Fairness, Inequality, and Responsibility

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Plan for the lectures

- Fairness, inequality, and personal responsibility: Understanding inequality acceptance

- How fair is fair?

- Second-best fairness

- What is shaping fairness preferences?

- Fairness in action

- **Collaborative work!**

As economists, we want to express to Congress our great concern for the plan proposed by Treasury Secretary Paulson to deal with the financial crisis. We are well aware of the difficulty of the current financial situation and we agree with the need for bold action to ensure that the financial system continues to function. We see three fatal pitfalls in the currently proposed plan:

1) Its fairness. The plan is a subsidy to investors at taxpayers' expense. Investors who took risks to earn profits must also bear the losses. Not every business failure carries systemic risk. The government can ensure a well-functioning financial industry, able to make new loans to creditworthy borrowers, without bailing out particular investors and institutions whose choices proved unwise.

2) Its ambiguity. Neither the mission of the new agency nor its oversight are clear. If taxpayers are to buy illiquid and opaque assets from troubled sellers, the terms, occasions and methods of such purchases must be crystal clear ahead of time and carefully monitored afterwards.

3) Its long-term effects. If the plan is enacted, its effects will be with us for a generation. For all their recent troubles, America's dynamic and innovative private capital markets have brought the nation unparalleled prosperity. Fundamentally weakening those markets in order to calm short-run disruptions is desperately short-sighted.

Inequality

The rich and the rest

What to do (and not do) about inequality

Jan 20th 2011 | from the print edition

The Economist/Corbis

- "It seems unfair that footballers, bankers, and tycoons earn more money than they know what to do with whereas jobless folk and single parents struggle to pay the rent...Yet it also seems unfair to take money from those who have worked hard and give it to those who have not, or to take away the profits of those who have risked their life savings to bring a new intervention to market in order to help those who have risked nothing. Different societies choose to deal with this conflict in different ways."

The importance of personal responsibility

- **A fundamental moral ideal** in Western societies is that people should be held personally responsible for the consequences of their choices (Greenfield, 2011).

- Heated political debate about how to interpret the idea of personal responsibility.
  - It has been argued in recent years that American politics has become **a personal responsibility crusade** (Hacker, 2006).
  - The significant drop in government transfers to single parents and families with nonemployed members appears to be rooted in the presumption that these groups should be held personally responsible for their situation (Robert A. Moffitt's Presidential Address to the Population Association of America "The Deserving Poor, the Family, and the U.S. Welfare System").

- Personal responsibility plays a prominent role **in many spheres of society.**
  - Much of the health policy debate on life-style related diseases (high cholesterol and obesity) rests on how to understand the notion of personal responsibility (Wikler, 2002; Brownell, 2010).

Fairness and personal responsibility

- **Fairness** matters for people, but is not considered to be the same as **equality** - people seem to make a distinction between fair and unfair inequalities.

- People appear to relate fairness to some level of **personal responsibility** (beyond what is justified on purely incentive grounds).

- The idea of personal responsibility seems to involve considerations of **merit (choices, talent, and effort) and luck**.

Social preferences: What motivates individual distributive behavior?

- **First generation of social preference models:** Focus on how people trade off selfish concerns and a dislike for inequalities (Fehr and Schmidt, QJE, 1998; Bolton and Ockenfels, AER, 2000; Charness and Rabin, QJE, 2002).

- **Approach**: Study distributive behavior in a dictator game, where the money to be distributed is "manna from heaven" - premise is that *all inequalities are unfair*.

- **Main finding**: There is substantial heterogeneity in the importance attached to avoiding inequality, where a large share deviate from the standard model of narrowly selfish individuals.

Social preferences and personal responsibility

- In a series of papers, we have studied how the idea of personal responsibility shapes distributive behavior (Cappelen, Hole, Sørensen, and Tungodden, AER, 2007; Cappelen, Sørensen, and Tungodden, EER, 2010; Almaas, Cappelen, Sørensen, and Tungodden, Science, 2010; Cappelen, Moene, Sørensen, and Tungodden, JEEA,2013; Cappelen, Konow, Sørensen, and Tungodden, AER, 2013, Cappelen, Eichle, Hughdahl, Specht, Sorensen, and Tungodden, PNAS, 2015; Cappelen, Halvorsen, Sorensen, and Tungodden, JEEA, forthcoming).

- **Background**: Motivated by the normative literature on fairness and personal responsibility in political philosophy and economics (Roemer, Fleurbaey, and others).

- **Approach**: Study distributive behavior in real-effort dictator games, where the money to be distributed is created in a production phase - pre-redistribution inequality reflects differences in *merit and luck*. Both structural and non-structural analysis.

- **Main finding**: There is substantial *heterogeneity* in what people consider fair in any particular situation. We also show that with this approach, we get distributive behavior in the lab *aligned with distributive behavior outside the lab.*

Our framework

$$U(y; \cdot) = y - \beta(y - m)^2/2X,$$

$$y^* = m + X/\beta,$$

New paper: Cutthroat capitalism versus cuddly socialism (with Ingvild Almaas and Alexander W. Cappelen

- Provides a **novel comparison** of social preferences in the US and Scandinavia (Norway).
- Provides **causal evidence** of the importance of the *source of inequality (merit versus luck)* and the *cost of redistribution* for inequality acceptance in *the general population*.
- Introduces a **new approach** to conducting nationally representative economic experiments.

US versus Scandinavia: Very different societies in terms of inequality, redistribution and welfare policies

- More poverty and inequality in the US than in Scandinavia (World Bank, 2013).
    - Huge difference in overall income inequality and relative poverty.
    - Top 1% of earners capturing almost 18-19% of total national income in the US, around 5-8% in Scandinavia (Atkinson, Piketty and Saez, 2011, www.knoema.com).

- Scandinavian countries have "much stronger safety nets, more elaborate welfare states, and more egalitarian income distributions" (Acemoglu, Robinson, Verdier, 2013).

Income inequality: Two extremes in the OECD
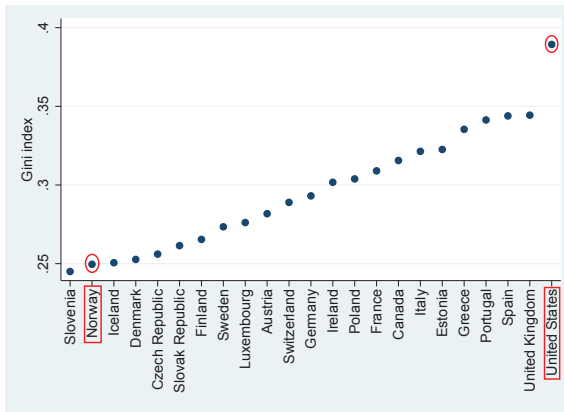
Gini inequality measure (disposable income) for countries in Europe and North America. The data are from the *OECD stat extract* webpage.

Poverty rates much higher in the US than in Scandinavia

Figure 5.1. **Relative poverty rates for different income thresholds, mid-2000s**
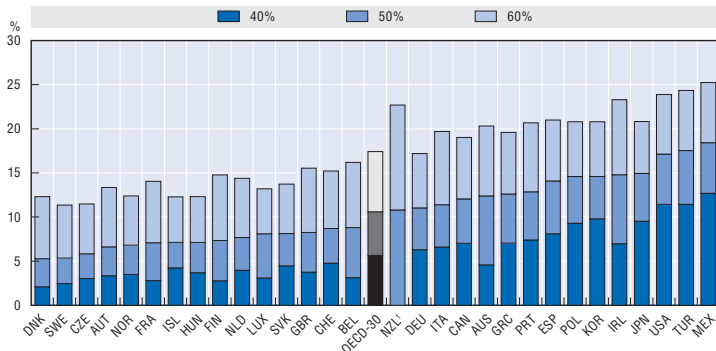Relative poverty rates at 40, 50 and 60% of median income thresholds

Figure from OECD (2008): *Growing Unequal? Income Distribution and Poverty in OECD Countries.*

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A puzzle for economists

The New York Times

The Opinion Pages

The Conscience of a Liberal
PAUL KRUGMAN

Notes on the Political Economy of Redistribution

SEPTEMBER 21, 2012 10:09 AM   💬 235 Comments

more redistribution. What we see in practice, however, is that European countries with relatively low inequality of market income do much more redistribution than the United States, with its high inequality – and that as America has gotten more unequal, its tax and transfer system has grown less, not more redistributive.

I don't think we have a full explanation of these awkward facts. But the model is

Political attention

-

Bernie Sanders: US should be more like socialist Scandinavia

By Marisa Schultz   May 3, 2015 | 2:30pm

What can explain the huge difference between the US and Scandinavia in inequality and redistribution?

- The **source of inequality** may differ.
  - May reflect differences in **effort** in the US and differences in **luck** in Europe (Piketty, 1995; Alesina and Angeletos, 2005; Bènabou and Tirole, 2006).

- The **cost of redistribution** may differ.
  - The cost of redistribution may be greater in the US than in Scandinavia (Kuziemko, Norton, Saez, and Stantcheva, 2015; Acemoglu, Robinson, Verdier, 2013).

Our focus: social preferences

- People's social preferences may **affect** inequality and redistribution in at least two important ways:
  - The political support for redistribution.
  - The pre-redistribution income inequality (generated for example in markets).

- People's social preferences may clearly be **shaped** by the redistributive institutions that are present in a society.

Research question I: Do Americans and Scandinavians differ in their social preferences?

- **Approach:** We study the distributive behavior of Americans and Scandinavians in **identical economic environments**, where they face **the same source of inequality** and **the same cost of redistribution**?
  - Do we observe more inequality acceptance in the US (cutthroat capitalism) than in Scandinavia (cuddly socialism) when considering outcomes in a real labor market?
  - Do Americans and Scandinavians differ in what they consider to be a fair inequality and in how much they care about fairness?

- Different social preferences in the US and Scandinavia may contribute to explain the observed differences in inequality and redistribution.

Research question II: What causes inequality acceptance?

- How important are **the source of inequality** and **the cost of redistribution** for inequality acceptance?

- A growing experimental literature has considered each of these dimensions separately, but **few studies have looked at them in combination** (Konow, 2000, Andreoni and Miller, 2002; Charness and Rabin, 2002; Engelmann and Strobel, 2004; Fehr, Naef, and Schmidt, 2006; Fisman, Kariv, and Markovits, 2007; Cappelen, Hole, Sørensen, and Tungodden, 2007; Bellemare, Kröger, and van Soest, 2008; Fehr, Bernhard, and Rockenbach, 2008; Cappelen, Sørensen, and Tungodden, 2010; Almås, Cappelen, Sørensen, and Tungodden, 2010; Cappelen, Konow, Sørensen, and Tungodden, 2013; Fehr, Glätzle-Rützler, and Sutter, 2013; Fisman, Jakiela and Kariv, 2014, Durante, Putterman, and van der Weele, 2014).

Pre-analysis plan

- Describes the main research questions and formulates the main hypotheses to be tested.

- Describes the design in detail.

- Describes the identification strategy.

- The plan is publicly available and was posted on AEA RCT registry before we opened any data for analysis.

- The analysis I present today was described in the pre-analysis plan.

Plan for the presentation of the paper

- The design of the experiment.

- Simple theoretical framework.

- Causal evidence on inequality acceptance.

- Comparison of US and Norway.

- Heterogeneity analysis within countries.

- External validity.

Main features of the design

- **Experimental design: Spectators** decide how to pay **workers** for a job they have conducted.

- **Workers** recruited on an international online labor market (mturk).
  - Same pool used in the US and Norway.

- **Spectators** recruited and participating through an international data-collection agency (Norstat/Research Now).
  - Representative samples of the populations in the US and Norway.

Design: workers

- When recruited, the workers were promised a participation fee of 2 USD and told that they could earn additional money.

- The workers worked on three different assignments, altogether it took them approximately 20 minutes to finish.
    - Two sentence unscrambling tasks (where there is no measure of productivity).
    - One code recognition task (productivity measured).

- After completing the assignments, they were told how their earnings would be decided.

- We recruited 1334 workers (each worked on 3 assignments giving us 2000 unique pairs of assignments/workers).

Design: spectators

- In each country, we recruited 1000 participants who are nationally representative (+ 18 years old) on observable characteristics.

- The participants acted as spectators (Cappelen, Konow, Sørensen, and Tungodden, 2013) and determined the distribution of earnings between a pair of workers.

- Three treatments, between-individual design.

  - Luck (L).
  - Merit (M).
  - Efficiency (E), introducing a cost of redistribution.

-

Table 2: Descriptive statistics - background variables for the spectator sample

	United States	Norway
Share female	0.51	0.48
Age		
Median	44	53
p10	23	27
p90	67	72
Eduction shares		
High school or less	0.32	0.38
College	0.38	0.29
Higher education	0.30	0.33
Income (USD)		
Median	5500	5385
p10	1500	2071
p90	16250	8700
Share conservative	0.31	0.33
Number of participants	1000	1000

Treatment 1: Luck

In contrast to traditional survey questions that are about hypothetical situations, we now ask you to make a choice that has consequences for a real life situation. A few days ago two individuals, let us call them worker A and worker B, were recruited via an **international online market place** to conduct an assignment.

They were each offered a participation compensation of 2 USD regardless of what they were paid for the assignment. After completing the assignment, they were told that their earnings from the assignment would be determined by a lottery. The worker winning the lottery would earn 6 USD for the assignment and the other worker would earn nothing for the assignment. They were not informed about the outcome of the lottery. However, they were told that a third person would be informed about the assignment and the outcome of the lottery, and would be given the opportunity to redistribute the earnings and thus determine how much they were paid for the assignment.

You are the third person and we now want you to choose whether to redistribute the earnings for the assignment between worker A and worker B. Your decision is completely anonymous. The workers will receive the payment that you choose for the assignment within a few days, but will not receive any further information.

