the online experiment. “Age” is a continuous variable measuring participants’ age in years; “Female” is the proportion of females; “Left-wing” is the share of subjects that did not vote for a right-wing party (e.g. “Høyre” or “Fremskrittspartiet”).

Table A.2: Regression analysis: Heterogeneous effects in the lab experiment (complete regression table)

	Inequality					
	(1)	(2)	(3)	(4)	(5)	(6)
Choice	0.144 (0.037)	0.258 (0.058)	0.250 (0.053)	0.157 (0.055)	0.105 (0.054)	0.361 (0.098)
Choice × Left-Wing		-0.192 (0.074)				-0.146 (0.075)
Choice × Female			-0.235 (0.073)			-0.216 (0.085)
Choice × Age				-0.021 (0.075)		-0.044 (0.075)
Choice × Cognitive Reflection					0.072 (0.075)	-0.011 (0.084)
Left-Wing	-0.116 (0.037)	0.012 (0.058)	-0.124 (0.037)	-0.116 (0.038)	-0.115 (0.038)	-0.027 (0.058)
Female	-0.109 (0.040)	-0.116 (0.040)	0.052 (0.061)	-0.108 (0.040)	-0.113 (0.040)	0.036 (0.070)
Age	0.018 (0.037)	0.018 (0.036)	0.029 (0.037)	0.032 (0.059)	0.020 (0.037)	0.057 (0.060)
Cognitive Reflection	-0.003 (0.040)	-0.005 (0.040)	0.010 (0.039)	-0.003 (0.040)	-0.051 (0.062)	0.014 (0.068)
Constant	0.312 (0.051)	0.240 (0.056)	0.232 (0.059)	0.303 (0.059)	0.338 (0.058)	0.162 (0.078)
Linear combination		0.066 (0.047)	0.015 (0.050)	0.136 (0.050)	0.177 (0.051)	
Observations	422	422	422	422	422	422
R^2	0.080	0.093	0.100	0.080	0.082	0.109

Note: The table reports the full set of estimates for Table 2. These are linear regressions of the variable “Inequality”, which includes interactions between being in one of the choice treatments and the background variables. “Choice”: indicator variable for the spectator being in the Nominal Choice or the Forced Choice treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (22 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). The “Linear combination” row shows the treatment effect of choice on the group that has the value one on the corresponding background variable, while “Choice” shows the treatment effect for the other group. Robust standard errors in parentheses.

Table A.3: Regression analysis: Heterogeneous effects in the lab experiment on “Inequality” (Forced Choice)

	Inequality					
	(1)	(2)	(3)	(4)	(5)	(6)
Choice (forced)	0.119 (0.044)	0.245 (0.070)	0.214 (0.064)	0.170 (0.064)	0.063 (0.065)	0.347 (0.113)
Choice × Left-Wing		−0.210 (0.088)				−0.187 (0.088)
Choice × Female			−0.210 (0.089)			−0.183 (0.097)
Choice × Age				−0.086 (0.088)		−0.103 (0.088)
Choice × Cognitive Reflection					0.097 (0.088)	0.048 (0.097)
Left-Wing	−0.103 (0.045)	0.001 (0.058)	−0.117 (0.045)	−0.105 (0.045)	−0.105 (0.045)	−0.027 (0.058)
Female	−0.052 (0.047)	−0.064 (0.047)	0.060 (0.064)	−0.048 (0.048)	−0.057 (0.048)	0.036 (0.070)
Age	−0.001 (0.044)	−0.007 (0.043)	0.009 (0.044)	0.042 (0.059)	0.002 (0.044)	0.057 (0.060)
Cognitive Reflection	0.023 (0.048)	0.026 (0.048)	0.040 (0.048)	0.021 (0.048)	−0.024 (0.064)	0.014 (0.069)
Constant	0.277 (0.059)	0.223 (0.060)	0.221 (0.065)	0.251 (0.064)	0.304 (0.065)	0.162 (0.078)
Linear combination		0.035 (0.055)	0.004 (0.059)	0.085 (0.060)	0.160 (0.059)	
Observations	282	282	282	282	282	282
R^2	0.054	0.073	0.073	0.057	0.058	0.093

Note: The table reports the full set of estimates for Table 2, restricted to the spectators being in the Base treatment or the Forced Choice treatment. These are linear regressions of the variable “Inequality”, which includes interactions between being in one of the choice treatments and the background variables. “Choice”: indicator variable for the spectator being in the Nominal Choice or the Forced Choice treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (22 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). The “Linear combination” row shows the treatment effect of choice on the group that has the value one on the corresponding background variable, while “Choice” shows the treatment effect for the other group. Robust standard errors in parentheses.

