Choice and Personal responsibility
What is a morally relevant choice?

Applied Statistical Analysis II

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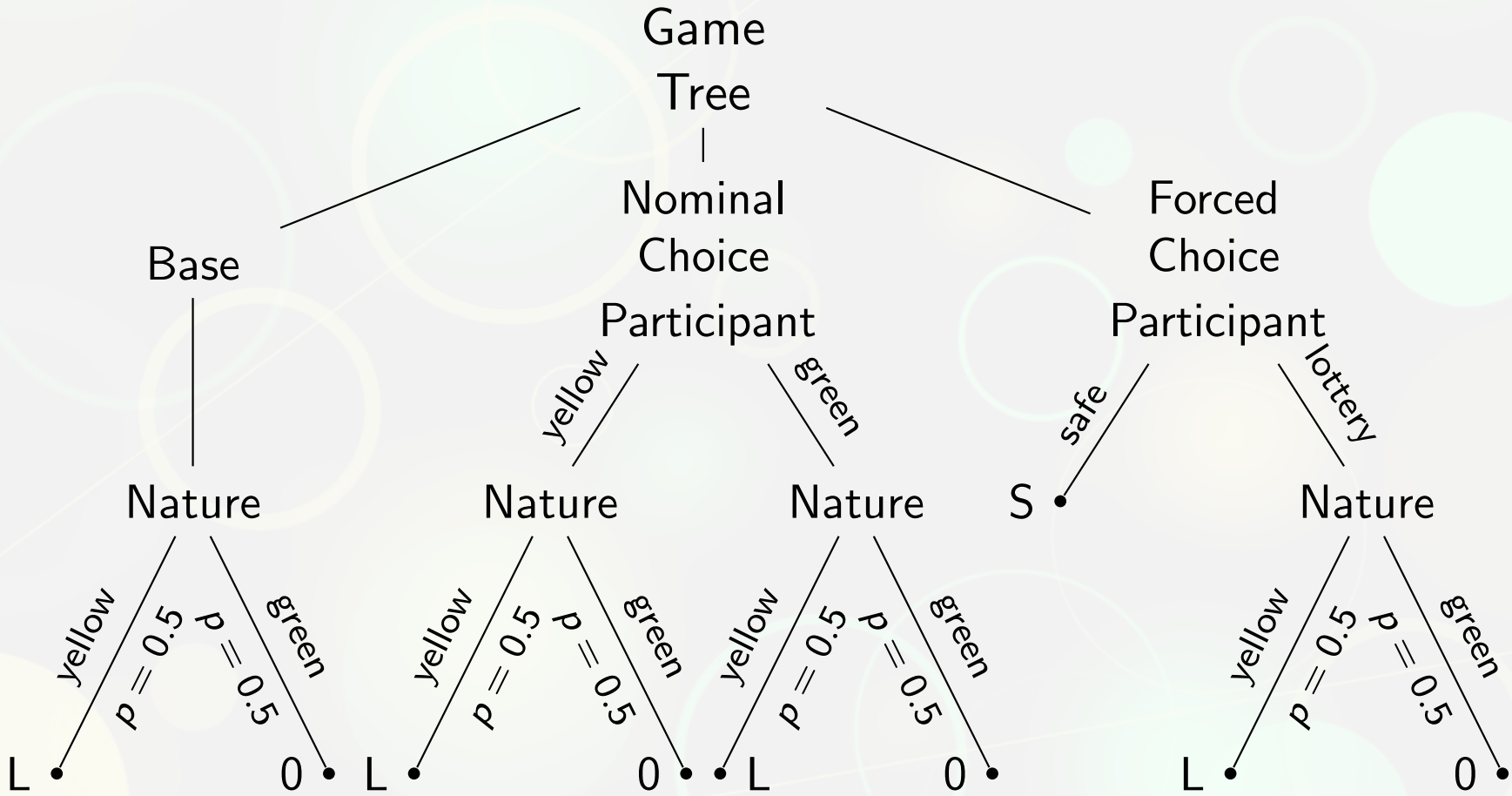
Background/introduction

- Introduction
  - Alexander W. Cappelen, Sebastian Fest, Erik Ø. Sørensen, Bertil Tungodden
  - September 12, 2018
  - Norwegian School of Economics, Bergen, Norway
  - Data from Harvard Dataverse, FAIR - Centre for Experimental Research on Fairness, Inequality and Rationality
  - `https://cee.boun.edu.tr/sites/cee.boun.edu.tr/files/documents/CEE2018Conference/cprwmrc.pdf`

Theory

- Inequality is tolerated because people are blamed for their choices/outcomes.
- 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
  - the person could only have avoided the outcome at unreasonably large cost (**no acceptable alternative**).
- H_0 a trivial choice will make no difference to the outcome.

Game Design


Game Tree
Base
Nominal Choice Participant
Forced Choice Participant
yellow
green
safe
lottery
Nature
Nature
Nature
S
Nature
yellow
p = 0.5
green
p = 0.5
L
0
L
0
L
0
L
0

Experimental Design

- Studying spectators' decision to redistribute money/not
- payment allocated in all cases by lottery - green/yellow ball.
- random allocation to treatment, no interaction - blind trial
- background information about age, gender, and political orientation, education, income.
- three-item cognitive reflection test measuring the ability to correct for incorrect intuitive answers through reflection.