Treatment 1: Luck

Worker A won the lottery and earned 6 USD for the assignment, thus worker B earned nothing for the assignment.

Please state which of the following alternatives you choose:

I do not redistribute:

- worker A is paid 6 USD and worker B is paid 0 USD.

I do redistribute:

- worker A is paid 5 USD and worker B is paid 1 USD.

- worker A is paid 4 USD and worker B is paid 2 USD.

- worker A is paid 3 USD and worker B is paid 3 USD.

- worker A is paid 2 USD and worker B is paid 4 USD.

- worker A is paid 1 USD and worker B is paid 5 USD.

- worker A is paid 0 USD and worker B is paid 6 USD.

Treatment 2: Merit

In contrast to traditional survey questions that are about hypothetical situations, we now ask you to make a choice that has consequences for a real life situation. A few days ago two individuals, let us call them worker A and worker B, were recruited via an international online market place to conduct an assignment.

They were each offered a participation compensation of 2 USD regardless of what they were paid for the assignment. **After completing the assignment, they were told that their earnings from the assignment would be determined by their productivity. The most productive worker would earn 6 USD for the assignment and the other worker would earn nothing for the assignment. They were not informed about who was the most productive worker.** However, they were told that a third person would be informed about the assignment and who was most productive, and would be given the opportunity to redistribute the earnings and thus determine how much they were paid for the assignment.

You are the third person and we now want you to choose whether to redistribute the earnings for the assignment between worker A and worker B. Your decision is completely anonymous. The workers will receive the payment that you choose for the assignment within a few days, but will not receive any further information.

Treatment 2: Merit

Worker A was more productive and earned 6 USD for the assignment, thus worker B earned nothing for the assignment.

Please state which of the following alternatives you choose:

I do not redistribute:

- worker A is paid 6 USD and worker B is paid 0 USD.

I do redistribute:

- worker A is paid 5 USD and worker B is paid 1 USD.

- worker A is paid 4 USD and worker B is paid 2 USD.

- worker A is paid 3 USD and worker B is paid 3 USD.

- worker A is paid 2 USD and worker B is paid 4 USD.

- worker A is paid 1 USD and worker B is paid 5 USD.

- worker A is paid 0 USD and worker B is paid 6 USD.

Treatment 3: Efficiency

In contrast to traditional survey questions that are about hypothetical situations, we now ask you to make a choice that has consequences for a real life situation. A few days ago two individuals, let us call them worker A and worker B, were recruited via an international online market place to conduct an assignment.

They were each offered a participation compensation of 2 USD regardless of what they were paid for the assignment. After completing the assignment, they were told that their earnings from the assignment would be determined by a lottery. The worker winning the lottery would earn 6 USD for the assignment and the other worker would earn nothing for the assignment. They were not informed about the outcome of the lottery. However, they were told that a third person ...

You are the third person and we now want you to choose whether to redistribute the earnings for the assignment between worker A and worker B. Your decision is completely anonymous. The workers will receive the payment that you choose for the assignment within a few days, but will not receive any further information.

Worker A won the lottery and earned 6 USD for the assignment, thus worker B earned nothing for the assignment. **There is a cost of redistribution. If you choose to redistribute, increasing worker B's payment by 1 USD will decrease worker A's payment by 2 USD.**

Worker A won the lottery and earned 6 USD for the assignment, thus worker B earned nothing for the assignment.

Please state which of the following alternatives you choose:

I do not redistribute:

- worker A is paid 6 USD and worker B is paid 0 USD.

I do redistribute:

- worker A is paid 4 USD and worker B is paid 1 USD.

- worker A is paid 2 USD and worker B is paid 2 USD.

- worker A is paid 0 USD and worker B is paid 3 USD.

Important design choices

- **Real choice**: The decision made by a spectator was matched with a unique pair of workers who were recruited on an online market platform.

- **Same pre-redistribution earnings in all situations**: All spectators faced the pre-redistribution earnings of (6 USD, 0 USD).

- **Complete information**: Spectators had complete information about the source of the inequality and the cost of redistribution.

Theoretical framework

- We provide a simple social preference model to guide the interpretation of the results.

- We assume that the spectators care about **fairness** and **efficiency**:

$$V(y; \cdot) = -\frac{\beta}{2}(y - m(j))^2 - c(j)y \qquad (1)$$

- where $\beta > 0$ is the weight attached to fairness relative to efficiency, y is the share of total income to the worker with no pre-redistribution earnings. $m(j)$ is what the spectator perceives as the fair share to the worker with no pre-redistribution earnings in treatment j, and $c(j)$ is the cost of redistribution in treatment j, $j = L, M, E$.

Optimal behavior (interior solution)

$$y = m(j) - \frac{c(j)}{\beta} \tag{2}$$

- We observe that:
    - $\beta \to 0$ implies that $y \to 0$.
    - $\beta \to \infty$ implies that $y \to m(j)$.

Treatment differences

- Identify the importance of **the source of inequality for fairness considerations:**

$$y(L) - y(M) = m(L) - m(M) \tag{3}$$

- Identify the relative importance of **a cost of redistribution** (assuming that $m(L) = m(E)$):

$$y(L) - y(E) = \frac{c(E)}{\beta} \tag{4}$$

Summary: Treatments and identification

All treatments: Earnings of (6 USD, 0 USD).

- Only difference: Source of inequality or cost of redistribution.

The three treatments enable us to identify:

- General inequality acceptance.
- Causal effect of the source of inequality.
- Causal effect of a cost of redistribution.

Share implementing equality (US): **Luck**

United States

United States

United States

Share implementing equality (Norway): **Luck**

Norway

Share implementing equality (Norway): **Luck vs Merit**
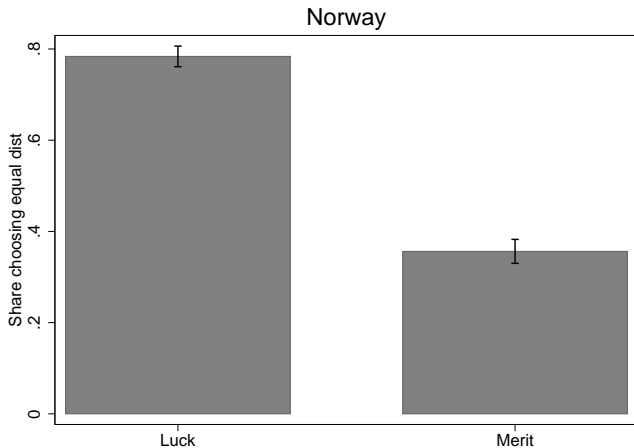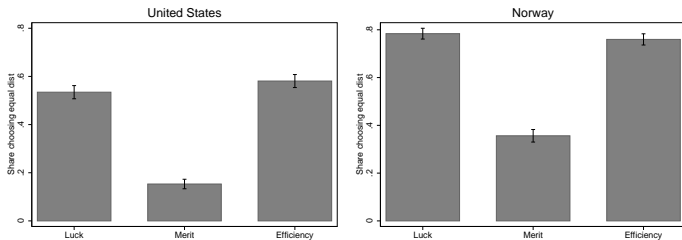
Share implementing equality (Norway): **Luck**
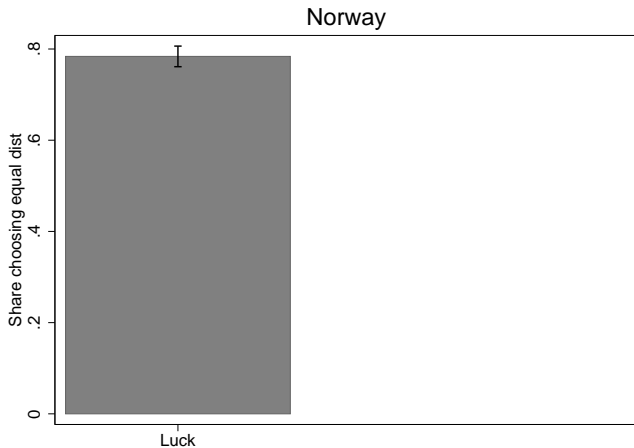
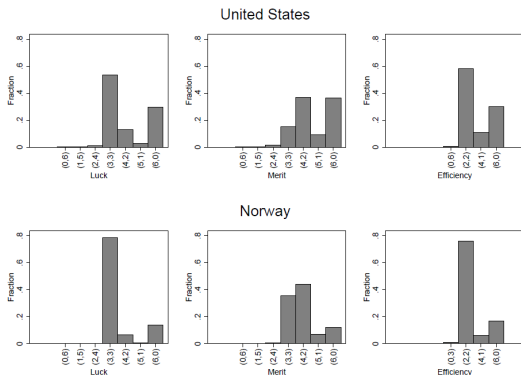# Share implementing equality (Norway): **Luck vs Efficiency**
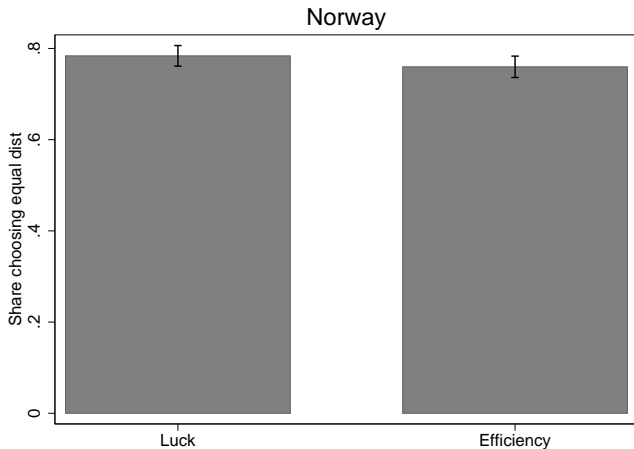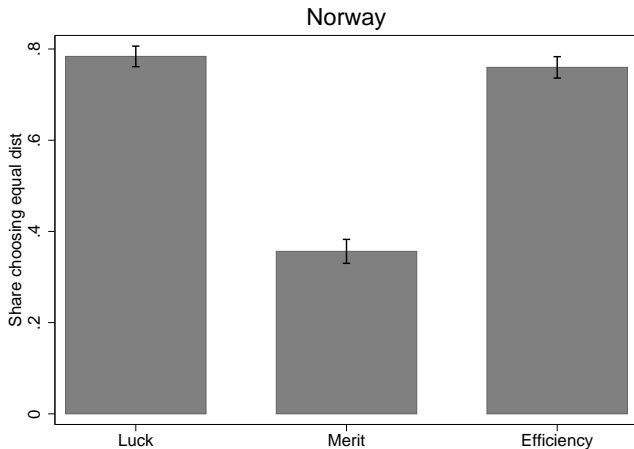
Norway

Share implementing equality: **US vs Norway**

Distribution of choices: Histograms

Figure 2: Distribution of choices

Inequality acceptance

- Inequality implemented by spectator:

$$e = \frac{|x - y|}{x + y}. \tag{5}$$

- Equivalent to the Gini coefficient in this economic environment.

$$e_i = \alpha + \alpha_M M_i + \alpha_E E_i + \delta_M M_i N_i + \delta_E E_i N_i + \delta N_i + \varepsilon_i, \qquad (6)$$

$M_i = 1$ if in merit treatment.

$E_i = 1$ if in efficiency treatment.

$N_i = 1$ if from Norway.

Regression results

	(Coefficient)	(Standard error)
Merit (US)	0.195***	(0.032)
Efficiency (US)	0.011	(0.035)
Merit x Norway	-0.040	(0.041)
Efficiency x Norway	0.038	(0.045)
Norway	-0.196***	(0.031)
lincom:		
Merit (Norway)	0.155***	(0.026)
Efficiency (Norway)	0.049*	(0.029)

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Are Americans more inequality accepting than Norwegians?

Yes – we find systematically more inequality acceptance in the US than in Norway.

- Significantly more inequality implemented in all treatments in the US than in Norway - Americans are more willing than Norwegians to accept inequalities generated in a real world labor market.

Are Americans more meritocratic than Norwegians?

No – the merit treatment effect is not significantly different in the two countries.

- There are not more Americans than Norwegians that accept inequalities due to merit but not inequalities due to luck.

Are Americans more efficiency-seeking than Norwegians?

No – the efficiency treatment effect is not significantly different in the two countries.

- In both countries efficiency considerations seem to play a marginal role, even though the cost of redistribution is huge in our experiment.

What causes inequality acceptance?

- We show causally that **the source of inequality** is of great importance.
  - When the source of inequality is merit instead of luck, inequality acceptance increases significantly in both the US and Norway.

- We do not find systematic evidence for **efficiency considerations** increasing inequality acceptance.
  - A cost of redistribution slightly increases inequality acceptance in Norway but not (statistically significantly so) in the US.
  - May reflect our between-individual design.

- **Main observation**: We find that the source of inequality is much more important than the cost of redistribution in making people accept inequality.
  - The treatment effect difference is huge and highly statistically signficant ($p < 0.01$).

Back to the theoretical framework

- How can we interpret the findings in light of our model

$$V(y; \cdot) = -\frac{\beta}{2}(y - m(j))^2 - c(j)y. \qquad (7)$$

- **Main message**: The difference between the US and Scandinavia is related to differences in fairness view (m). No difference in the relative importance of fairness and efficiency (β); fairness much more important than efficiency in both countries.

- Let us now introduce the following three **fairness types**:
  - **Libertarians:** Accept inequalities due to both luck and merit.
  - **Meritocrats:** Accept some inequality when there are differences in merit, but not inequalities reflecting differences in luck.
  - **Egalitarians:** Find all inequalities unfair.

Fairness views in the experiment

- We can **identify the share of each fairness type** in the experiment:
  - **Libertarians**: By the share of individuals not redistributing in the Luck treatment.
  - **Egalitarians**: By the share of individuals equalizing in the Merit treatment.
  - **Meritocrats**: By the difference in the share of individuals who give more to the one with all the earnings in the Merit treatment and the Luck treatment.