Table A.4: Regression analysis: Heterogeneous effects in the lab experiment on “Inequality” (Nominal Choice)

	Inequality					
	(1)	(2)	(3)	(4)	(5)	(6)
Choice (nominal)	0.164 (0.044)	0.263 (0.068)	0.285 (0.065)	0.148 (0.066)	0.139 (0.062)	0.373 (0.116)
Choice × Left-Wing		-0.171 (0.089)				-0.118 (0.092)
Choice × Female			-0.264 (0.086)			-0.257 (0.101)
Choice × Age				0.026 (0.089)		0.013 (0.090)
Choice × Cognitive Reflection				0.050	-0.058 (0.089)	(0.099)
Left-Wing	-0.079 (0.046)	0.006 (0.058)	-0.083 (0.045)	-0.079 (0.046)	-0.077 (0.046)	-0.027 (0.058)
Female	-0.098 (0.051)	-0.101 (0.051)	0.039 (0.064)	-0.099 (0.051)	-0.100 (0.052)	0.036 (0.070)
Age	0.048 (0.045)	0.052 (0.045)	0.062 (0.045)	0.035 (0.059)	0.048 (0.045)	0.057 (0.060)
Cognitive Reflection	-0.022 (0.049)	-0.029 (0.050)	-0.010 (0.049)	-0.022 (0.049)	-0.047 (0.064)	0.014 (0.068)
Constant	0.277 (0.060)	0.229 (0.063)	0.203 (0.066)	0.285 (0.066)	0.289 (0.063)	0.162 (0.078)
Linear combination		0.093 (0.057)	0.021 (0.055)	0.174 (0.059)	0.188 (0.063)	
Observations	285	285	285	285	285	285
R^2	0.081	0.094	0.111	0.082	0.082	0.117

Note: The table reports the full set of estimates for Table 2, restricted to the spectators being in the Base treatment or the Nominal Choice treatment. These are linear regressions of the variable “Inequality”, which includes interactions between being in one of the choice treatments and the background variables. “Choice”: indicator variable for the spectator being in the Nominal Choice or the Forced Choice treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (22 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). The “Linear combination” row shows the treatment effect of choice on the group that has the value one on the corresponding background variable, while “Choice” shows the treatment effect for the other group. Robust standard errors in parentheses.

Table A.5: Regression analysis: Heterogeneous effects in the lab experiment on “Nothing to worse off”

	Nothing to the worse off					
	(1)	(2)	(3)	(4)	(5)	(6)
Choice	0.115 (0.035)	0.191 (0.058)	0.217 (0.053)	0.109 (0.047)	0.068 (0.048)	0.266 (0.091)
Choice × Left-Wing		-0.129 (0.072)				-0.085 (0.070)
Choice × Female			-0.227 (0.069)			-0.209 (0.077)
Choice × Age				0.010 (0.069)		-0.016 (0.068)
Choice × Cognitive Reflection					0.087 (0.070)	0.006 (0.078)
Left-Wing	-0.076 (0.037)	0.010 (0.053)	-0.084 (0.037)	-0.076 (0.037)	-0.075 (0.037)	-0.026 (0.050)
Female	-0.160 (0.039)	-0.164 (0.039)	-0.005 (0.054)	-0.160 (0.039)	-0.164 (0.039)	-0.019 (0.059)
Age	0.051 (0.036)	0.051 (0.036)	0.062 (0.036)	0.045 (0.050)	0.054 (0.036)	0.072 (0.049)
Cognitive Reflection	0.006 (0.039)	0.005 (0.039)	0.018 (0.039)	0.006 (0.039)	-0.052 (0.056)	0.012 (0.061)
Constant	0.184 (0.047)	0.135 (0.053)	0.107 (0.053)	0.188 (0.051)	0.215 (0.051)	0.076 (0.067)
Linear combination		0.063 (0.043)	-0.010 (0.043)	0.119 (0.049)	0.155 (0.051)	
Observations	422	422	422	422	422	422
R^2	0.085	0.092	0.105	0.085	0.088	0.107

Note: The table reports linear regressions of the indicator variable “Nothing to worse off”, measuring the spectator implements maximal inequality, on a set of explanatory variables. “Choice”: indicator variable for the spectator being in the Nominal Choice or the Forced Choice treatment. “Left-wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (22 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). The “Linear combination” row shows the treatment effect of choice on the group that has the value one on the corresponding background variable, while “Choice” shows the treatment effect for the other group. Robust standard errors in parentheses.

Table A.6: Regression analysis: The role of choice in the online experiment, full sample

	Inequality			Nothing to worse off		
	(1)	(2)	(3)	(4)	(5)	(6)
Forced Choice	0.166 (0.011)	0.162 (0.011)	0.162 (0.011)	0.130 (0.011)	0.127 (0.011)	0.127 (0.011)
Nominal Choice	0.109 (0.013)	0.108 (0.013)	0.108 (0.013)	0.066 (0.012)	0.066 (0.012)	0.066 (0.012)
Work requirements	-0.068 (0.011)	-0.069 (0.010)	-0.069 (0.010)	-0.058 (0.010)	-0.059 (0.010)	-0.059 (0.010)
Left-Wing		-0.067 (0.011)	-0.064 (0.011)		-0.050 (0.011)	-0.047 (0.011)
Female		-0.094 (0.010)	-0.084 (0.010)		-0.054 (0.010)	-0.044 (0.010)
Age		-0.077 (0.010)	-0.078 (0.010)		-0.056 (0.009)	-0.057 (0.009)
Cognitive Reflection		0.066 (0.010)	0.059 (0.010)		0.059 (0.010)	0.051 (0.010)
University Education			0.016 (0.010)			0.021 (0.010)
High income			0.050 (0.011)			0.049 (0.011)
Constant	0.201 (0.010)	0.299 (0.015)	0.269 (0.016)	0.113 (0.009)	0.174 (0.015)	0.141 (0.015)
Observations	5,757	5,757	5,757	5,757	5,757	5,757
R^2	0.033	0.080	0.084	0.023	0.049	0.054