Experimental Design - Variables

Dependent Variables

- `inequality` inequality implemented by the spectator

$$inequality = \frac{|IncomeLucky - IncomeUnlucky|}{TotalIncome} \in [0, 1]$$

Coded as:

```
        abs(800 - 2*transfer)/800
        abs(8 - 2*y)/8.0

```

  - no transfer `inequality` =1;
  - equal split: `inequality` =0;
  - full transfer `inequality` =1

- `zero_to_worst_off` : 1 if the spectator does not assign any income to one of the participants

```
        (y %in% c(0,8))

```

Lab Experiment

- 422 participants from 2 Norwegian colleges
- average age 22.7 years, 54% male, average CRT score 1.6/3, 41% self-reported support for a right-wing party in Norway[a]
- 800 NOK or 0
- all worked at simple task
- spectators were participants; they didn't know when making choice if they had gotten money
- spectators asked what motivated their decision to redistribute/not.
- Average payment was 475 NOK (approximately 80 USD) incl 100 basic fee.

[a] close to the distribution of votes in the last election in Norway.

Experimental Design - Lab - Variables

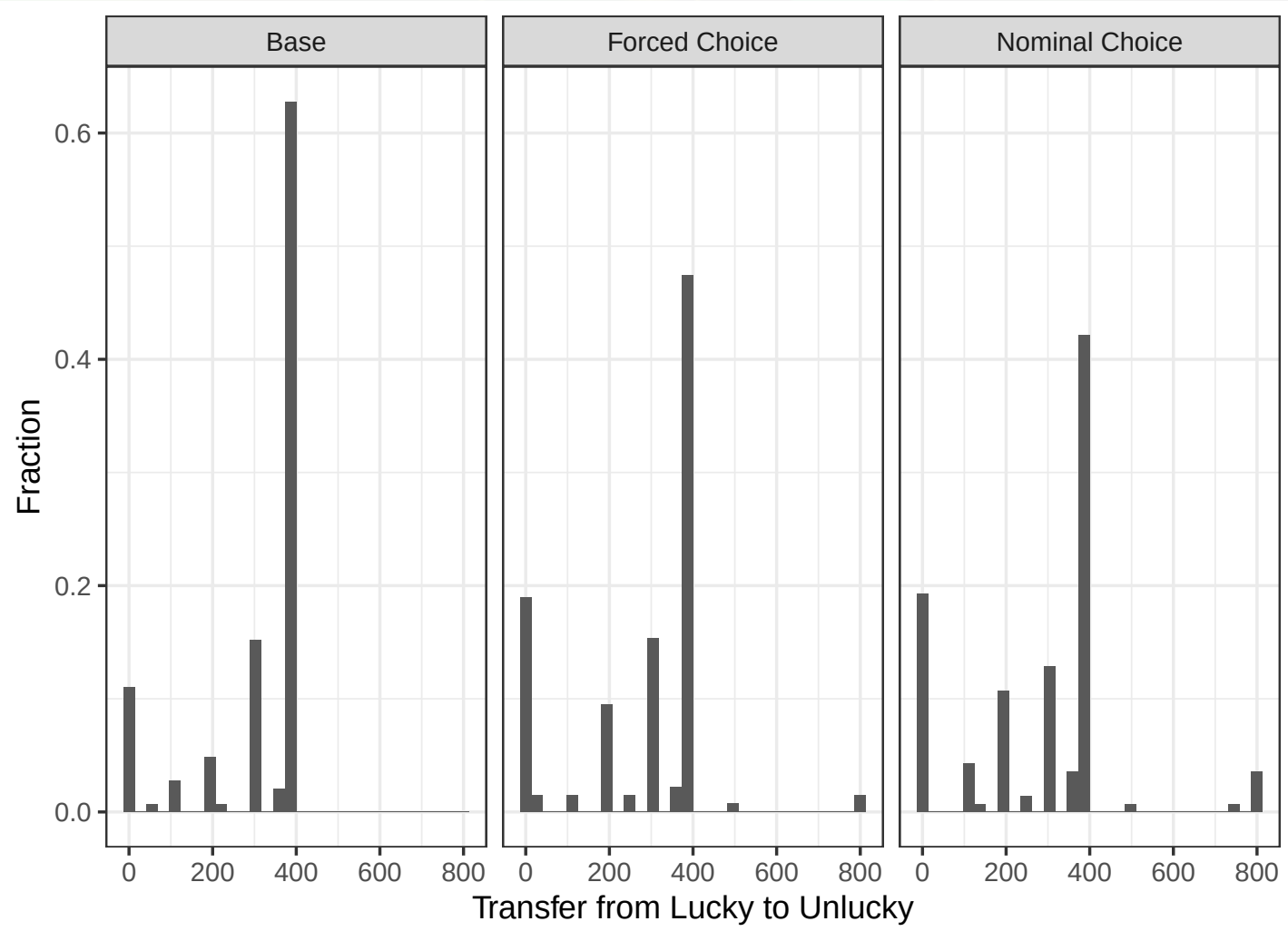
Treatment variables

- `treatment` $\in$ ("Base", "Forced Choice", "Nominal Choice")
- `choice` TRUE if `treatment` $\in$ ("Forced Choice", "Nominal Choice")