Huge difference in the distribution of fairness types between the US and Norway:

Heterogeneity analysis
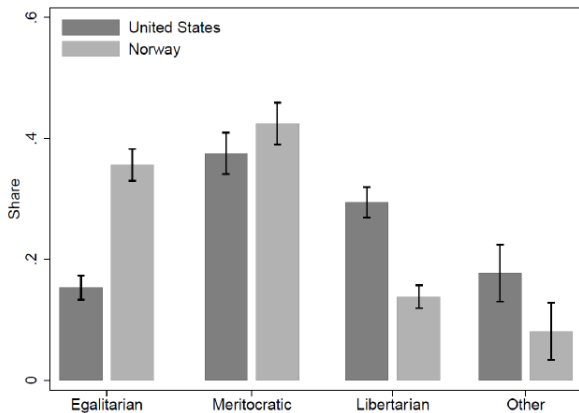
Also specified in the pre-analysis plan.

- Are **conservatives**:

    - Generally accepting more inequalities?

    - Accepting more inequalities if they are caused by differences in merits?

    - Accepting more inequalities if redistribution is costly?

- Is there a **socioeconomic gradient** in social preferences?

- Is there a **gender difference** in social preferences?
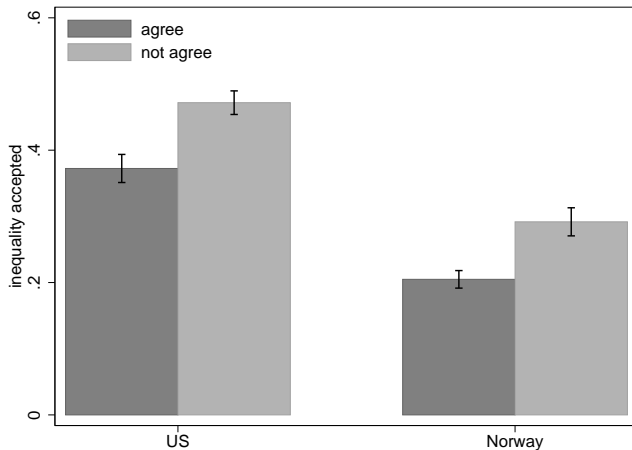
Heterogeneity analysis
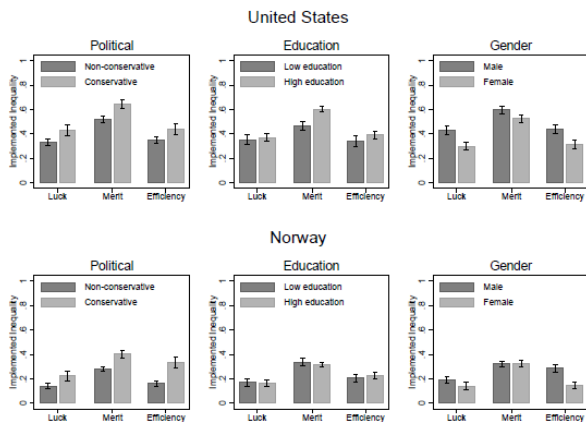
# External validity: Experimental behavior related to inequality acceptance in society?

"A society should aim to equalize incomes" – share that agrees:
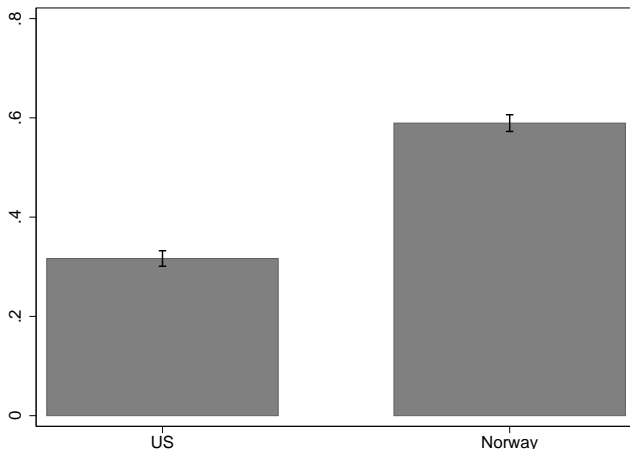
External validity: Inequality acceptance in the experiment strongly associated with inequality acceptance in society

External validity: Inequality levels in the lab very close to inequality levels in society
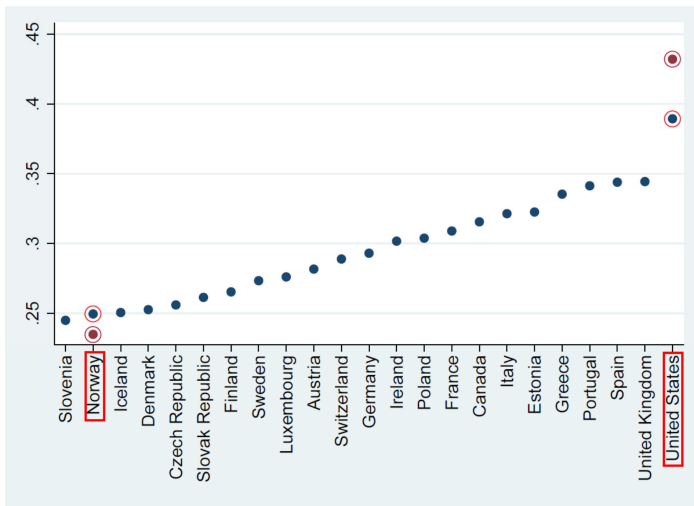
To summarize: The US versus Scandinavia

Main findings I:

- Americans are systematically more inequality accepting than Scandinavians.

- We do not find that Americans are more meritocratic than Scandinavians.
    - We find the same share of meritocrats in the US and Scandinavia, but many more libertarians in the US and many more egalitarians in Scandinavia.

- We do not find that Americans are more efficiency seeking than Scandinavians.

Less support for redistribution in the US than in Scandinavia does not reflect a greater concern for efficiency, but rather differences in fairness views.

To summarize: What leads to inequality acceptance?

Main findings II:

- Merit systematically causes increased inequality acceptance.

- The cost of redistribution does not systematically cause increased inequality acceptance.

Our study suggests that the source of inequality is more important than efficiency considerations for understanding inequality acceptance.

Robustness of main findings – looking at groups in the society (conservatives, males, high income earners)

- **Main findings I:**
  - Inequality acceptance is greater in the US than Norway for all subgroups.
  - There is no subgroup for which merit or efficiency considerations are more important in the US than in Norway.
- **Main findings II:**
  - Merit causes increased inequality acceptance for all subgroups.
  - The cost of redistribution has little effect for most subgroups.

Plan

- Fairness, inequality, and personal responsibility: Understanding inequality acceptance

- **How fair is fair?**

- Second-best fairness

- What is shaping fairness preferences?

- Fairness in action

How fair is fair?

- Self-serving bias in fairness preferences? (JEEA, 2013; PPE, 2016)

- Fair-minded or face saving? (JEEA, 2016)

- Gender bias in fairness preferences? (new paper with Alexander W. Cappelen and Ranveig Falch)

- Irrational fairness? (new paper with Alexander W. Cappelen, Sebastian Fest, and Erik Ø. Sørensen)

Self-serving bias in fairness preferences
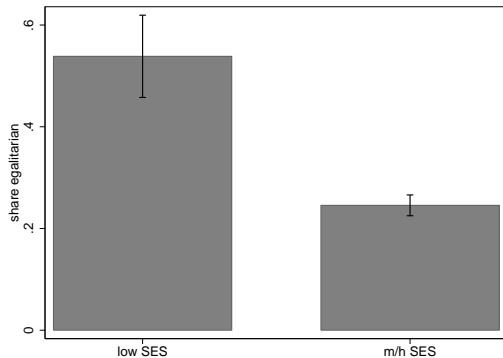
Fair-minded or face-saving?

	Information?	
Recipient	no	yes
Student – not working	0.116	0.114
	(0.037)	(0.034)
Student – working	0.210	0.293
	(0.046)	(0.055)
Client – needy	0.433	0.602
	(0.076)	(0.065)

Note: Standard error in parentheses.

Increasing worry that males are lagging behind in important life outcomes (Author and Wasserman, 2013):

- lag behind females in high school and college attainment.

- .... also concerns about males lagging behind with respect to income (more variance), health, and other well-being measures.

Boys lagging behind

Percent of Adults with Some College Education by Age 35
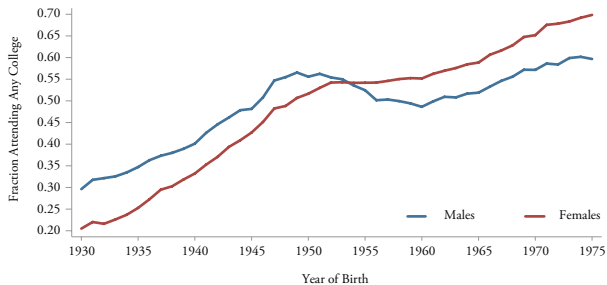
Source: Census IPUMS 1 percent samples for years 1960 and 1970, Census IPUMS 5 percent samples for years 1980, 1990, and 2000 and American Community Survey (ACS) 2010. Figure from Autor and Wasserman (2013).

What can explain these patterns?

- The development of noncognitive skills for boys is more sensitive to parental inputs than that of girls (Bertrand and Pan, 2013).

- Biological differences (e.g. larger variance in IQ for boys, Dykiert, Gale, and Deary, 2009).

- **Our focus:** Does it also reflect a **gender bias in social preferences**, where people find it more acceptable that males fall behind.

Field evidence: Gender discrimination of males

- Gender differentiation in grade setting in US kindergartens and primary schools (Cornwall, Mustard, and Van Parys, 2013) , and in Israeli high schools with female teachers being the driving force (Lavy, 2008).

Related literatures

- **The diverse literature on gender discrimination** (see e.g. Bertrand (2011); Black and Strahan (2001); Castillo, Petrie, Torero, and Vesterlund (2013); Dittrich, Büchner, and Kulesz (2015); Goldin and Rouse (2000); Niederle, Segal, and Vesterlund (2013); Sharma (2015)).

- **The growing literature on fairness preferences** (Almaas, Cappelen, and Tungodden, 2015; Bolton and Ockenfels, 2000; Cappelen, Drange Hole, Sørensen, and Tungodden, 2007; Charness and Rabin, 2002; Engelmann and Strobel, 2004; Fehr, Bernhard, and Rockenbach, 2008; Konow, 2000; Sutter, 2007).

Our approach

We study this question in a controlled experimental environment:

- **Experimental design: Spectators** decide whether to **redistribute earnings** between a pair of **workers** who have conducted a job.

- We study whether spectators are gender biased in their distributive choices; the design rules out many potential drivers of the observed gender discrimination in the field.

Pre-analysis plan

- Describes the main research questions and formulates the main hypotheses to be tested.

  - Two rounds: September/October 2015, February 2016.
  - Posted a pre-analysis before each round.
  - Second round focused only on the main treatments and collected additional data on beliefs and attitudes.

- Describes the design in detail.

- Describes the identification strategy.

- The plans are publicly available and was posted on AEA RCT registry before we received any data.

- The analysis presented today is described in the pre-analysis plans, with a particular focus on one of the two main hypotheses stated in the first-round pre-analysis plan.

Recruitment of spectators

- **Workers** recruited through an international online labor market (mTurk).

- **Spectators** recruited and participating through an international data-collection agency (TNS).
  - Representative sample of the US population (on a set of observable characteristics).

Design: workers

- When recruited, the workers were promised a participation fee of 2 USD and told that they could earn additional money.

- The workers worked on three different assignments, altogether it took them approximately 20 minutes to finish.

- After completing the assignments, they were told how their earnings would be decided.

- We recruited 2072 workers (each worked on 3 assignments giving us 3108 unique pairs of assignments/workers) - the workers were of the same age and from the US.

Design: spectators

- We recruited 3102 US participants who are nationally representative (+ 18 years old) on observable characteristics.
    - First round: 2052 participants.
    - Second round: 1050 participants.

- The participants acted as spectators (Cappelen, Konow, Sørensen, and Tungodden, 2013) and determined whether to redistribute earnings between a pair of workers.

- Between-individual design.

Spectators: Descriptive statistics

	Mean	Male	Female	Median	p10	p90	sd
United States							
Income (USD)	68730	72291	65259	55000	19999	125000	40912
Age	41	41	41	41	23	59	13.2
Eduction shares (age at which the person stopped full-time educ.)							
19 years or younger	0.240	0.212	0.266				
20 years or older	0.644	0.674	0.616				
Students	0.116	0.112	0.118				
Share republican	0.337	0.355	0.321				
Share female	0.512	-	-				
Share with child(ren)	0.384	0.363	0.404				

Treatment: Male less productive

In contrast to traditional survey questions that are about hypothetical situations, we now ask you to make a choice that has **consequences for a real life situation**. A few days ago two workers were recruited via an online labor market to conduct an assignment. They were **both from the US; a man and a woman of the same age**.

They were each paid a participation compensation of 2 USD regardless of what they would end up being paid for the assignment. After completing the assignment, they were told that their **earnings from the assignment would be determined by their productivity. The most productive worker would earn 6 USD for the assignment and the other worker would earn nothing for the assignment. They were not informed about who was the most productive worker.** However, they were told that a third person would be informed about the assignment and who was the most productive worker. They were also told that this third person would be given the opportunity to redistribute the earnings and thus determine how much they were paid for the assignment.

You are the third person and we now want you to choose whether to redistribute the earnings for the assignment between the two workers. Your decision is completely anonymous. The workers will receive the payment that you choose for the assignment within a few days, but will not receive any further information.

Treatment: Male less productive

The woman was more productive and earned 6 USD for the assignment. **The man was less productive** and earned nothing for the assignment.