Note: The table reports linear regressions of the variable “Inequality” (columns (1)–(3), measuring the inequality implemented by the spectator) and of the indicator variable “Nothing to the worse off” (columns (4)–(6), taking the value one if the spectator does not assign any income to one of the participants) on a set of explanatory variables. “Forced Choice”: indicator variable for the spectator being in the Forced Choice treatment. “Nominal Choice”: indicator variable for the spectator being in the Nominal Choice treatment. “Work requirement”: indicator variable for the participants being in a work requirement treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (49 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). “University education”: indicator variable for the spectator having university education. “High income”: indicator variable for the spectator having above median income (above 500 000 NOK). Robust standard errors in parentheses.

Table A.7: Regression analysis: The role of choice in the online experiment, with work requirement interactions

	Inequality			Nothing to the worse off		
	(1)	(2)	(3)	(4)	(5)	(6)
Forced Choice	0.169 (0.020)	0.164 (0.020)	0.166 (0.013)	0.155 (0.020)	0.152 (0.019)	0.133 (0.013)
Nominal Choice	0.110 (0.019)	0.114 (0.019)	0.108 (0.013)	0.069 (0.018)	0.071 (0.018)	0.066 (0.012)
Work requirement	-0.065 (0.017)	-0.065 (0.016)	-0.067 (0.011)	-0.040 (0.015)	-0.039 (0.014)	-0.055 (0.011)
Forced Choice × Work req.	0.003 (0.027)	0.004 (0.027)		-0.039 (0.026)	-0.038 (0.026)	
Nominal Choice × Work req.	-0.003 (0.026)	-0.011 (0.025)		-0.004 (0.024)	-0.009 (0.024)	
Left-Wing		-0.062 (0.012)	-0.062 (0.012)		-0.046 (0.012)	-0.046 (0.012)
Female		-0.088 (0.011)	-0.088 (0.011)		-0.048 (0.011)	-0.048 (0.011)
Age		-0.076 (0.011)	-0.076 (0.011)		-0.060 (0.011)	-0.060 (0.011)
Cognitive Reflection		0.057 (0.011)	0.057 (0.011)		0.049 (0.011)	0.049 (0.011)
University education		0.019 (0.011)	0.019 (0.011)		0.026 (0.011)	0.027 (0.011)
High income		0.049 (0.013)	0.049 (0.013)		0.048 (0.012)	0.048 (0.012)
Constant	0.199 (0.013)	0.265 (0.019)	0.266 (0.018)	0.104 (0.011)	0.131 (0.018)	0.140 (0.017)
Joint p-value on work-interactions:	0.992	0.985		0.252	0.248	
Observations	4,336	4,336	4,336	4,336	4,336	4,336
R ²	0.043	0.096	0.096	0.031	0.065	0.065

Note: The table reports linear regressions of the variable “Inequality” (columns (1)–(3), measuring the inequality implemented by the spectator) and of the indicator variable “Nothing to the worse off” (columns (4)–(6), taking the value one if the spectator does not assign any income to one of the participants) on a set of explanatory variables and interactions. “Forced Choice”: indicator variable for the spectator being in the Forced Choice treatment. “Nominal Choice”: indicator variable for the spectator being in the Nominal Choice treatment. “Work requirement”: indicator variable for the participants being in a work requirement treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (49 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). “University education”: indicator variable for the spectator having university education. “High income”: indicator variable for the spectator having above median income (above 500 000 NOK). Robust standard errors in parentheses.

Table A.8: Regression analysis: Heterogeneous effects in the online experiment on “Inequality” (complete regression table)