Spectator Variables

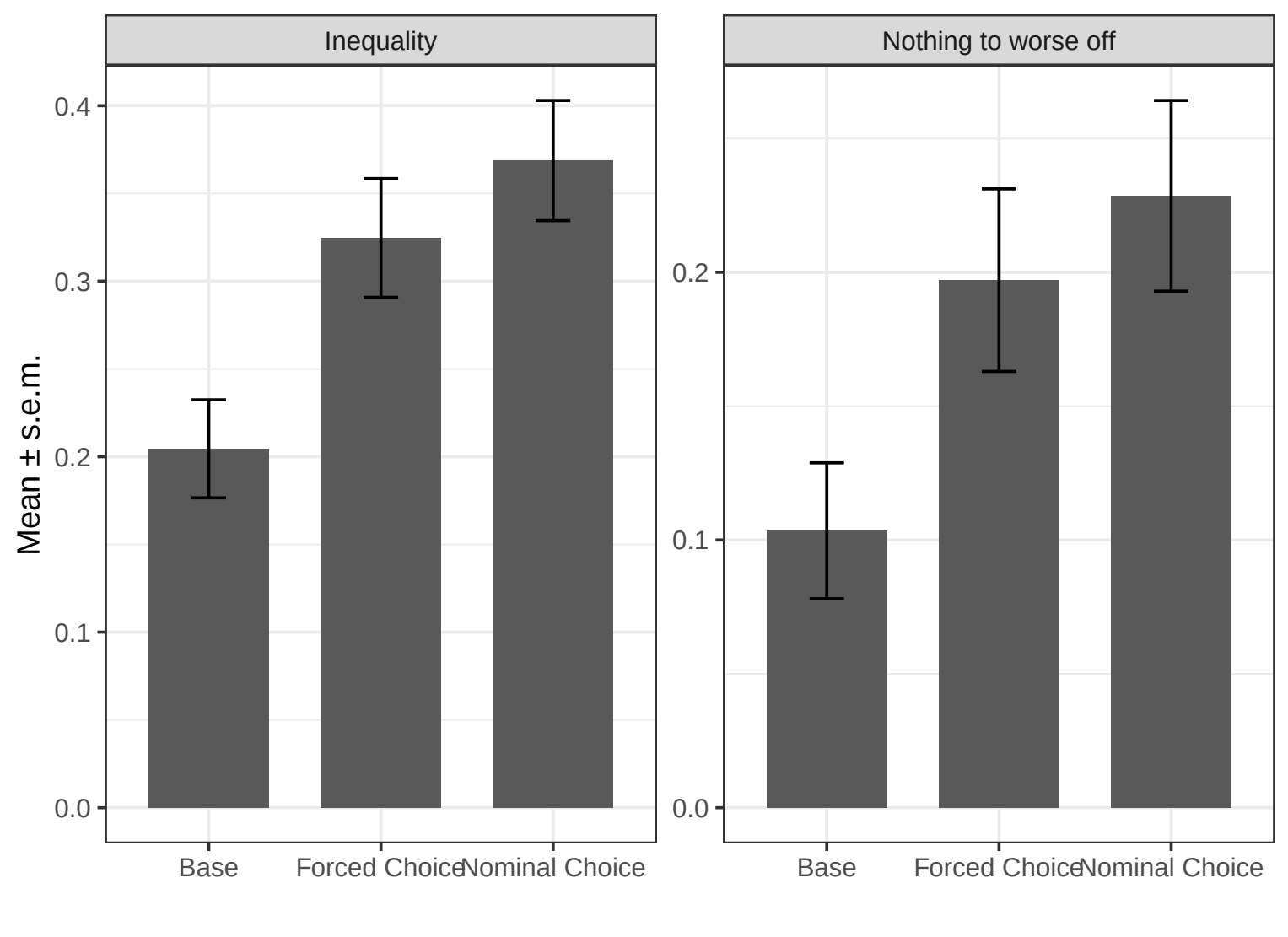
- `leftp`: spectator self-reporting that he or she voted for a non-right-wing party in the last election
- `female`: TRUE if female
- `age_h`: TRUE if age $\geq$ median
- `crt_h`: TRUE if spectator's score on cognitive reflection test $\geq$ median (2 out of 3).

Lab Experiment Transfers



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.

Lab Experiment Inequality



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.