Please state which of the following alternatives you choose:

I do not redistribute:

- The **more productive worker** is paid 6 USD and the **less productive worker** is paid 0 USD.

I do redistribute:

- The more productive worker is paid 5 USD and the less productive worker is paid 1 USD.

- The more productive worker is paid 4 USD and the less productive worker is paid 2 USD.

- The more productive worker is paid 3 USD and the less productive worker is paid 3 USD.

- The more productive worker is paid 2 USD and the less productive worker is paid 4 USD.

- The more productive worker is paid 1 USD and the less productive worker is paid

Important design choices

- **Real choice**: The decision made by a spectator was matched with a unique pair of workers.

- **Between-individual design**: Spectators only considered one distributive situation, which reduced the likelihood of an experimenter demand effect.
  - Main focus: Randomly vary whether the male or the female is less productive (additional treatments varying source of inequality (luck/merit) and gender composition; more later).

- **Same pre-redistribution earnings in all situations**: All spectators faced the pre-redistribution earnings of (6 USD, 0 USD).

Theoretical framework

- We provide a simple social preference model to guide the interpretation of the results.

- We assume that the spectators care about **fairness**, but may have a general **gender bias** in the preferences:
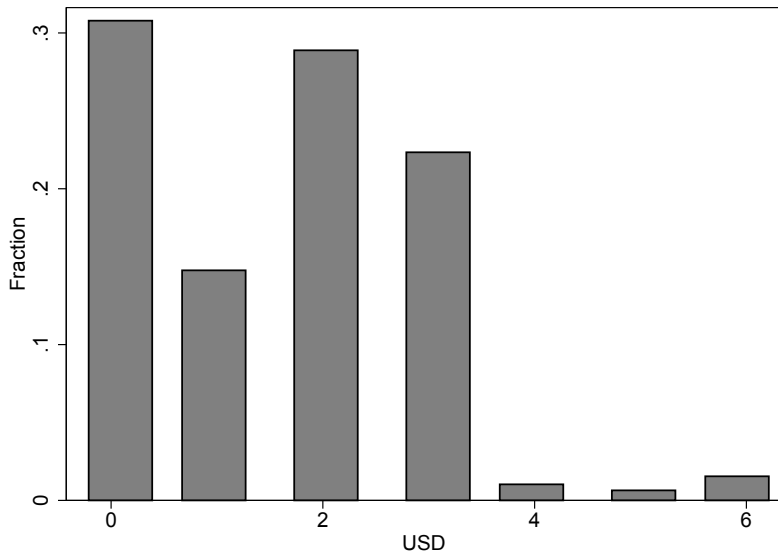
$$V(y; \cdot) = -(y - m(j))^2 - \beta y \qquad (8)$$

- y is income given to the male worker; $m(j)$ is what the spectator perceives as the fair share to the male worker; $\beta > 0$ is the strength of the gender bias.
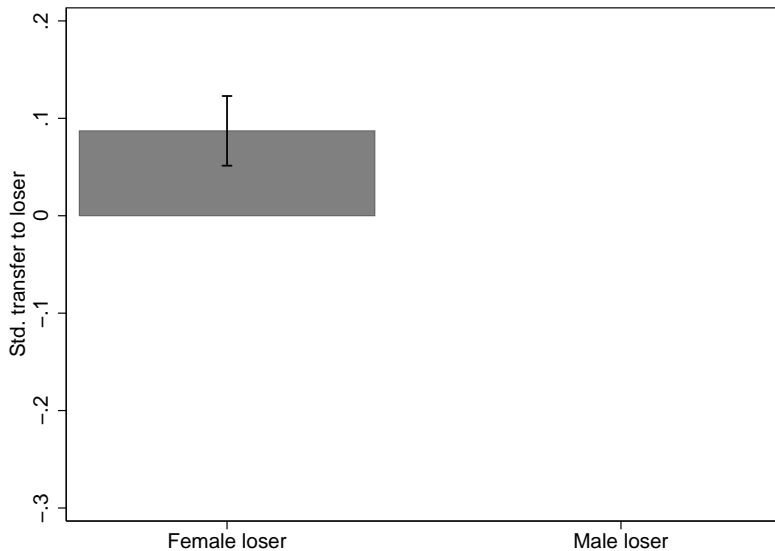
Optimal behavior (interior solution)

$$y = m(j) - \frac{\beta}{2} \tag{9}$$

- Gender biased behavior may reflect that **gender matters when considering what is fair** or a **general gender bias in the preferences**.
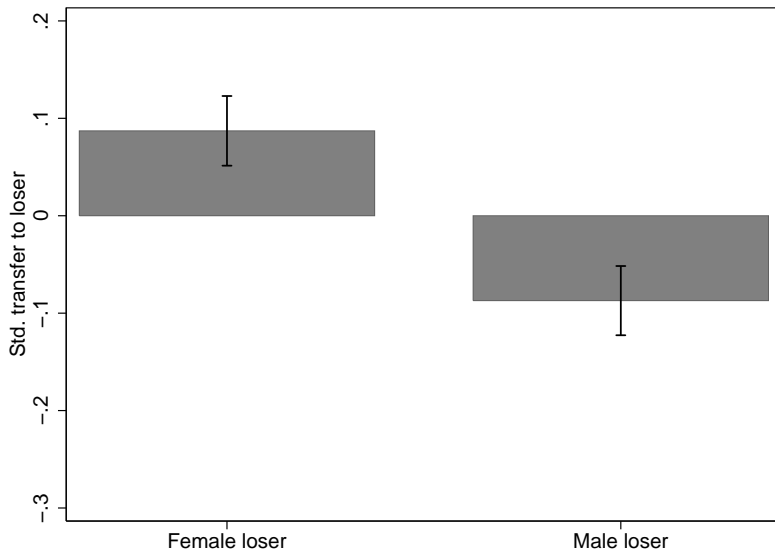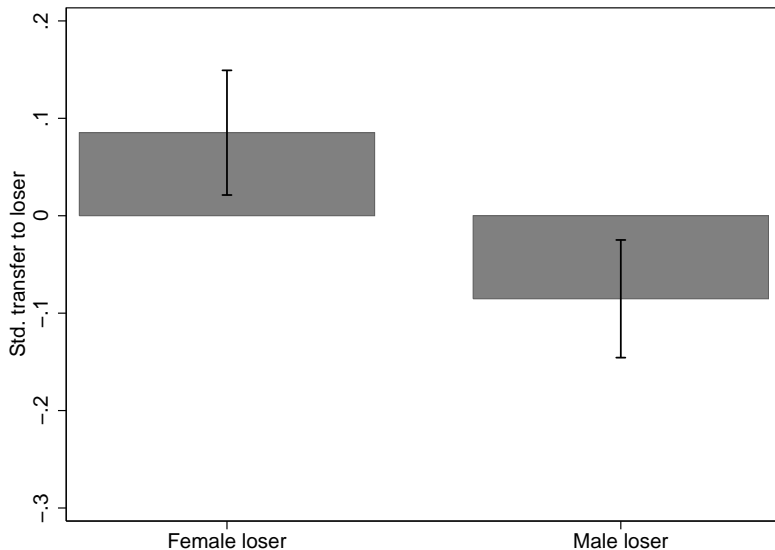
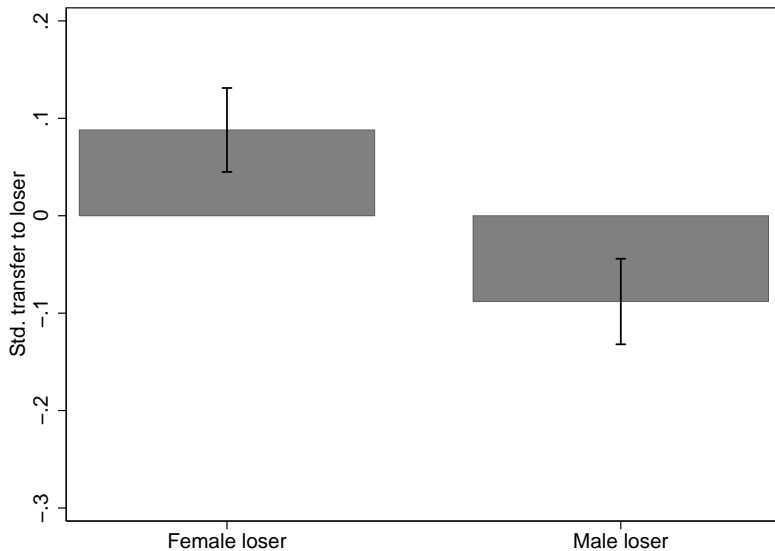# Transfer to loser

Transfer to loser: Mixed-sex merit

Transfer to loser: Mixed-sex merit

Transfer to loser: Mixed-sex merit round 1

Transfer to loser: Mixed-sex merit round 2

Transfer to loser (less productive)

|	Mixed-sex Amount to loser (std)		Mixed-sex Nothing to loser	
	Merit	Merit	Merit	Merit
Male loser	-0.174***	-0.173***	0.073***	0.073***
	(0.050)	(0.050)	(0.024)	(0.024)
Male		0.078		-0.011
		(0.050)		(0.024)
Low age		-0.005		-0.000
		(0.051)		(0.024)
Republican		-0.173***		0.058**
		(0.054)		(0.026)
Low income		-0.011		0.009
		(0.052)		(0.025)
Constant	0.066	0.092	0.335***	0.318***
	(0.051)	(0.068)	(0.024)	(0.033)
Observations	1564	1564	1564	1564
R^2	0.008	0.016	0.006	0.010

What can explain this gender bias?

- Additional treatments.

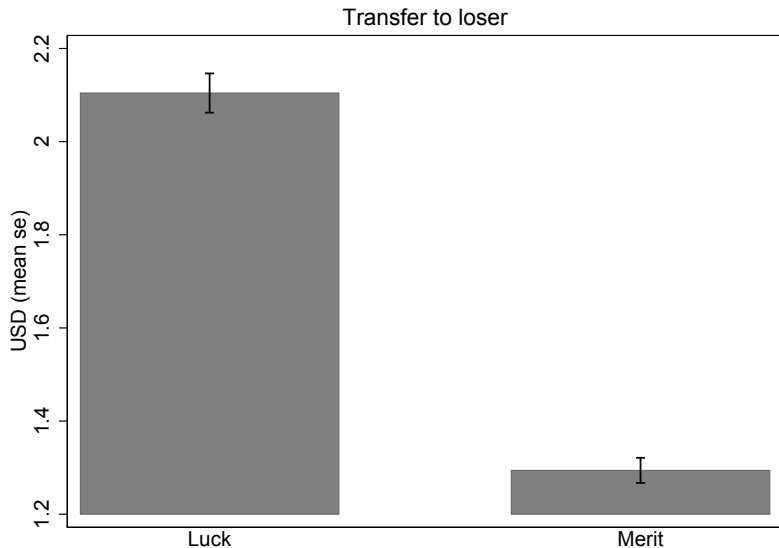- Beliefs and attitudes.

- Heterogeneity analysis.

General gender bias in preferences?

- We should then also see the same difference when the source of inequality is luck.
  - Could potentially also reflect that women are considered more needy than males.

Transfer to loser: Luck

Transfer to loser

USD (mean se)
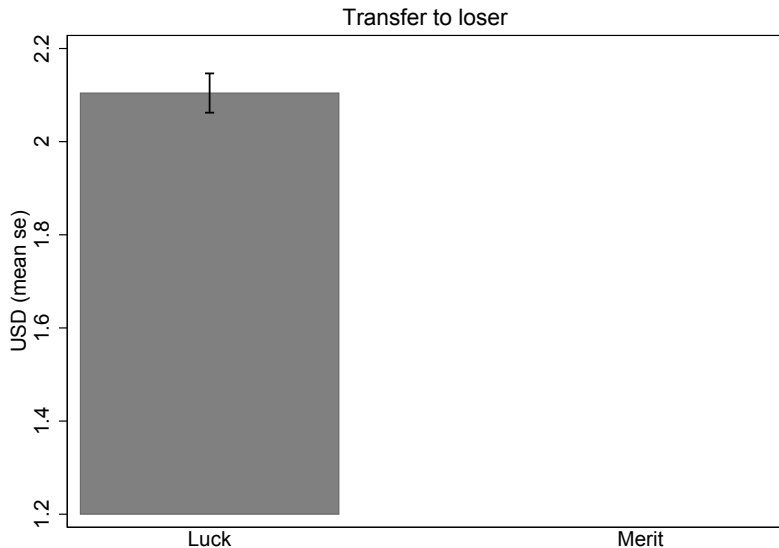
Luck   Merit

Transfer to loser: Luck and merit

Transfer to loser

Transfer to loser (std), luck.

	Mixed-sex	
	Luck	
Male loser	-0.033	-0.043
	(0.088)	(0.089)
Male		-0.108
		(0.089)
Low age		-0.108
		(0.089)
Republican		-0.140
		(0.094)
Low income		-0.027
		(0.092)
Constant	0.017	0.184*
	(0.063)	(0.104)
Observations	512	512
R^2	0.000	0.010

Spectator preferences sensitive to the worker preferences?

- Could be that the spectators took into account what they believed to be the fairness preferences of the loser - fairness preferences might differ between males and females.

- Should observe different behavior in male/female single-sex environments.

- Also a main focus in the initial pre-analysis plan.

Transfer to loser (std), luck and single-sex.