	Inequality							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Choice	0.137 (0.011)	0.154 (0.021)	0.160 (0.016)	0.168 (0.015)	0.114 (0.014)	0.133 (0.016)	0.126 (0.013)	0.176 (0.031)
Choice × Left-Wing		-0.024 (0.024)						-0.018 (0.025)
Choice × Female			-0.048 (0.022)					-0.036 (0.023)
Choice × Age				-0.069 (0.022)				-0.065 (0.022)
Choice × Cognitive Reflection					0.049 (0.022)			0.032 (0.022)
Choice × University						0.006 (0.022)		-0.001 (0.022)
Choice × High income							0.031 (0.024)	0.017 (0.025)
Work requirement	-0.067 (0.011)	-0.068 (0.011)	-0.068 (0.011)	-0.068 (0.011)	-0.068 (0.011)	-0.067 (0.011)	-0.067 (0.011)	-0.068 (0.011)
Left-Wing	-0.062 (0.012)	-0.046 (0.019)	-0.062 (0.012)	-0.062 (0.012)	-0.062 (0.012)	-0.062 (0.012)	-0.062 (0.012)	-0.051 (0.019)
Female	-0.088 (0.011)	-0.089 (0.011)	-0.057 (0.017)	-0.089 (0.011)	-0.088 (0.011)	-0.088 (0.011)	-0.088 (0.011)	-0.065 (0.017)
Age	-0.077 (0.011)	-0.077 (0.011)	-0.077 (0.011)	-0.031 (0.016)	-0.076 (0.011)	-0.077 (0.011)	-0.076 (0.011)	-0.033 (0.016)
Cognitive Reflection	0.058 (0.011)	0.058 (0.011)	0.058 (0.011)	0.057 (0.011)	0.025 (0.017)	0.058 (0.011)	0.058 (0.011)	0.036 (0.017)
University education	0.020 (0.011)	0.020 (0.011)	0.020 (0.011)	0.020 (0.011)	0.020 (0.011)	0.016 (0.016)	0.020 (0.011)	0.021 (0.017)
High income	0.048 (0.013)	0.048 (0.013)	0.048 (0.013)	0.047 (0.013)	0.048 (0.013)	0.048 (0.013)	0.027 (0.019)	0.035 (0.019)
Constant	0.267 (0.018)	0.256 (0.021)	0.252 (0.019)	0.248 (0.019)	0.282 (0.018)	0.269 (0.019)	0.274 (0.018)	0.242 (0.024)
Linear combination		0.129 (0.013)	0.112 (0.014)	0.099 (0.015)	0.163 (0.017)	0.139 (0.015)	0.157 (0.020)	
Observations	4,336	4,336	4,336	4,336	4,336	4,336	4,336	4,336
R^2	0.092	0.093	0.093	0.094	0.093	0.092	0.093	0.096

Note: The table reports linear regressions of the variable “Inequality” on “Choice”: indicator variable for the spectator being in the Nominal Choice or Forced Choice treatment. “Left-wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (49 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). “University education”: indicator variable for the spectator having university education. “High income”: indicator variable for the spectator having above median income (above 500 000 NOK). “Work requirement”: indicator variable for the participants being in a work requirement treatment. Robust standard errors in parentheses.

Table A.9: Regression analysis: Heterogeneous effects in the online experiment on “Inequality” (Forced Choice only)

	Inequality							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Choice (forced)	0.166 (0.013)	0.178 (0.025)	0.202 (0.020)	0.202 (0.019)	0.118 (0.017)	0.143 (0.019)	0.147 (0.016)	0.172 (0.038)
Choice × Left-Wing		-0.017 (0.029)						-0.009 (0.030)
Choice × Female			-0.075 (0.026)					-0.055 (0.028)
Choice × Age				-0.080 (0.026)				-0.069 (0.027)
Choice × Cognitive Reflection					0.103 (0.027)			0.075 (0.028)
Choice × University						0.040 (0.027)		0.027 (0.028)
Choice × High income							0.052 (0.029)	0.020 (0.031)
Work-requirement	-0.063 (0.013)	-0.063 (0.013)	-0.062 (0.013)	-0.062 (0.013)	-0.063 (0.013)	-0.062 (0.013)	-0.063 (0.013)	-0.062 (0.013)
Left-Wing	-0.054 (0.015)	-0.046 (0.019)	-0.056 (0.015)	-0.055 (0.015)	-0.055 (0.015)	-0.054 (0.015)	-0.055 (0.015)	-0.051 (0.019)
Female	-0.092 (0.014)	-0.092 (0.014)	-0.055 (0.017)	-0.093 (0.014)	-0.092 (0.014)	-0.092 (0.014)	-0.092 (0.014)	-0.065 (0.017)
Age	-0.069 (0.013)	-0.069 (0.013)	-0.069 (0.013)	-0.029 (0.016)	-0.067 (0.013)	-0.069 (0.013)	-0.068 (0.013)	-0.034 (0.016)
Cognitive Reflection	0.075 (0.014)	0.075 (0.014)	0.075 (0.014)	0.074 (0.014)	0.024 (0.017)	0.075 (0.014)	0.075 (0.014)	0.036 (0.017)
University education	0.034 (0.014)	0.033 (0.014)	0.033 (0.014)	0.035 (0.014)	0.034 (0.014)	0.013 (0.017)	0.033 (0.014)	0.021 (0.017)
High income	0.047 (0.016)	0.047 (0.016)	0.047 (0.016)	0.046 (0.016)	0.047 (0.015)	0.047 (0.016)	0.021 (0.019)	0.035 (0.019)
Constant	0.242 (0.021)	0.236 (0.023)	0.225 (0.022)	0.225 (0.022)	0.265 (0.021)	0.254 (0.022)	0.251 (0.021)	0.240 (0.024)
Linear combination		0.161 (0.016)	0.127 (0.018)	0.122 (0.019)	0.221 (0.021)	0.183 (0.018)	0.200 (0.024)	
Observations	2,899	2,899	2,899	2,899	2,899	2,899	2,899	2,899
R^2	0.118	0.118	0.120	0.121	0.122	0.118	0.119	0.126

Note: The table reports linear regressions of the variable “Inequality” on “Choice (forced)”: indicator variable for the spectator being in the Forced Choice treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (49 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). “University education”: indicator variable for the spectator having university education. “High income”: indicator variable for the spectator having above median income (above 500 000 NOK). “Work requirement”: indicator variable for the participants being in a work requirement treatment. Robust standard errors in parentheses.