Table 1: Lab Results Regression 1: the role of choice

	inequality		zero_to_worst_off	
	(1)	(2)	(3)	(4)
treatmentForced Choice	0.120	0.125	0.094	0.101
	(0.044)	(0.044)	(0.043)	(0.042)
	p = 0.007	p = 0.005	p = 0.028	p = 0.017
treatmentNominal Choice	0.164	0.163	0.125	0.128
	(0.044)	(0.044)	(0.044)	(0.043)
	p = 0.001	p = 0.001	p = 0.005	p = 0.003
leftp		−0.115		−0.075
		(0.037)		(0.037)
		p = 0.003		p = 0.044
female		−0.108		−0.159
		(0.040)		(0.039)
		p = 0.007		p = 0.00
age_h		0.017		0.051
		(0.037)		(0.036)
		p = 0.646		p = 0.157
crt_h		0.001		0.009
		(0.040)		(0.039)
		p = 0.984		p = 0.827
Constant	0.204	0.310	0.103	0.182
	(0.028)	(0.051)	(0.025)	(0.047)
	p = 0.00	p = 0.00	p = 0.00	p = 0.00
Observations	422	422	422	422
R^2	0.033	0.081	0.020	0.086

Lab Results - Regression 1

Notes

The table reports **linear regressions** on `inequality` in (columns (1)–(2) and on `zero_to_worst_off` (columns (3)–(4))
Robust standard errors in parentheses.

Example

- Base (no choice) `inequality` $= 0.204$; `transfer` $= 318.4$ (NOK)
- Forced Choice `inequality` $= (0.204+0.120)$; `transfer` $= 270.4$ (NOK)

  `inequality` $+60\%$ ($p = 0.007$)
- Nominal Choice `inequality` $= (0.204+0.164)$; `transfer` $= 252.8$ (NOK)

  `inequality` $+80\%$ ($p = 0.001$)

Table 2: Heterogeneous effects in the lab experiment

	inequality					
	(1)	(2)	(3)	(4)	(5)	(6)
choice	0.144	0.258	0.250	0.157	0.105	0.361
	(0.037)	(0.058)	(0.053)	(0.055)	(0.054)	(0.098)
	p = 0.001	p = 0.00	p = 0.00	p = 0.005	p = 0.054	p = 0.001
choiceTRUE:leftp		−0.192				−0.146
		(0.074)				(0.075)
		p = 0.010				p = 0.052
choiceTRUE:female			−0.235			−0.216
			(0.073)			(0.085)
			p = 0.002			p = 0.012
choiceTRUE:age_h				−0.021		−0.044
				(0.075)		(0.075)
				p = 0.779		p = 0.563
choiceTRUE:crt_h					0.072	−0.011
					(0.075)	(0.084)
					p = 0.335	p = 0.892
Constant	0.312	0.240	0.232	0.303	0.338	0.162
	(0.051)	(0.056)	(0.059)	(0.059)	(0.058)	(0.078)
	p = 0.00	p = 0.00	p = 0.00	p = 0.00	p = 0.00	p = 0.038
Linear combination		0.066	0.015	0.136	0.177	
		(0.047)	(0.050)	(0.050)	(0.051)	
		p=0.160	p=0.765	p=0.007	p=0.001	
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	422	422	422	422	422	422
R^2	0.080	0.093	0.100	0.080	0.082	0.109

Lab Experiment - Heterogeneous effects on Inequality

Notes

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. 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.

Online Experiment

Setup

- Participants
  - 2,437 participants on Amazon Mechanical Turk (AMT)
  - 8 USD or $\in (-0.25, 0, .25)$
  - random allocation to: work + earnings/earnings only
- Spectators
  - 5,757 spectators from Norway (KANTAR)
  - on average 48.5 years old, 52% male, average 1.4/3 on CRT, and 31% self-reported support for right-wing parties in Norway.
  - spectators were randomly allocated to treatments and were paid a fixed compensation for taking part in the study, independent of their spectator decision.