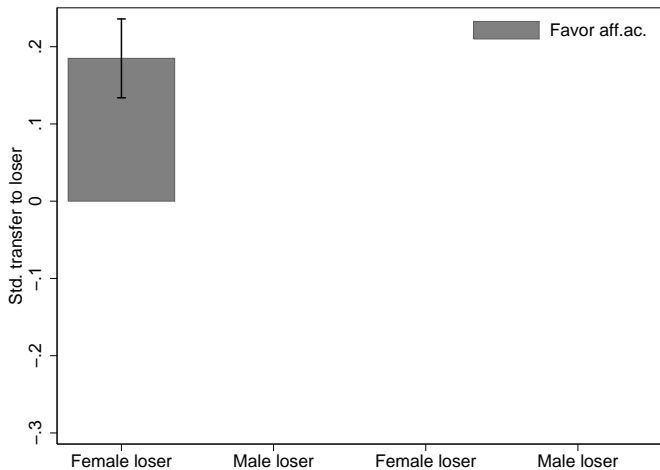| | Mixed-sex | | Single-sex | | | |
	Luck		Merit		Luck	
Male loser	-0.033	-0.043	-0.040	-0.031	0.087	0.091
	(0.088)	(0.089)	(0.088)	(0.089)	(0.088)	(0.088)
Male		-0.108		-0.126		-0.020
		(0.089)		(0.088)		(0.088)
Low age		-0.108		0.113		-0.125
		(0.089)		(0.088)		(0.089)
Republican		-0.140		-0.181*		-0.259***
		(0.094)		(0.095)		(0.092)
Low income		-0.027		0.035		-0.033
		(0.092)		(0.092)		(0.091)
Constant	0.017	0.184*	0.020	0.072	-0.044	0.136
	(0.063)	(0.104)	(0.062)	(0.100)	(0.063)	(0.102)
Observations	512	512	513	513	513	513
R^2	0.000	0.010	0.000	0.017	0.002	0.020

Preliminary conclusion

- The gender bias seems to be specific for the mixed-sex merit environment.

- Different factors may make spectators consider it fair to give less to a male lesser.
    - May believe that it is more likely that a male loser has exercised low effort (meritocratic fairness view with statistical discrimination).
    - May consider it important to promote females that succeed (affirmative action).
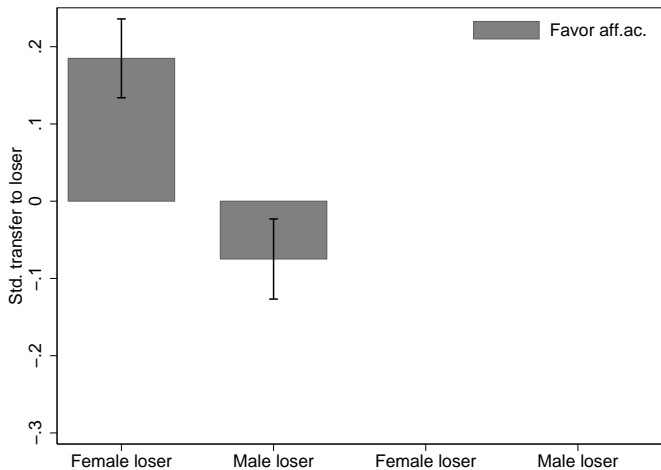
Beliefs and attitudes

- Only asked in the second round, after they had made their distributive choice.
  - General questions to minimize the likelihood of them being affected by treatment.
  - Answers not correlated with treatment.

- **Beliefs about ability**: US 8th graders were recently tested in mathematics and reading. How do you think male students performed relative to female students?

- **Affirmative action**: Do you generally favor or oppose affirmative action programs for women (generally favor/generally oppose)?
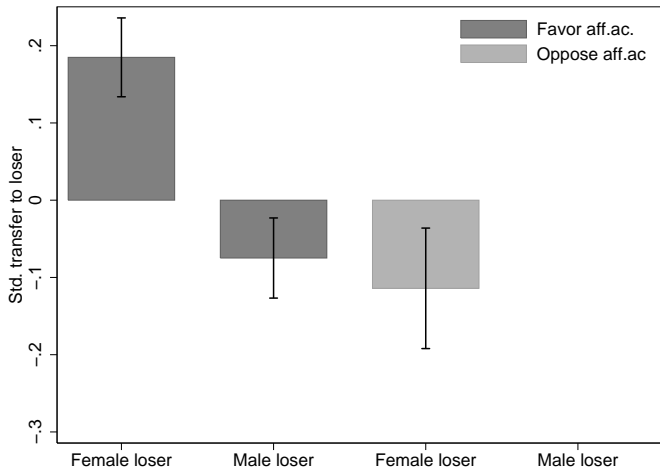
Transfer to loser: Mixed-sex merit by support for affirmative action
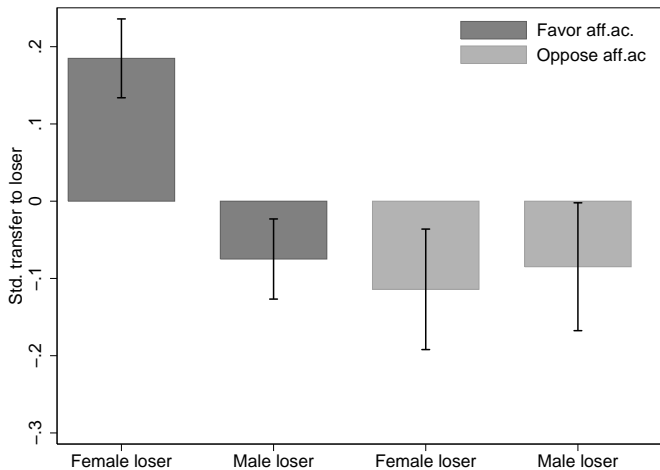
Transfer to loser: Mixed-sex merit by support for affirmative action

Transfer to loser: Mixed-sex merit by support for affirmative action
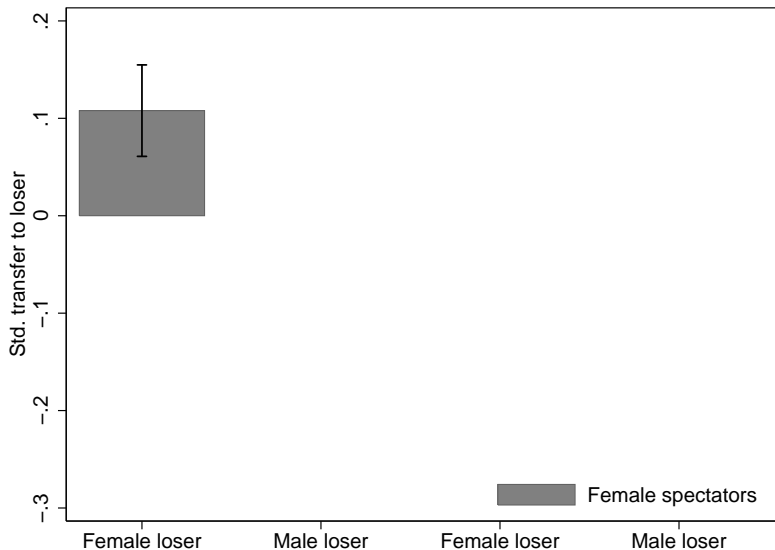
Transfer to loser: Mixed-sex merit by support for affirmative action

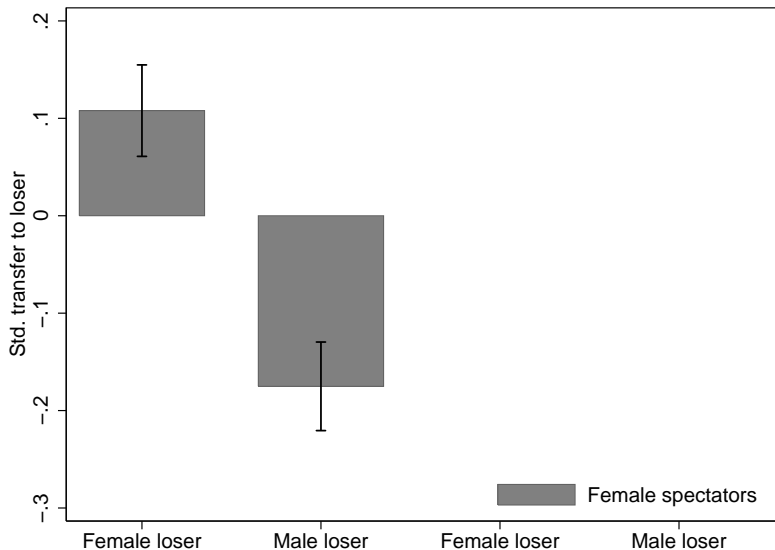|	Mixed-sex merit						
	Aff.ac.	Aff.ac.	Aff.ac.	Overrate	Overrate	Overrate	All
Male loser	-0.175***	0.029	0.032	-0.174***	-0.156**	-0.163**	0.049
	(0.061)	(0.113)	(0.113)	(0.062)	(0.077)	(0.077)	(0.123)
Aff.ac.*Male loser		-0.289**	-0.294**				-0.295**
		(0.135)	(0.135)				(0.135)
Overrate*Male loser					-0.050	-0.030	-0.036
					(0.128)	(0.129)	(0.128)
Aff.ac.	0.154**	0.299***	0.285***				0.284***
	(0.068)	(0.096)	(0.096)				(0.096)
Overrate (math)				0.076	0.100	0.106	0.108
				(0.064)	(0.090)	(0.090)	(0.090)
Constant	-0.011	-0.114	-0.011	0.070	0.061	0.150**	-0.053
	(0.065)	(0.081)	(0.095)	(0.050)	(0.055)	(0.075)	(0.101)
Lincom	-	-0.260***	-0.262***	-	-0.206**	-0.193*	-
(Male loser+interaction)	-	(0.073)	(0.073)	-	(0.103)	(0.103)	-
Controls	-	-	X	-	-	X	X
Observations	1050	1050	1050	1050	1050	1050	1050
R^2	0.013	0.017	0.022	0.009	0.009	0.016	0.024

Heterogeneity analysis

The pre-analysis plan specifies:

- **Political orientation:** Republican, non-republican.
- **Gender**.
- **Age:** Below or above median age in the representative US sample (18+ years).
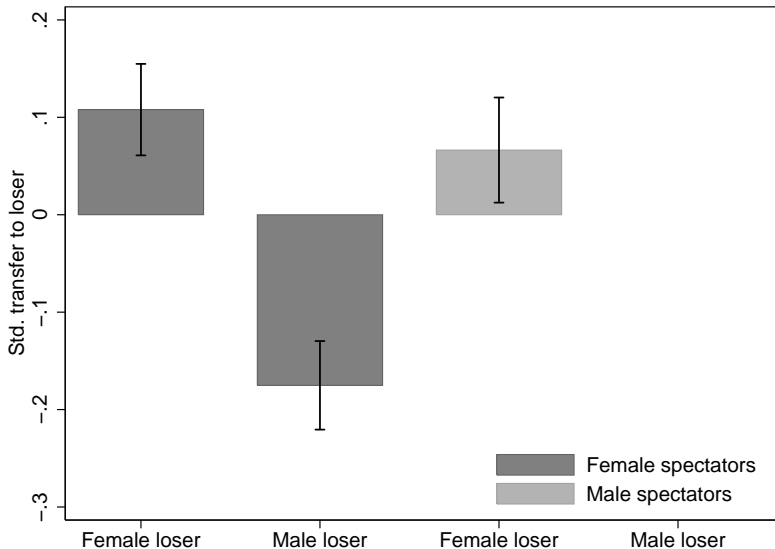- **Income:** Below and above the median in the US.

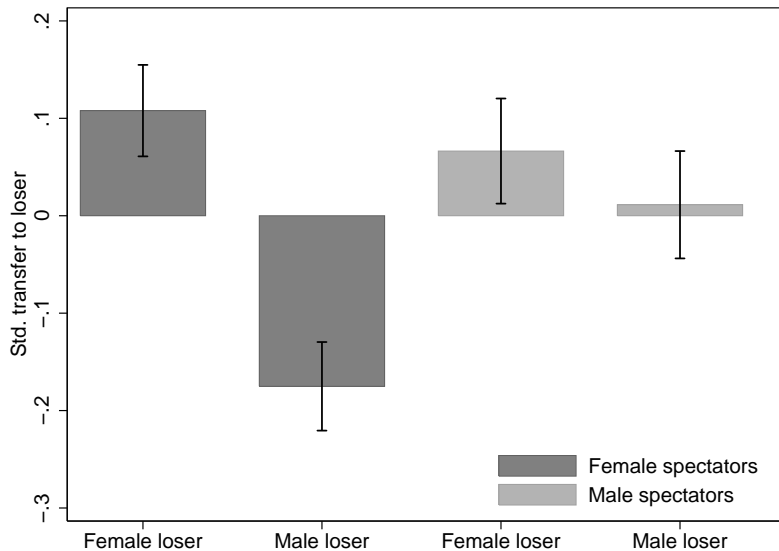# Transfer to loser: Mixed-sex merit by gender

Transfer to loser: Mixed-sex merit by gender

Transfer to loser: Mixed-sex merit by gender

Transfer to loser: Mixed-sex merit by gender

Heterogeneity analysis: Transfer to loser (std)

	Mixed-sex merit				
	Gender	Age	Politics	Income	All
Male loser	-0.284***	-0.212***	-0.169***	-0.227***	-0.376***
	(0.070)	(0.071)	(0.061)	(0.065)	(0.105)
Male*Male loser	0.227**				0.229**
	(0.100)				(0.101)
Low age*Male loser		0.078			0.071
		(0.101)			(0.101)
Republican*Male loser			-0.012		0.004
			(0.107)		(0.109)
Low income*Male loser				0.133	0.135
				(0.102)	(0.103)
Constant	0.169***	0.134**	0.110*	0.140**	0.201**
	(0.064)	(0.065)	(0.062)	(0.063)	(0.085)
Lincom (Male loser+interaction)	-0.056	-0.134*	-0.181**	-0.095	-
	(0.072)	(0.071)	(0.088)	(0.079)	-
Controls	X	X	X	X	X
Observations	1564	1564	1564	1564	1564
R^2	0.019	0.016	0.015	0.016	0.020

Heterogeneity analysis with affirmative action: Transfer to loser (std)

	Mixed-sex merit				
	Gender and Aff.ac.	Age	Politics	Income	All
Male loser	-0.049	-0.212***	-0.169***	-0.227***	-0.063
	(0.133)	(0.071)	(0.061)	(0.065)	(0.164)
Male*Male loser	0.143				0.144
	(0.123)				(0.123)
Aff.ac.*Male loser	-0.277**				-0.316**
	(0.135)				(0.139)
Low age*Male loser		0.078			-0.046
		(0.101)			(0.124)
Republican*Male loser			-0.012		-0.075
			(0.107)		(0.134)
Low income*Male loser				0.133	0.211*
				(0.102)	(0.126)
Constant	-0.027	0.134**	0.110*	0.140**	-0.018
	(0.106)	(0.065)	(0.062)	(0.063)	(0.117)
Lincom (Male loser+interaction)	0.094	-0.134*	-0.181**	-0.095	-
	(0.125)	(0.071)	(0.088)	(0.079)	-
Lincom (Male loser+Aff.ac.*Male loser)	-0.326***	-	-	-	-
	(0.092)	-	-	-	-
Controls	X	X	X	X	X
Observations	1050	1564	1564	1564	1050
R^2	0.026	0.016	0.015	0.016	0.029

Concluding remarks

- We have shown that there is a significant gender bias against male losers in a controlled experimental environment - nationally representative sample of participants.