Table A.10: Regression analysis: Heterogeneous effects in the online experiment on “Inequality” (Nominal Choice only)

	Inequality							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Choice (nominal)	0.108 (0.013)	0.129 (0.024)	0.116 (0.019)	0.132 (0.018)	0.111 (0.016)	0.124 (0.018)	0.103 (0.015)	0.176 (0.036)
Choice × Left-Wing		-0.031 (0.028)						-0.028 (0.029)
Choice × Female			-0.017 (0.025)					-0.013 (0.026)
Choice × Age				-0.053 (0.025)				-0.056 (0.025)
Choice × Cognitive reflection					-0.007 (0.025)			-0.013 (0.026)
Choice × University						-0.028 (0.025)		-0.029 (0.026)
Choice × High income							0.012 (0.027)	0.016 (0.029)
Work-requirement	-0.070 (0.013)	-0.071 (0.013)						
Left-Wing	-0.064 (0.014)	-0.048 (0.019)	-0.064 (0.014)	-0.065 (0.014)	-0.064 (0.014)	-0.064 (0.014)	-0.064 (0.014)	-0.051 (0.019)
Female	-0.071 (0.013)	-0.071 (0.013)	-0.063 (0.017)	-0.072 (0.013)	-0.071 (0.013)	-0.071 (0.013)	-0.071 (0.013)	-0.065 (0.017)
Age	-0.061 (0.013)	-0.061 (0.013)	-0.061 (0.013)	-0.034 (0.016)	-0.061 (0.013)	-0.061 (0.013)	-0.061 (0.013)	-0.033 (0.016)
Cognitive reflection	0.029 (0.013)	0.029 (0.013)	0.029 (0.013)	0.030 (0.013)	0.033 (0.017)	0.030 (0.013)	0.030 (0.013)	0.036 (0.017)
University education	0.006 (0.013)	0.006 (0.013)	0.006 (0.013)	0.006 (0.013)	0.006 (0.013)	0.020 (0.017)	0.006 (0.013)	0.021 (0.017)
High income	0.044 (0.015)	0.045 (0.015)	0.044 (0.015)	0.044 (0.015)	0.044 (0.015)	0.044 (0.015)	0.039 (0.019)	0.035 (0.019)
Constant	0.276 (0.020)	0.266 (0.022)	0.272 (0.021)	0.266 (0.020)	0.275 (0.020)	0.268 (0.021)	0.278 (0.020)	0.244 (0.024)
Linear combination		0.098 (0.015)	0.099 (0.017)	0.079 (0.018)	0.104 (0.020)	0.095 (0.017)	0.115 (0.023)	
Observations	2,893	2,893	2,893	2,893	2,893	2,893	2,893	2,893
R ²	0.073	0.074	0.073	0.075	0.073	0.074	0.073	0.076

Note: The table reports linear regressions of the variable “Inequality” on “Choice (nominal)”: indicator variable for the spectator being in the Nominal Choice treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (49 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). “University education”: indicator variable for the spectator having university education. “High income”: indicator variable for the spectator having above median income (above 500 000 NOK). “Work requirement”: indicator variable for the participants being in a work requirement treatment. Robust standard errors in parentheses.

Table A.11: Regression analysis: Heterogeneous effects in the online experiment on giving Nothing to the worse off