Experimental Design - online Variables

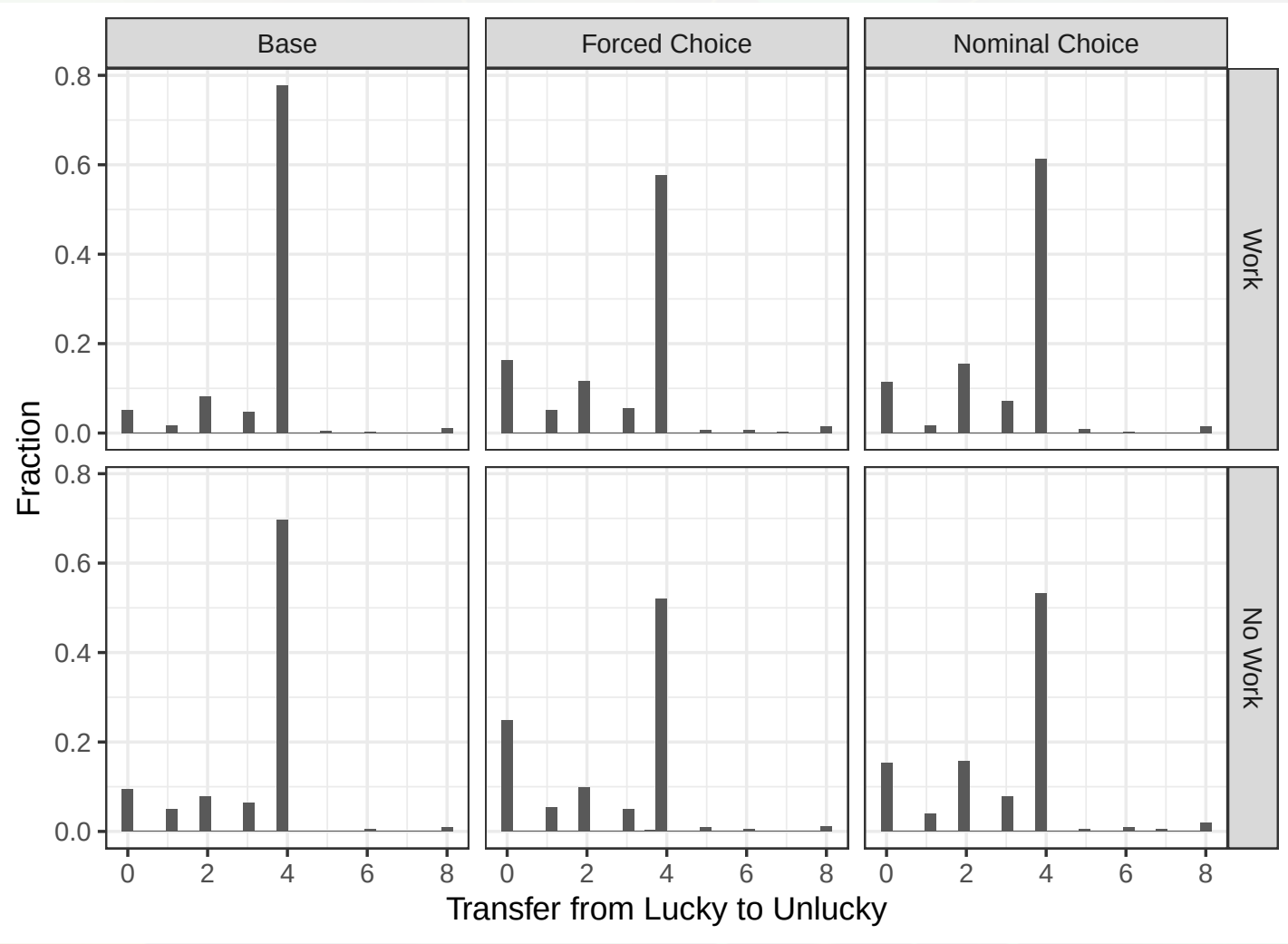
Treatment variables

- `treatment` $\in$ ("Forced Choice", "Nominal Choice")
- `workp` TRUE if work required of participant
- `choice` TRUE if `treatment` $\in$ ("Forced Choice", "Nominal Choice")

Spectator Variables

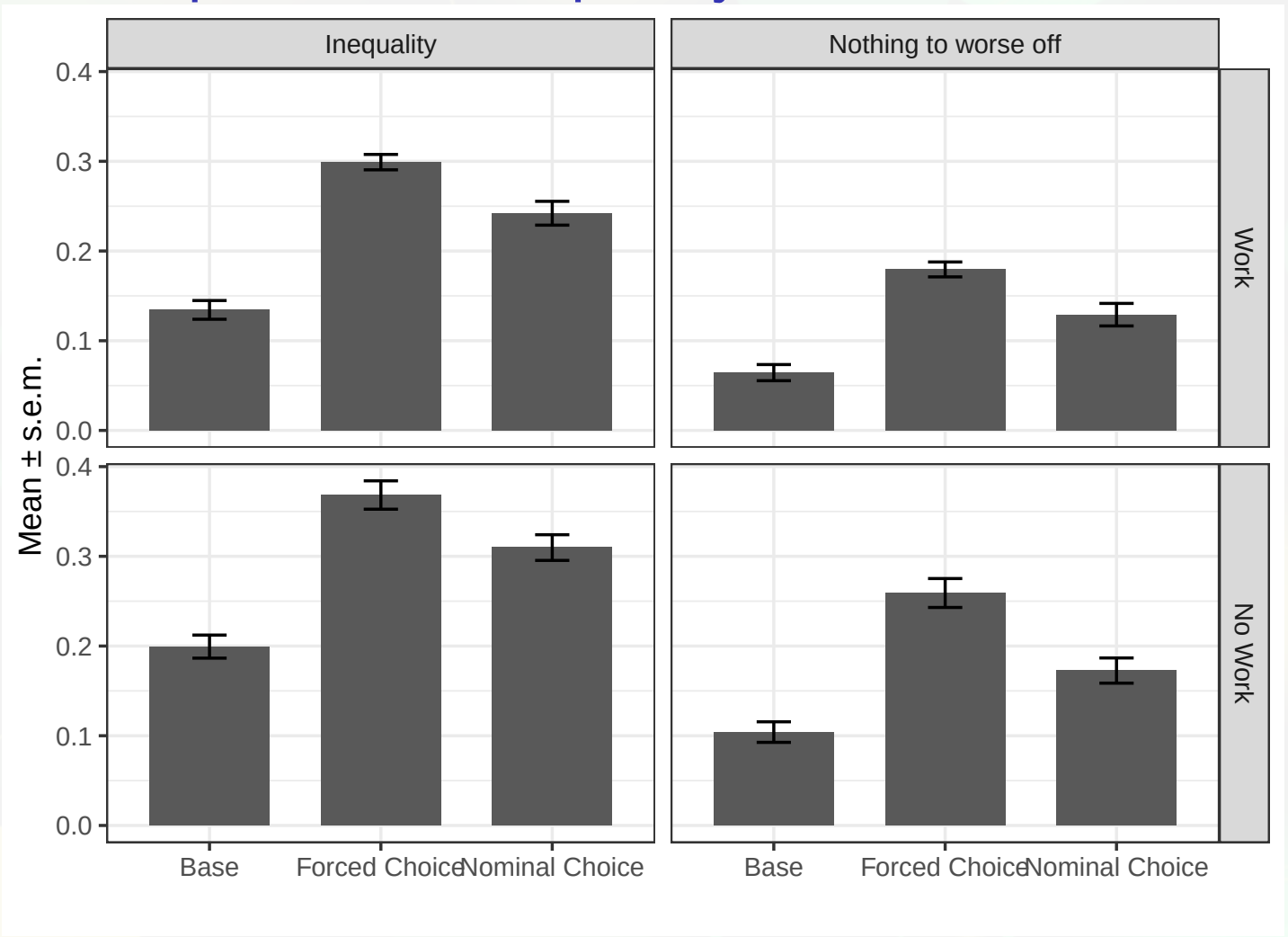
- `leftp`: self-reporting voting for a non-right-wing party in the last election
- `female`: TRUE if female
- `age_h`: TRUE if age $\geq$ median (49)
- `crt_h`: TRUE if score on cognitive reflection test $\geq$ median (2 out of 3).
- `university` TRUE if university education
- `high_income` TRUE if above median income ($> 500,000$)