- The gender bias seems largely to reflect some kind of affirmative action on behalf of women.

- Patterns similar to what has been observed in the field; may shed light on the boys crisis and more generally on why males lag behind in a number of important domains.
  - constitute a large majority of the prison population (in US, 93%)
  - 79% of global murder victims,
  - 66% of global deaths from suicide.

Irrational fairness: Do we assign too much importance to choice?
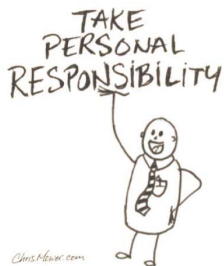
Choice and personal responsibility: What is a morally relevant choice?

- Studies experimentally distributive situations that violate what are commonly viewed as minimal conditions for a morally relevant choice (Vallentyne, 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 causal responsibility**), or
  - the person could only have avoided the outcome at unreasonably large cost (**no acceptable alternative**).
- In both cases, the participants do not face a real choice. But are they still held responsible?

Experimental approach

- Study this question by the following two treatment manipulations:

    - **Nominal choice**: The other alternative in the choice set is "identical" - no causal responsibility.
    - **Forced choice**: The other alternatives in the choice set is clearly worse - no acceptable alternative.

- Compare these treatments to a benchmark where the inequality by brute luck and the participants do not make any choices.

Experimental design

- The experiment had three phases: a **work** phase, an **earnings** phase and a **distribution** phase.
- After the experiment: Participants did a cognitive reflection test and answered questions about age, gender, political voting, and attitudes towards income redistribution in society.
- The experiment had three treatments: **Base**, **Nominal Choice**, and **Forced Choice**.
- Spectator design.

Sample and procedures

- Recruited 422 students from the University of Bergen and NHH Norwegian School of Economics.
- Between-design. Participants randomly assigned to treatment *within each session*.
- Double blind design and payments made in cash at the end of the experiment.
  - Average payments 475 NOK (approximately 85 USD), including a 100 NOK show-up fee.

Sample summary and treatment balance

Treatment	Age Mean (se)	Female Mean (se)	CRT Mean (se)	PA Mean (se)	N
1:Base	22.8 (0.27)	0.44 (0.04)	1.6 (0.09)	0.54 (0.04)	145
2:Nominal choice	22.7 (0.26)	0.47 (0.04)	1.6 (0.10)	0.58 (0.04)	140
3:Forced choice	22.5 (0.25)	0.47 (0.04)	1.8 (0.09)	0.50 (0.04)	137
All	22.7 (0.15)	0.46 (0.02)	1.6 (0.05)	0.54 (0.02)	422

Base treatment - work phase

- In the work phase, the participants did a real effort task for 30 minutes.
  - Descrambled English sentences (IS SALTY SKY THE BLUE).
  - No production requirement, only asked to work continuously on the task.
  - Not informed that they would be paid for the work.

Base treatment - earnings phase

- In the earnings phase, the participants were informed that they would be paid for the work they had done and that their earnings would be determined by a lottery.

  - *"Your payment will be determined by a lottery in which you with equal probability earn either 800 NOK or 0 NOK. In the lottery, a ball will be randomly drawn from an urn containing an equal number of yellow and green balls. If a yellow ball is drawn, you earn 800 NOK and if a green ball is drawn, you earn 0 NOK."*

- Importantly, participants were not asked to make any *choices* in the earnings phase.

- Participants were told that there also would be a distribution phase and that they would get more information about this later in the experiment.

Base treatment - distribution phase

- In the distribution phase, two participants, a winner and a loser, were anonymously paired.
- A third participant, a *spectator*, was given the opportunity to transfer any amount of the winning participant's 800 NOK to the loser.
  - Spectators were told that their decision could determine the income from the experiment for the two participants.
  - Spectators took part in the same treatment, but did not get any information about their own earnings and final income before they made their decision as spectator.

Base treatment - main idea

- Spectators have to evaluate a situation where the pre-redistribution inequality in earnings *only* reflects differences in *brute luck*.

- We expected a large share of the spectators to find this inequality *unfair*, and thus to redistribute money from the lucky participant to the unlucky participant.

Treatment design - main features

- The treatments *only* differ in how the earnings are determined.
  - *Base treatment*: participants make *no choices* and any inequality in earnings is a result of brute luck.
  - *Nominal Choice treatment*: introduce a *nominal choice* in the earnings phase.
  - *Forced Choice treatment*: introduce a *forced choice* in the earnings phase.
- Does the introduction of a nominal or forced choice change the evaluation of the earnings inequality between the lucky and unlucky participant?

Nominal Choice treatment

- In the Nominal Choice treatment the participants were told that their earnings would be determined by a lottery and then asked to choose between two identical lotteries.
    - *"We will now ask you to choose between two colors, yellow and green. Your choice will determine the outcome of a lottery in which you with equal probability earn either 800 NOK or 0 NOK. In the lottery, a ball will be randomly drawn from an urn containing an equal number of yellow and green balls. If you choose the color of the ball that is drawn, you will earn 800 NOK, if you choose the other color, you earn 0 NOK.".*

- Importantly, the two alternatives, yellow and green, are identical in the sense that the distribution of outcomes is the same.

- 69 participants chose a yellow ball and the remaining 71 a green ball.

Forced Choice treatment

- In the Forced Choice treatment, the participants could choose between a lottery (identical to the lottery in the other treatments) and a fixed payment of 25 NOK.

    - *"You can choose between two different forms of payments. You can either choose to earn 25 NOK or let your earnings be determined by a lottery in which you with equal probability earn either 800 NOK or 0 NOK. In the lottery, a ball will be randomly drawn from an urn containing an equal number of yellow and green balls. If a yellow ball is drawn, you earn 800 NOK and if a green ball is drawn, you earn 0 NOK"*

- The expected value of the lottery was 16 *times higher* than the value of the fixed payment.

- 133 chose the lottery, 4 participants chose the fixed payment.

Does the introduction of a nominal or forced choice make inequality between the participants more acceptable?

- In all treatments, the spectators face an earnings distribution of $(0, 800)$; 0 NOK to the unlucky participant and 800 NOK to the lucky participant.
- In all treatments, the earnings inequality reflects de facto a difference in luck.
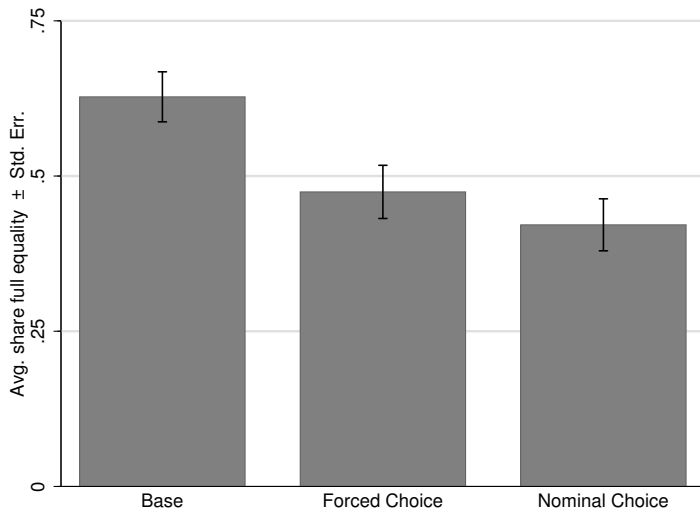- Does it still matter that the participants have exercised a nominal or forced choice in two of the treatments?
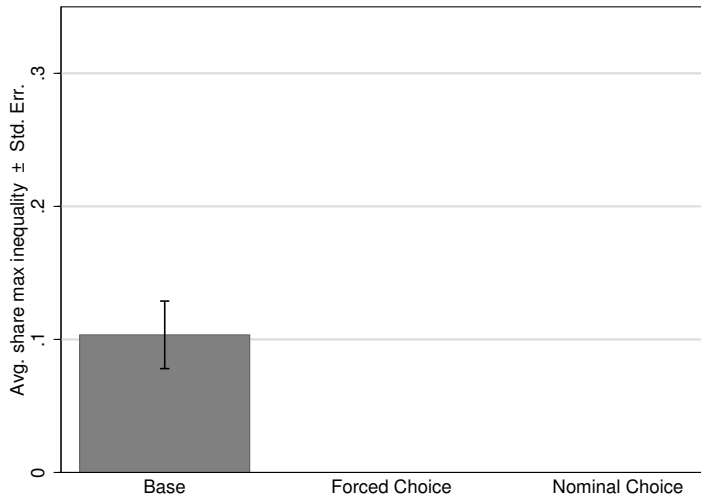
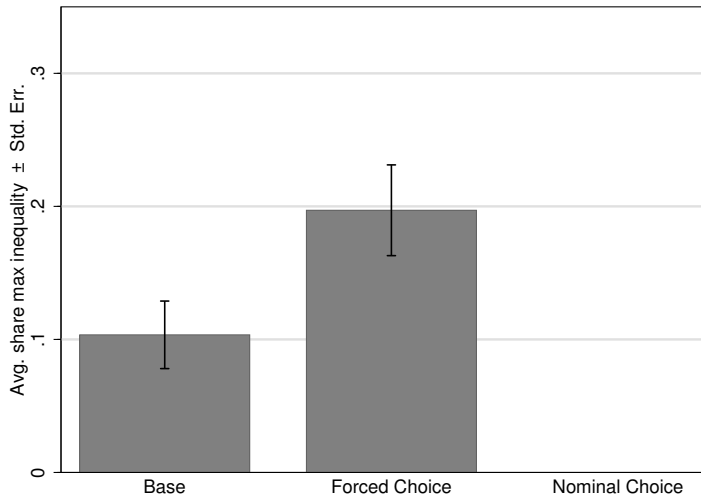# Share implementing full equality
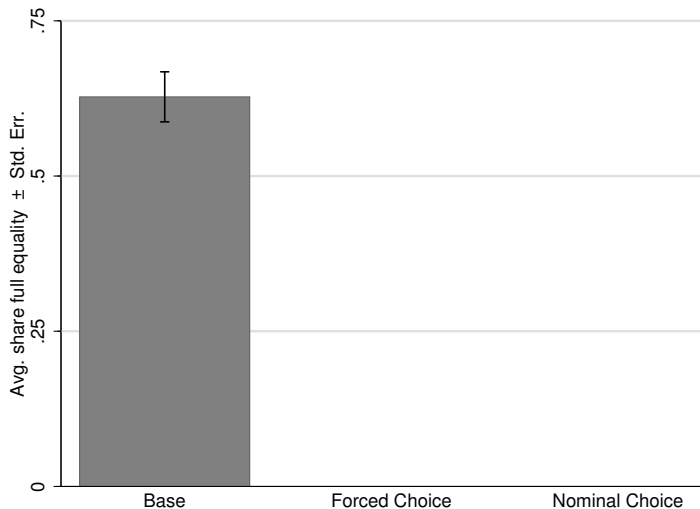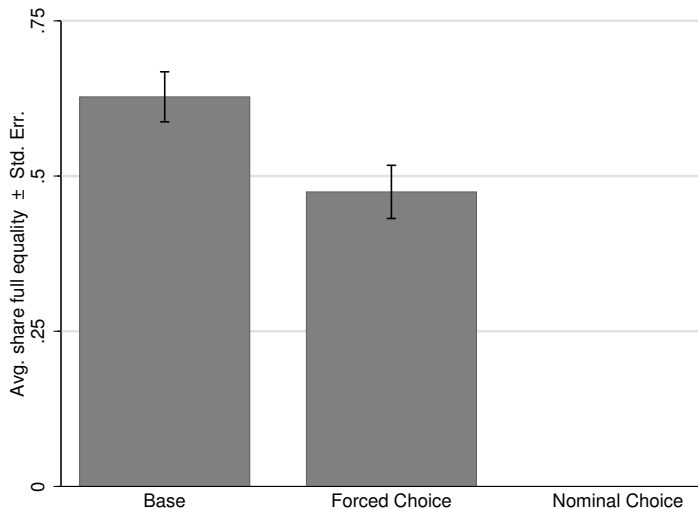
Share implementing full equality