	Nothing to the worse off							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Choice	0.100 (0.010)	0.118 (0.020)	0.121 (0.015)	0.134 (0.014)	0.077 (0.012)	0.088 (0.014)	0.091 (0.012)	0.140 (0.029)
Choice × Left-Wing		-0.027 (0.023)						-0.023 (0.023)
Choice × Female			-0.044 (0.020)					-0.036 (0.021)
Choice × Age				-0.075 (0.020)				-0.072 (0.020)
Choice × Cognitive reflection					0.049 (0.021)			0.030 (0.021)
Choice × University education						0.021 (0.020)		0.017 (0.021)
Choice × High income							0.024 (0.023)	0.005 (0.024)
Work-requirement	-0.055 (0.011)	-0.055 (0.011)	-0.055 (0.011)	-0.055 (0.011)	-0.056 (0.011)	-0.055 (0.011)	-0.055 (0.011)	-0.056 (0.011)
Left-Wing	-0.046 (0.012)	-0.028 (0.017)	-0.046 (0.012)	-0.046 (0.012)	-0.046 (0.012)	-0.046 (0.012)	-0.046 (0.012)	-0.032 (0.017)
Female	-0.049 (0.011)	-0.049 (0.011)	-0.019 (0.015)	-0.050 (0.011)	-0.049 (0.011)	-0.049 (0.011)	-0.049 (0.011)	-0.026 (0.015)
Age	-0.061 (0.011)	-0.061 (0.011)	-0.061 (0.011)	-0.011 (0.014)	-0.061 (0.011)	-0.061 (0.011)	-0.061 (0.011)	-0.013 (0.014)
Cognitive reflection	0.050 (0.011)	0.050 (0.011)	0.050 (0.011)	0.049 (0.011)	0.017 (0.015)	0.050 (0.011)	0.050 (0.011)	0.029 (0.015)
University education	0.027 (0.011)	0.027 (0.011)	0.027 (0.011)	0.028 (0.011)	0.027 (0.011)	0.013 (0.015)	0.027 (0.011)	0.016 (0.014)
High income	0.048 (0.012)	0.048 (0.012)	0.047 (0.012)	0.046 (0.012)	0.048 (0.012)	0.048 (0.012)	0.032 (0.017)	0.043 (0.017)
Constant	0.140 (0.017)	0.128 (0.019)	0.126 (0.018)	0.119 (0.018)	0.155 (0.017)	0.148 (0.018)	0.145 (0.017)	0.115 (0.021)
Linear combination		0.091 (0.012)	0.077 (0.013)	0.058 (0.014)	0.126 (0.016)	0.109 (0.014)	0.115 (0.019)	
Observations	4,336	4,336	4,336	4,336	4,336	4,336	4,336	4,336
R^2	0.059	0.059	0.060	0.061	0.060	0.059	0.059	0.063

Note: The table reports linear regressions of the variable “Inequality” on “Choice”: indicator variable for the spectator being in the Forced Choice or the Nominal Choice treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (49 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). “University education”: indicator variable for the spectator having university education. “High income”: indicator variable for the spectator having above median income (above 500 000 NOK). “Work requirement”: indicator variable for the participants being in a work requirement treatment. Robust standard errors in parentheses.

Table A.12: Triple interactions of choice, political preference, and cognitive reflection (lab sample)

	Inequality					
	(1)	(2)	(3)	(4)	(5)	(6)
Choice	0.144 (0.037)	0.258 (0.058)	0.105 (0.054)	0.221 (0.067)	0.216 (0.065)	0.192 (0.074)
Left-Wing	-0.116 (0.037)	0.012 (0.058)	-0.115 (0.038)	0.011 (0.058)	0.164 (0.067)	0.140 (0.078)
Cognitive reflection	-0.003 (0.040)	-0.005 (0.040)	-0.051 (0.062)	-0.049 (0.061)	0.130 (0.074)	0.103 (0.088)
Female	-0.109 (0.040)	-0.116 (0.040)	-0.113 (0.040)	-0.119 (0.040)	-0.110 (0.040)	-0.109 (0.040)
Age	0.018 (0.037)	0.018 (0.036)	0.020 (0.037)	0.020 (0.036)	0.009 (0.036)	0.009 (0.036)
Choice × Left-Wing		-0.192 (0.074)		-0.190 (0.074)	-0.176 (0.073)	-0.138 (0.103)
Choice × Cognitive reflection			0.072 (0.075)	0.067 (0.074)	0.058 (0.072)	0.099 (0.111)
Left-Wing × Cognitive reflection					-0.289 (0.072)	-0.244 (0.113)
Choice × Left-W. × Cognitive r.						-0.069 (0.146)
Constant	0.312 (0.051)	0.240 (0.056)	0.338 (0.058)	0.264 (0.060)	0.170 (0.059)	0.184 (0.059)
Observations	422	422	422	422	422	422
R^2	0.080	0.093	0.082	0.095	0.128	0.128

Note: The table reports linear regressions of the variable “Inequality” on controls and interactions of these. “Choice”: indicator variable for the spectator being in the Forced Choice or the Nominal Choice treatment. “Left-wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (49 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). Robust standard errors in parentheses.

Table A.13: Triple interactions of choice, political preference, and cognitive reflection (online sample)

	Inequality					
	(1)	(2)	(3)	(4)	(5)	(6)
Choice	0.137 (0.011)	0.154 (0.021)	0.114 (0.014)	0.131 (0.022)	0.131 (0.022)	0.129 (0.026)
Work requirement	-0.067 (0.011)	-0.068 (0.011)	-0.068 (0.011)	-0.068 (0.011)	-0.067 (0.011)	-0.067 (0.011)
Left-Wing	-0.062 (0.012)	-0.046 (0.019)	-0.062 (0.012)	-0.046 (0.019)	-0.026 (0.021)	-0.028 (0.023)
Cognitive Reflection	0.058 (0.011)	0.058 (0.011)	0.025 (0.017)	0.025 (0.017)	0.055 (0.025)	0.052 (0.032)
Female	-0.088 (0.011)	-0.089 (0.011)	-0.088 (0.011)	-0.089 (0.011)	-0.089 (0.011)	-0.089 (0.011)
Age	-0.077 (0.011)	-0.077 (0.011)	-0.076 (0.011)	-0.077 (0.011)	-0.077 (0.011)	-0.077 (0.011)
University education	0.020 (0.011)	0.020 (0.011)	0.020 (0.011)	0.020 (0.011)	0.020 (0.011)	0.020 (0.011)
High income	0.048 (0.013)	0.048 (0.013)	0.048 (0.013)	0.049 (0.013)	0.048 (0.013)	0.048 (0.013)
Choice × Left-Wing		-0.024 (0.024)		-0.024 (0.024)	-0.024 (0.024)	-0.021 (0.030)
Choice × Cognitive Reflection			0.049 (0.022)	0.049 (0.022)	0.049 (0.022)	0.054 (0.042)
Left-Wing × Cognitive Reflection					-0.044 (0.025)	-0.039 (0.038)
Choice × Left-W. × Cognitive R.						-0.006 (0.049)
Constant	0.267 (0.018)	0.256 (0.021)	0.282 (0.018)	0.271 (0.021)	0.257 (0.022)	0.258 (0.023)
Observations	4,336	4,336	4,336	4,336	4,336	4,336
R^2	0.092	0.093	0.093	0.094	0.094	0.094