Online Experiment Transfers



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.

Online Experiment Inequality



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 3: Online Results - Regression Analysis: the role of choice

	inequality			zero_to_worst_off		
	(1)	(2)	(3)	(4)	(5)	(6)
treatmentgroupForced Choice	0.166	0.162	0.162	0.130	0.127	0.127
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
treatmentgroupNominal Choice	0.109	0.108	0.108	0.066	0.066	0.066
	(0.013)	(0.013)	(0.013)	(0.012)	(0.012)	(0.012)
workp	−0.068	−0.069	−0.069	−0.058	−0.059	−0.059
	(0.011)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
leftp		−0.067	−0.064		−0.050	−0.047
		(0.011)	(0.011)		(0.011)	(0.011)
female		−0.094	−0.084		−0.054	−0.044
		(0.010)	(0.010)		(0.010)	(0.010)
age_h		−0.077	−0.078		−0.056	−0.057
		(0.010)	(0.010)		(0.009)	(0.009)
crt_h		0.066	0.059		0.059	0.051
		(0.010)	(0.010)		(0.010)	(0.010)
university			0.016			0.021
			(0.010)			(0.010)
high_income			0.050			0.049
			(0.011)			(0.011)
Constant	0.201	0.299	0.269	0.113	0.174	0.141
	(0.010)	(0.015)	(0.016)	(0.009)	(0.015)	(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

Online Results - Regression 3

Notes

The table reports linear regressions on `inequality` in (columns (1)–(3) and on `zero_to_worst_off` (columns (4)–(6)).
Robust standard errors in parentheses.

Example

keeping workp constant

- Base (no choice) `inequality` $= 0.201$; `transfer` $= 1.61$ (USD)
- Forced Choice `inequality` $= (0.201+0.166 = 0.367)$; `transfer` $= 2.53$ (USD)