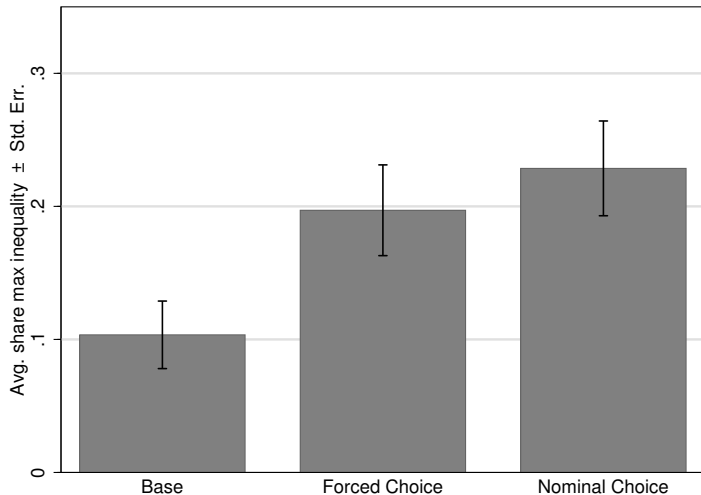# Share implementing full equality

Share implementing max inequality

Share implementing max inequality

# Share implementing max inequality

Inequality

To provide an aggregate picture of the treatment differences, we measure the inequality chosen by the spectator in the following way:
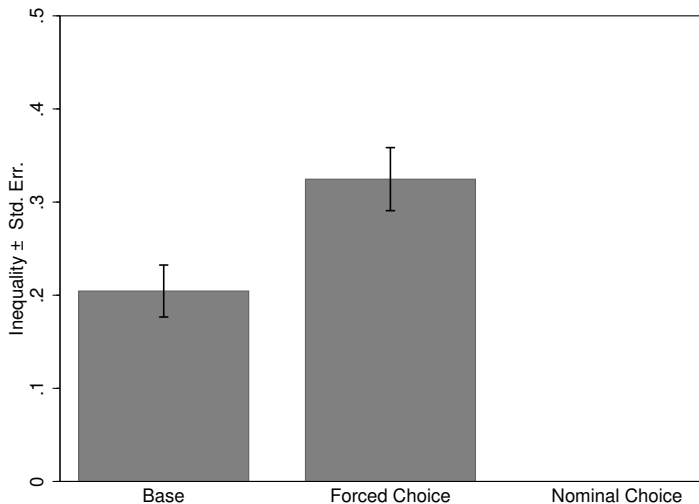
$$\text{Inequality} = \frac{|\text{Income Person } A - \text{Income Person } B|}{\text{Total Income}}$$

If the spectator does not change the distribution, the inequality measure equals 1. If the spectator transfers 400 NOK, then the inequality measure equals 0.
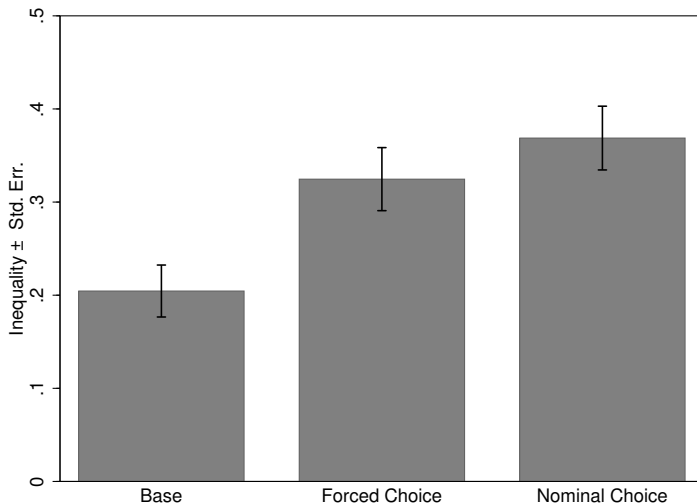
Treatment effects on aggregate inequality
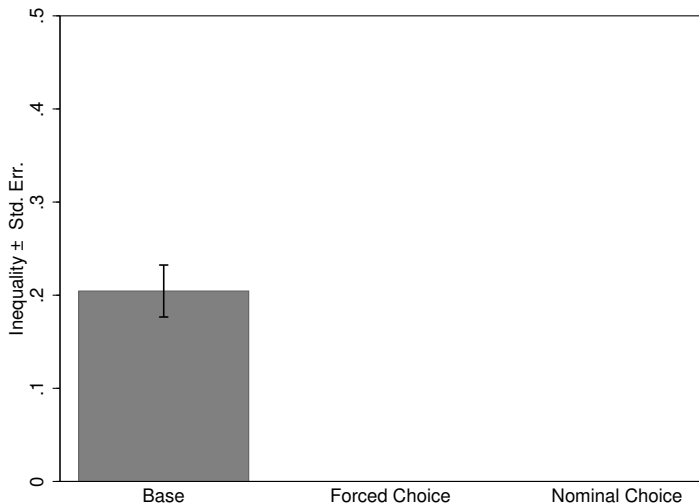
Treatment effects on aggregate inequality

Treatment effects on aggregate inequality

Treatment effects

	(1)	(2)
Nominal choice	0.164***	0.166***
	(0.044)	(0.046)
Forced choice	0.120***	0.129***
	(0.044)	(0.044)
Age		0.005
		(0.006)
Female		-0.121***
		(0.040)
CRT		0.004
		(0.017)
PA		0.048
		(0.037)
Constant	0.204***	0.122
	(0.028)	(0.149)
Observations	422	422
R^2	0.033	0.066

Note: Robust standard errors in parentheses ($*: p < 0.1$, $**: p < 0.05$, $***: p < 0.01$).

Main finding: Huge effects of introducing a nominal or forced choice!

- Spectators on average eliminate 80 percent of the inequalities in earnings when inequalities are a result of brute luck and when there is no exercise of choice.
    - Introducing a *forced choice* results in an increase in inequality by 60 percent relative to the base treatment.
    - Introducing a *nominal choice* results in an increase in inequality by 80 percent relative to the base treatment.

Is the treatment effect related to political preferences?

- Consider whether the treatment effects is driven by the participants who voted for the liberal-right parties.
- Collapse the two choice treatments, but same result with separate interaction effects.

Heterogenous treatment effects - Political preferences

	(1)	(2)
Choice	0.052	0.045
	(0.056)	(0.056)
PA	-0.042	-0.076
	(0.057)	(0.058)
PA $\times$ Choice	0.168**	0.191**
	(0.074)	(0.074)
Constant	0.227***	0.197
	(0.044)	(0.148)
Additional controls	no	yes
Observations	422	422
R^2	0.049	0.078

Note: Robust standard errors in parentheses ($*: p < 0.1$, $**: p < 0.05$, $***: p < 0.01$).

Main findings

- Our results show that people assign too much importance to choice and personal responsibility.

- Closely related to political preferences, which suggests that these ideas are used heuristically in moral reasoning.

- A possible tension between the liberal ideal that people should be given the freedom to choose and the fairness ideal that inequalities due to luck should be eliminated.

- Note: We considered over-attribution of responsibility among spectators, thus there is no self-serving bias involved in the choices. Probably of great importance if we did a similar study with stakeholders.

Plan

- Fairness, inequality, and personal responsibility: Understanding inequality acceptance

- How fair is fair?

- **Second-best fairness**

- What is shaping fairness preferences?

- Fairness in action

Second-best fairness: False positives versus false negatives (new working paper, with Alexander W. Cappelen and Cornelius Cappelen)

- In important distributive situations it is difficult to distinguish between those who are *deserving* and those who are *undeserving*.
- Two types of mistakes:
    - **false positives**: give to someone who is not deserving
    - **false negatives**: not give to someone who is deserving
- An important question is how people handle the trade-off between these two types of mistakes.

Illustrations

- The trade-off between false positives and false negatives is fundamental in the design of welfare policies, in particular when deciding on eligibility criteria and documentation requirements.
  - Unemployment benefits
  - Social welfare
  - Disability pensions
- The trade-off is also present in many other policy areas, including the justice system and immigration.

A new dimension of social preferences

- Even if people agree on who is deserving and who is undeserving, people may disagree on how to make the trade-off between false positives and false negatives.

- A dimension of social preferences not yet studied in behavioral and experimental economics.
  - Some studies on the effect of mistakes when participants punish/reward in public goods games (Magnussen et al 2014).

- How do people make trade-offs between false positives and false negatives in distributive choices?

Heterogeneity

- Are right-wing voters more concerned with avoiding false positives than left-wing voters?

- Are Americans more concerned with avoiding false positives than people from a more egalitarian country, Norway?

Main features of the design

- **Experimental design: Spectators** decide how to distribute money between two groups of **workers**, where some workers in one of the groups have falsely reported to have worked.

- **Workers** recruited through an international online labor market (mturk).

- **Spectators** recruited through an international data-collection agency (Research Now/Norstat).

Design: workers

- We recruited 2000 workers from Amazon Mechanical Turk (mTurk) who were promised a participation fee and told that they could earn additional money.
- The workers were given the opportunity to complete an assignment requiring them to work continuously for a certain period of time.
- Alternatively, they could falsely report that they had done the assignment without actually having done so.

Design: workers

We now want you to make a choice between the two following alternatives:

A. *Do a 15 minutes word unscrambling assignment. Your performance will not be measured as there is no right or wrong answer, but we expect you to work continuously on the assignment.*

B. *Report to have done the 15 minutes word unscrambling assignment without doing it. Your fixed participation fee does not depend on whether you choose A or B.*

Your bonus payment may depend on whether you choose A or B. Your bonus payment is determined by a randomly selected third person. This person will have a sum of money to distribute among you and other participants in this study, and will not be able to distinguish between some of those who have done the assignment and those who have only reported to have done the assignment. You may therefore get paid a bonus both if you choose A and if you choose B.

Below we want you to indicate your choice.

Design: spectators

- We recruited 2000 participants who are nationally representative (+ 18 years old, 1000 from USA and 1000 from Norway) on observable characteristics to act as spectators.
- The spectators determined the distribution of 16 USD between two groups of four workers: in the first group all workers had done the assignment, but in the second group a number of workers had falsely reported to have done the assignment.
- Two alternative distributions:
    - To give all the money to the first group, in which case the workers in the first group each received 4 USD and the workers in the other group received nothing.
    - To distribute the money equally between the two groups, in which case all eight workers received 2 USD.

Design: treatments

- Five treatments, between subject design, where we vary the number of cheaters in the second group from zero to four.
    - No uncertainty about the number of cheaters.
    - Identical distributive situations in both countries.
- The design identifies the importance attached to giving to those who are deserving relative to not giving to those who are undeserving.

The zero cheaters treatment

In contrast to traditional survey questions that concern hypothetical situations, we now ask you to make a choice that could have consequences for a real life situation.

A few days ago, we recruited people via an international online market place and gave them the opportunity to complete an assignment. The assignment was a simple task where the participants were required to work continuously for a certain period of time.

Everyone also got the opportunity to falsely report that they had done the assignment without actually having done it. Those who made this choice did not do any other work.

We want you to decide how to distribute 16 USD between 8 of the recruited individuals. Your decision may be selected to determine the payments to the 8 individuals; it thus could have real life consequences. All of the 8 individuals did the assignment, and no one falsely reported to have done the assignment. You can choose between two ways of distributing the money. Please mark below which alternative you prefer:

Alternative A: *Give 4 USD to 4 of the individuals and nothing to the other 4 individuals. This means that 4 individuals who did the assignment are not paid.*

Alternative B: *Give 2 USD to each of the 8 individuals.*

The four cheaters treatment

....

We want you to decide how to distribute 16 USD between 8 of the recruited individuals. 4 of the individuals did the assignment, and 4 falsely reported to have done the assignment. You can choose between two ways of distributing the money. Please mark below which alternative you prefer:

Alternative A: *Give 4 USD to 4 of the individuals who did the assignment and nothing to the other 4 individuals who falsely reported to have done the assignment.*

Alternative B: *Give 2 USD to each of the 8 individuals. This means that the 4 individuals who falsely reported to have done the assignment are paid.*

The two cheaters treatment

....

We want you to decide how to distribute 16 USD between 8 of the recruited individuals. 6 of them did the assignment and 2 falsely reported to have done the assignment. You can choose between two ways of distributing the money and your choice may be selected to determine the payments to the 8 individuals. Please mark below which option you prefer:

Alternative A: *Give 4 USD to 4 of the individuals who did the assignment and nothing to the other 4 individuals. This means that 2 individuals who did the assignment are not paid.*

Alternative B: *Give 2 USD to each of the 8 individuals. This means that the 2 individual who falsely reported to have done the assignment are paid.*

Design: summary

- Spectators had to choose between an alternative that involved not giving to some who was deserving (false negatives) and an alternative that involved giving to someone who was undeserving (false positives).

- The only treatment variation is with respect to the number of cheaters, C, which determines the number of false negatives and false positives.

  - The number of false negatives if alternative A is chosen is four minus the number of cheaters, $4 - C$.
  - The number of false positives if alternative B is chosen is the number of cheaters, C.

Theoretical framework

- Our point of departure is a model assuming that the spectators dislike that an individual's payment, y_i, deviates from what they view as that individual's fair payment, m_i (Cappelen et al 2007, 2013).

$$V(y; \cdot) = -\sum_{i \in N} (y_i - m_i)^2 \tag{10}$$

- We introduce the possibility that spectators care differently about individuals getting more than what is fair and individuals getting less than what is fair.

$$V(y; \cdot) = -\sum_{i \in N} (min[0, y_i - m_i])^2 - \beta \sum_{i \in N} (max[0, y_i - m_i])^2 \tag{11}$$

- where β is the relative weight attached to deviations where individuals are getting more than their fair payment.

Theoretical framework

- We adapt the model to the specific environment in our experiment by making three assumptions:
    - spectators focus on the payments received by the individuals in the group of people who might be cheaters.
    - spectators believe that the fair payment to the cheaters is zero.
    - spectators believe that the fair payment to those who did the assignment is what they would get with an equal distribution.
- The choice between Alternative A and Alternative B is then a choice between giving those who did the assignment 2 USD less that what is fair or giving the cheaters 2 USD more than what is fair.