Note: The table reports linear regressions of the variable “Inequality” on controls and interactions of these. “Choice”: indicator variable for the spectator being in the Forced Choice or the Nominal Choice treatment. “Work requirement”: indicator variable for the participants being in a work requirement treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (49 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). “University education”: indicator variable for the spectator having university education. “High income”: indicator variable for the spectator having above median income (above 500 000 NOK). Robust standard errors in parentheses.

Table A.14: Choice effect on allocation, by political party affiliation (online sample)

Party affiliation:	Inequality								
	R (1)	SV (2)	MDG (3)	Ap (4)	Sp (5)	KrF (6)	V (7)	H (8)	Frp (9)
Choice	0.038 (0.051)	0.127 (0.042)	0.118 (0.059)	0.145 (0.021)	0.094 (0.052)	0.189 (0.058)	0.148 (0.044)	0.153 (0.025)	0.159 (0.038)
Work requirement	-0.012 (0.055)	-0.054 (0.045)	-0.101 (0.063)	-0.051 (0.022)	-0.081 (0.053)	-0.131 (0.058)	-0.050 (0.047)	-0.061 (0.025)	-0.110 (0.038)
Female	-0.019 (0.061)	-0.114 (0.047)	-0.058 (0.063)	-0.087 (0.023)	-0.044 (0.056)	-0.047 (0.064)	-0.032 (0.052)	-0.079 (0.027)	-0.057 (0.041)
Age	0.028 (0.070)	-0.062 (0.046)	-0.033 (0.077)	-0.066 (0.022)	-0.065 (0.052)	-0.094 (0.058)	0.018 (0.049)	-0.107 (0.025)	-0.116 (0.038)
Cognitive reflection	0.042 (0.058)	0.041 (0.044)	-0.060 (0.062)	0.051 (0.023)	-0.011 (0.055)	0.100 (0.062)	0.182 (0.048)	0.077 (0.026)	0.096 (0.041)
University education	-0.026 (0.067)	0.002 (0.055)	0.071 (0.065)	0.032 (0.022)	0.050 (0.056)	0.087 (0.059)	0.021 (0.053)	0.016 (0.026)	0.039 (0.040)
High income	0.009 (0.060)	-0.028 (0.048)	0.098 (0.074)	0.059 (0.024)	0.002 (0.064)	-0.051 (0.072)	0.132 (0.053)	0.070 (0.028)	0.042 (0.042)
Constant	0.084 (0.083)	0.195 (0.064)	0.151 (0.090)	0.167 (0.033)	0.269 (0.077)	0.206 (0.082)	-0.007 (0.070)	0.249 (0.039)	0.256 (0.054)
Observations	86	201	113	996	187	145	233	933	414
R^2	0.018	0.085	0.097	0.091	0.044	0.151	0.152	0.104	0.110

Note: Each column looks at the effect of “choice” on implemented inequality within the subset of those that expressed support for a particular political party (in the online sample). The columns are organized from left to right to represent how the parties represent left and right politics. Participants that did not want to reveal their political affiliation are excluded from all columns. “Choice”: indicator variable for the spectator being in the Forced Choice or the Nominal Choice treatment. “Work requirement”: indicator variable for the participants being in a work requirement treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (49 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). “University education”: indicator variable for the spectator having university education. “High income”: indicator variable for the spectator having above median income (above 500 000 NOK). Robust standard errors in parentheses.

Table A.15: Regression analysis: Is perception of control mediating treatment effects?