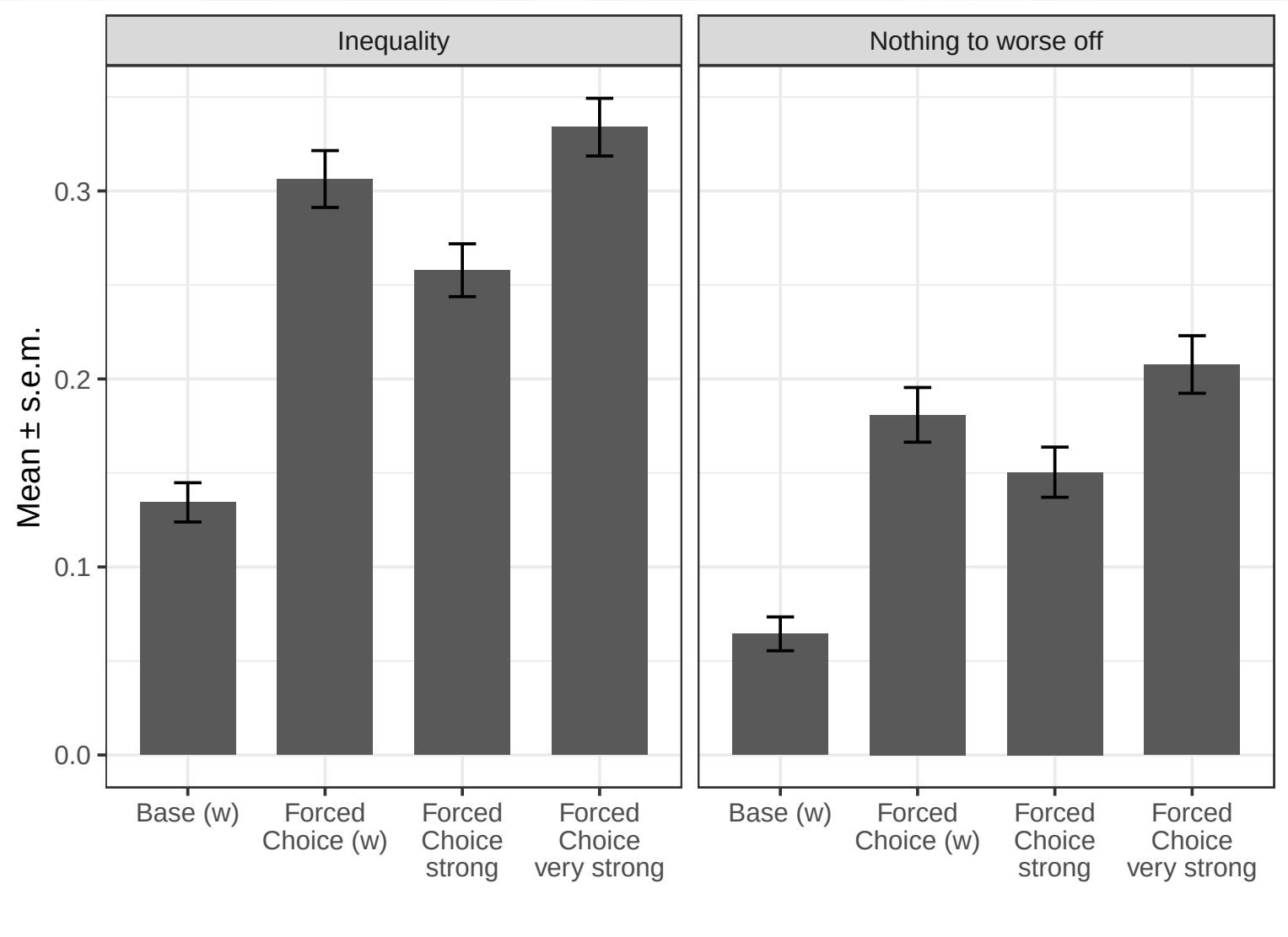
  `inequality` $+83\%$ ($p = 0.011$)
- Nominal Choice `inequality` $= (0.204+0.109)$; `transfer` $= 2.76$ (USD)

  `inequality` $+54\%$ ($p = 0.013$)

Table 2: Heterogeneous effects in the lab experiment

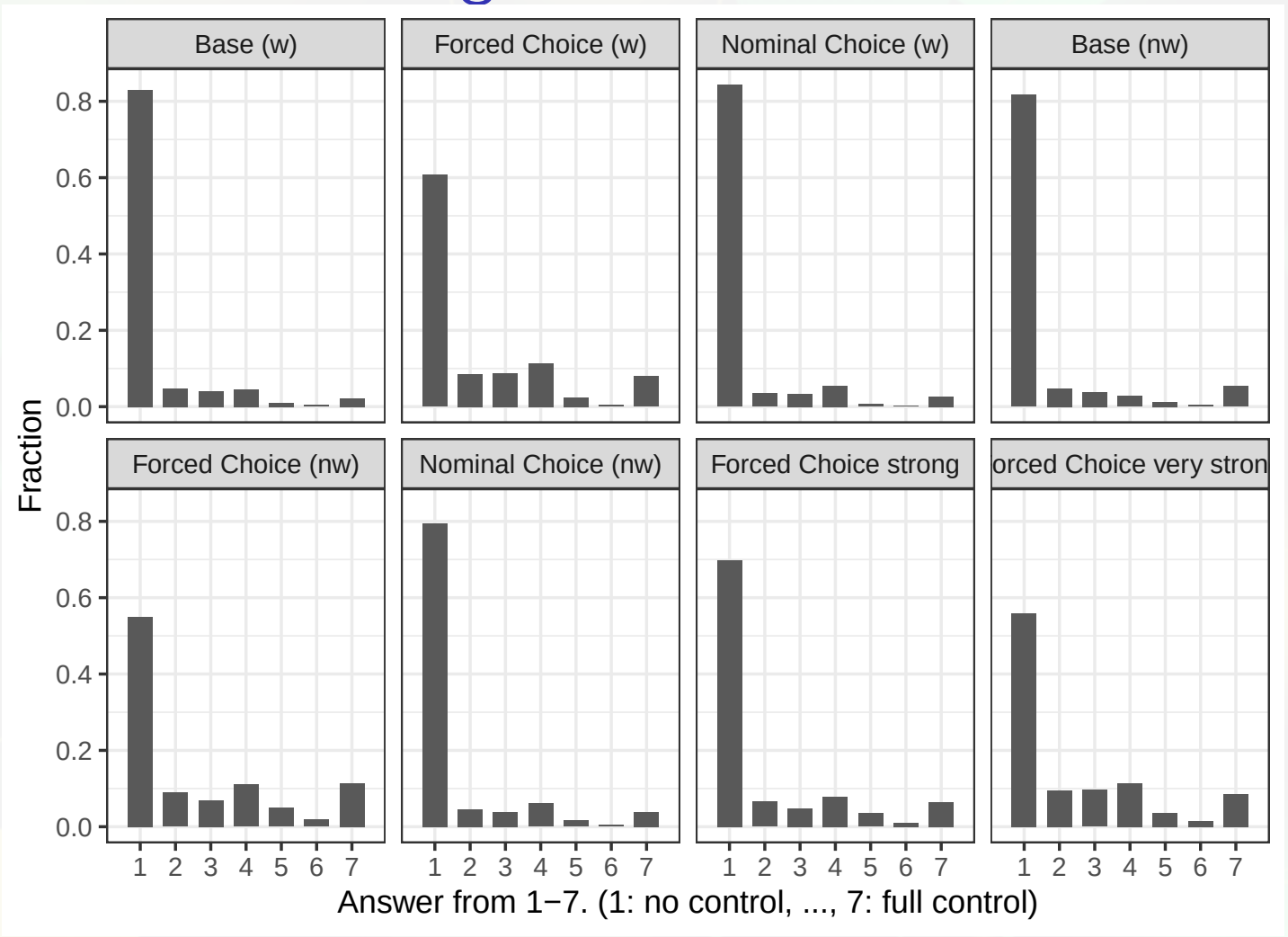
	inequality							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
choice	0.142	0.158	0.161	0.171	0.123	0.142	0.133	0.179
	(0.010)	(0.019)	(0.015)	(0.014)	(0.013)	(0.015)	(0.012)	(0.028)
choice*Left		−0.023						−0.017
		(0.022)						(0.023)
choice*female			−0.038					−0.027
			(0.020)					(0.021)
choice*age				−0.064				−0.061
				(0.020)				(0.020)
choice*crt					0.043			0.030
					(0.020)			(0.021)
choice*uni						0.002		−0.006
						(0.020)		(0.021)
choice*income							0.028	0.018
							(0.022)	(0.024)
workp	−0.060	−0.060	−0.060	−0.060	−0.060	−0.060	−0.060	−0.060
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Constant	0.264	0.253	0.251	0.244	0.279	0.265	0.271	0.239
	(0.016)	(0.020)	(0.018)	(0.018)	(0.017)	(0.018)	(0.017)	(0.024)
Linear comb		0.135	0.123	0.107	0.166	0.143	0.161	
		(0.012)	(0.013)	(0.014)	(0.016)	(0.014)	(0.019)	
Observations	5,757	5,757	5,757	5,757	5,757	5,757	5,757	5,757
R^2	0.081	0.081	0.082	0.082	0.082	0.081	0.081	0.083

Inequality implemented - forced choices



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.

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"

Conclusions

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.

Lab Data - model transfer (scaled)

	inequality		transfer	
	(1)	(2)	(3)	(4)
treatmentForced Choice	0.120	0.125	−0.044	−0.045
	(0.044)	(0.044)	(0.023)	(0.023)
	p = 0.007	p = 0.005	p = 0.056	p = 0.047
treatmentNominal Choice	0.164	0.163	−0.038	−0.038
	(0.044)	(0.044)	(0.024)	(0.024)
	p = 0.001	p = 0.001	p = 0.114	p = 0.115
leftp		−0.115		0.026
		(0.037)		(0.021)
		p = 0.003		p = 0.213
female		−0.108		0.035
		(0.040)		(0.021)
		p = 0.007		p = 0.103
age_h		0.017		−0.008
		(0.037)		(0.020)
		p = 0.646		p = 0.683
crt_h		0.001		0.001
		(0.040)		(0.021)
		p = 0.984		p = 0.958
Constant	0.204	0.310	0.398	0.371
	(0.028)	(0.051)	(0.014)	(0.026)
	p = 0.000	p = 0.000	p = 0.000	p = 0.000
Observations	422	422	422	422
R^2	0.033	0.081	0.009	0.022

Online Data - model transfer (scaled)

	inequality		transfer		
	(1)	(2)	(3)	(4)	(5)
treatmentgroupForced Choice	0.166	0.162	−0.077	−0.075	−0.075
	(0.011)	(0.011)	(0.011)	(0.006)	(0.006)
	p = 0.000	p = 0.000	p = 0.000	p = 0.000	p = 0.000
treatmentgroupNominal Choice	0.109	0.108	−0.044	−0.044	−0.045
	(0.013)	(0.013)	(0.013)	(0.007)	(0.007)
	p = 0.000	p = 0.000	p = 0.001	p = 0.000	p = 0.000
workp	−0.068	−0.069	0.035	0.035	0.035
	(0.011)	(0.010)	(0.010)	(0.006)	(0.006)
	p = 0.000	p = 0.000	p = 0.001	p = 0.000	p = 0.000
leftp		−0.067		0.033	0.032
		(0.011)			(0.006)
		p = 0.000			p = 0.000
female		−0.094		0.033	0.030
		(0.010)			(0.005)
		p = 0.000			p = 0.000
age_h		−0.077		0.033	0.033
		(0.010)			(0.005)
		p = 0.000			p = 0.000
crt_h		0.066		−0.052	−0.047
		(0.010)			(0.005)