	Sense of control		Inequality		Nothing to the worse off		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Forced Choice	0.824 (0.064)	0.171 (0.014)	0.149 (0.014)	0.150 (0.014)	0.140 (0.013)	0.123 (0.013)	0.126 (0.013)
Nominal Choice	0.016 (0.052)	0.113 (0.013)	0.113 (0.013)	0.113 (0.013)	0.071 (0.012)	0.071 (0.012)	0.071 (0.012)
Sense of control (1–7)			0.027 (0.004)			0.021 (0.004)	
Sense of control = 2				0.002 (0.023)			–0.028 (0.023)
Sense of control = 3				0.035 (0.025)			–0.001 (0.024)
Sense of control = 4				0.085 (0.024)			0.057 (0.025)
Sense of control = 5				0.080 (0.046)			0.046 (0.047)
Sense of control = 6				0.344 (0.074)			0.304 (0.093)
Sense of control = 7				0.149 (0.029)			0.125 (0.030)
Work requirement	–0.216 (0.049)	–0.067 (0.011)	–0.061 (0.011)	–0.061 (0.011)	–0.055 (0.011)	–0.050 (0.011)	–0.050 (0.011)
Left-Wing	–0.002 (0.054)	–0.065 (0.013)	–0.065 (0.013)	–0.064 (0.013)	–0.047 (0.012)	–0.047 (0.012)	–0.046 (0.012)
Female	–0.215 (0.052)	–0.087 (0.012)	–0.082 (0.012)	–0.081 (0.012)	–0.046 (0.011)	–0.042 (0.011)	–0.041 (0.011)
Age	–0.372 (0.050)	–0.075 (0.011)	–0.065 (0.011)	–0.066 (0.011)	–0.059 (0.011)	–0.051 (0.011)	–0.054 (0.011)
Cognitive Reflection	–0.088 (0.052)	0.059 (0.012)	0.061 (0.012)	0.061 (0.012)	0.052 (0.011)	0.054 (0.011)	0.054 (0.011)
University Education	0.085 (0.052)	0.023 (0.012)	0.021 (0.012)	0.021 (0.012)	0.029 (0.011)	0.027 (0.011)	0.027 (0.011)
High income	0.057 (0.055)	0.047 (0.013)	0.045 (0.013)	0.045 (0.013)	0.047 (0.013)	0.046 (0.013)	0.046 (0.013)
Constant	1.879 (0.083)	0.265 (0.018)	0.214 (0.020)	0.242 (0.019)	0.135 (0.017)	0.095 (0.019)	0.120 (0.018)
Observations	4,141	4,141	4,141	4,141	4,141	4,141	4,141
R^2	0.079	0.097	0.110	0.112	0.066	0.074	0.078

Note: This table reports regressions to study the role of spectator’s perception of control on the estimated treatment effects. Column 1 reports a regression where the outcome is the spectator’s response to whether the participants had control over their earnings (1–7; “no control”=1, “full control”=7). Columns 1–7 correspond to the main analysis reported in Table 3, but where we have included the “perception of control” variable (1–7) in columns (2)–(3) and (4)–(6) and, to study non-linear effects, indicator variables for each possible response in columns (4) and (7). The spectators responding “don’t know” to the “perception of control” question (4.4%) are excluded. Robust standard errors in parentheses.

Table A.16: Regression analysis: The role of choice in the online experiment, “no control” subset

	Inequality			Nothing to worse off		
	(1)	(2)	(3)	(4)	(5)	(6)
Forced Choice	0.136 (0.017)	0.140 (0.016)	0.140 (0.016)	0.100 (0.016)	0.103 (0.016)	0.103 (0.016)
Nominal Choice	0.117 (0.014)	0.115 (0.014)	0.114 (0.014)	0.071 (0.013)	0.070 (0.013)	0.070 (0.013)
Work requirement	-0.053 (0.013)	-0.057 (0.013)	-0.058 (0.013)	-0.040 (0.012)	-0.043 (0.012)	-0.043 (0.012)
Left-Wing		-0.063 (0.014)	-0.059 (0.014)		-0.043 (0.014)	-0.040 (0.014)
Female		-0.090 (0.013)	-0.080 (0.013)		-0.053 (0.012)	-0.045 (0.012)
Age		-0.050 (0.013)	-0.049 (0.013)		-0.039 (0.012)	-0.039 (0.012)
Cognitive Reflection		0.060 (0.013)	0.055 (0.013)		0.051 (0.012)	0.045 (0.012)
University education			0.008 (0.013)			0.020 (0.012)
High income			0.052 (0.015)			0.048 (0.014)
Constant	0.181 (0.012)	0.266 (0.019)	0.238 (0.021)	0.101 (0.011)	0.153 (0.018)	0.121 (0.019)
Observations	3,065	3,065	3,065	3,065	3,065	3,065
R^2	0.033	0.074	0.079	0.018	0.041	0.047

Note: This table replicates Table 3 of the main paper on the subset of participants in the online experiment that report “no control” to the question about the extent to which the participants have control over their earnings. The control variables are “Forced Choice”: indicator variable for the spectator being in the Forced Choice treatment. “Nominal Choice”: indicator variable for the spectator being in the Nominal Choice treatment. “Work requirement”: indicator variable for the participants being in a work requirement treatment. “Left-Wing”: indicator variable for the spectator self-reporting that he or she voted for a non-right-wing party in the last election. “Female”: indicator variable for the spectator being female. “Age”: indicator variable for the spectator’s age being at or above the median in the sample (49 years). “Cognitive Reflection”: indicator variable for the spectator’s score on the cognitive reflection test being at or above median (2 out of 3 points). “University education”: indicator variable for the spectator having university education. “High income”: indicator variable for the spectator having above median income (above 500 000 NOK). Robust standard errors in parentheses.