Classification

- A spectator is indifferent between the two alternatives when $V(A;\cdot) = V(B;\cdot)$, which implies that:

$$(1-c)(2)^2 = \beta c(2)^2 \tag{12}$$

- where c is the share of cheaters in the group. This gives a critical level of c, $\overline{c}$, for which the spectator switches from preferring Alternative B to preferring Alternative A. With $\beta = 1$ it follows that $\overline{c} = \frac{1}{2}$. Similarly, the spectator prefers Alternative B to Alternative A if $\beta < 1$ and prefers Alternative A to Alternative B for $\beta > 1$.
  - We classify a spectator as *false positive averse* if $\overline{c} \leq \frac{1}{4}$,
  - We classify a spectator as *false negative averse* if $\overline{c} > \frac{3}{4}$,
  - We classify a spectator as *intermediate* if $\frac{1}{4} < \overline{c} \leq \frac{3}{4}$.

Results workers

- The majority of workers, 52.7 percent, chose to complete the assignment.
- A large minority, 47.3 percent, reported to have completed the assignment without having done so.

Share of spectators who equalize by treatment
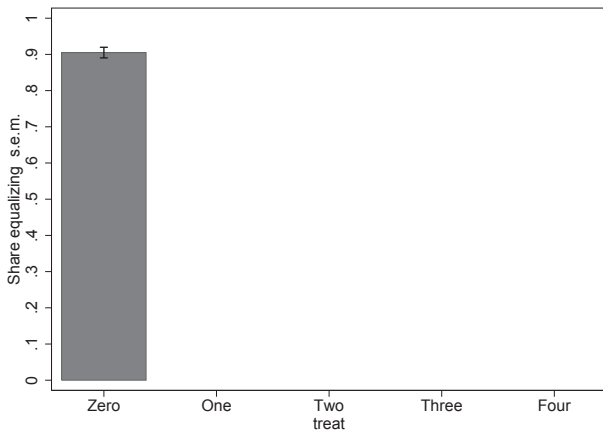
Share of spectators who equalize by treatment

Share of spectators who equalize by treatment

Share of spectators who equalize by treatment

Classification
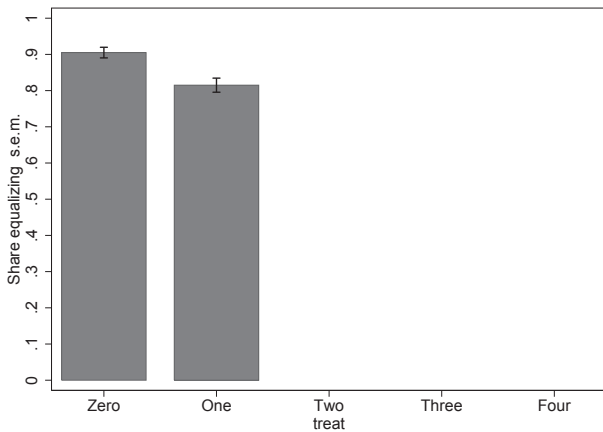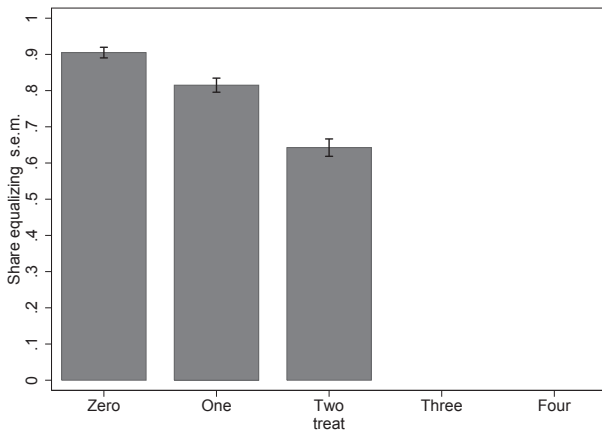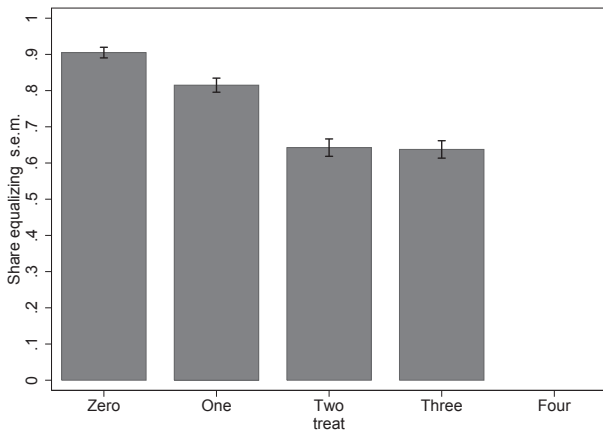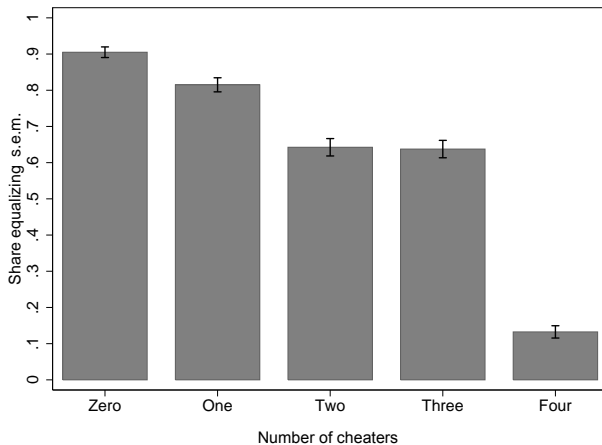
- We can calculate the share of spectators who are *false positive averse*, *false positive averse* and *Intermediate* based on the spectators behavior in treatment 2 and treatment 4.
    - A spectator is *false positive averse* if he or she chooses not to equalize in treatment 2.
    - A spectator is *false negative averse* if he or she chooses to equalize in treatment 4.
    - We define the remaining individuals as *Intermediate*.

Table: Share of types

False positive averse	0.185
False negative adverse	0.683
Intermediate	0.177

The effect of cheaters on equalization

	Equalize	Equalize	Equalize	Equalize
cheaters	-0.172***	-0.173***	-0.089***	-0.089***
	(0.006)	(0.006)	(0.015)	(0.015)
male		-0.064***		-0.091***
		(0.019)		(0.026)
agelow		0.027		0.057**
		(0.019)		(0.026)
educationlow		-0.011		0.010
		(0.026)		(0.036)
incomelow		0.033		0.000
		(0.024)		(0.034)
Constant	0.971***	0.985***	0.876***	0.891***
	(0.013)	(0.019)	(0.032)	(0.037)
Observations	2000	2000	1200	1200
R^2	0.254	0.260	0.025	0.040

Standard errors in parentheses

Share who equalize by political affiliation and treatment

Table: Share of types

	Right-wing	Not right-wing
False positive averse	0.20	0.18
False negative adverse	0.49	0.70
Intermediate	0.31	0.12

Political preferences and cheaters

	Equalize	Equalize	Equalize	Equalize	Equalize	Equalize
right-wing	-0.102***	-0.050	-0.041	-0.120***	0.062	0.082
	(0.021)	(0.031)	(0.031)	(0.030)	(0.075)	(0.074)
cheaters	-0.172***	-0.164***	-0.164***	-0.086***	-0.062***	-0.062***
	(0.006)	(0.007)	(0.007)	(0.015)	(0.018)	(0.017)
right-wing*ch		-0.026**	-0.026**		-0.089**	-0.093***
		(0.012)	(0.012)		(0.036)	(0.035)
Constant	0.999***	0.984***	0.996***	0.902***	0.856***	0.869***
	(0.014)	(0.015)	(0.020)	(0.032)	(0.036)	(0.040)
Controls	No	No	Yes	No	No	Yes
Observations	2000	2000	2000	1200	1200	1200
R^2	0.263	0.264	0.269	0.038	0.043	0.056

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

US versus Norway

- The Norwegian spectators were presented with exactly the same treatments and matched with the same group of workers.
- USA and Norway represent two extremes with respect to income inequality and the extent of social security.
- Are there cross-national differences in how the trade-off between false positives and false negatives are made?

Share who equalize by treatment and country
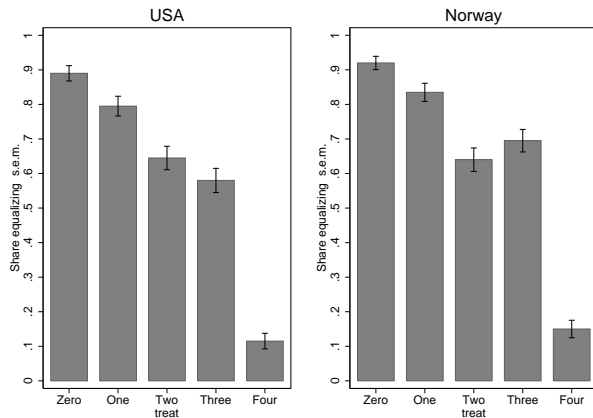
Note: The figure shows the share of spectators who choose to equalize in each of the five treatments and country.

Table: Share of types

	Norway	US
False positive averse	0.165	0.205
False negative adverse	0.695	0.580
Intermediate	0.140	0.215

Table: Share of types

	Norway	US
False positive averse	0.165	0.205
False negative adverse	0.695	0.580
Intermediate	0.140	0.215

Are the US and Norway different?

	Equalize	Equalize	Equalize	Equalize
US	-0.050*	-0.076***	0.025	-0.001
	(0.026)	(0.029)	(0.063)	(0.064)
cheaters		-0.089***	-0.070***	-0.070***
		(0.015)	(0.021)	(0.021)
cheaters*US			-0.038	-0.038
			(0.031)	(0.030)
Constant	0.723***	0.919***	0.863***	0.881***
	(0.018)	(0.038)	(0.043)	(0.047)
Controls	No	Yes	No	Yes
Observations	1200	1200	1200	1200
R^2	0.003	0.045	0.029	0.047

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Conclusion

- We have shown that the spectators do not care equally about all deviations from a fair distribution.

- A large majority are false negative averse, i.e. they are more concerned with avoiding not giving to those who are deserving, than with avoiding giving to those who are undeserving.

- Substantial heterogeneity in how the trade-off between the two mistakes are made.
  - A smaller share of right-wing voters are false negative averse than other voters.
  - A larger share of Norwegians are false negative averse than Americans.

- Suggests that political disagreements and international differences in distributive choices are not only about what should be viewed as fair, but also about how to handle the trade-off between false positives and false negatives.

Plan

- Fairness, inequality, and personal responsibility: Understanding inequality acceptance

- How fair is fair?

- Second-best fairness

- **What is shaping fairness preferences?**

- Fairness in action

What is shaping fairness preferences: The role of institutions

- The moral development of children (Science, 2010)

- How does early childhood education affect fairness preferences (new paper with Alexander W. Cappelen, John List, and Anya Samek)

- Reference dependent social preferences (work in progress with Alexander W. Cappelen, Erik Ø. Sørensen, and Matthew Rabin)

Moral development in adolescence

Significant institutional and cognitive changes from mid-childhood to late adolescence.

- **Institutional** - A striking feature of most modern societies, is how our institutions and social practices change when children enter into adolescence.

- **Cognitive** - Adolescence is also a period of important neurobiological changes in the brain,

    - the maturation of the prefrontal cortex plays an important role in the development of cognitive abilities for decision making and impulse control.

Research questions

- Is there increased willingness to accept inequalities throughout adolescence?

    - Do they increasingly accept inequalities due to differences in production?

    - Do they increasingly accept inequalities due to efficiency considerations?

- Do children become more selfish in adolescence?

Literature

- A large psychological literature on the development of social skills in children (e.g., Damon (1975;1977)),

    - Moral reasoning (hypothetical).

- Economic experiments with children (e.g., Harbaugh, Krause and Liday (2003), Fehr, Bernhard and Rockenbach (2008), Sutter (2007)).

    - Behavior in real situations, main focus on younger children and on the role of selfishness.

Sample

We recruited 486 subjects among pupils at schools in Bergen municipality, Norway.

- Randomly sampled 20 schools.

- Randomly sampled pupils from these schools.

- Average response rate: 64 percent.

- Bergen municipality fairly representative for the Norwegian population.

Set-up

- All sessions conducted at NHH.

  - Identical set-up for all age groups.

  - Separate sessions for the different grades.

  - Mixed groups with pupils from different schools.

  - No more than 5 pupils from each school class in any lab.

  - Teachers not present.

- Double blind and real money

  - High stakes (average total payment: 233 NOK (about 30 EUR)),

  - Scaled by productivity.

Part 1: The production phase

- The production phase lasted for 45 minutes.

  - Endogenous working time: The participants could move between two web sites (on a closed network): a production site and an entertainment site.

- At the production site, the participants could earn points by doing an exercise.

  - After the production phase they were randomly and with equal probability, assigned a price of either 0.4 NOK or 0.2 NOK per point.

- At the entertainment site, they could view short videos and pictures, read cartoons or play video games.

  - Earned no money.

Oppgave

Dine poeng til nå er **6**.

Finn de stedene tallet 743 er i tabellen.

Klikk i ruten til høyre for disse tallene.

- Du få ett poeng for hvert riktige tall.
- Du blir trukket ett poeng for hvert gale tall.

Når du vil gå videre til neste oppgave, klikk på **LEVER** under tabellen.

743 □	743 □	757 □	743 □	754 □	877 □	743 □	757 □	754 □	739 □	739 □	492 □	754 □	395 □	757 □	877 □	754 □
739 □	754 □	754 □	877 □	739 □	739 □	754 □	877 □	877 □	743 □	492 □	743 □	739 □	754 □	877 □	743 □	492 □
739 □	492 □	877 □	877 □	739 □	754 □	492 □	754 □	739 □	395 □	739 □	743 □	754 □	743 □	395 □	877 □	754 □
395 □	754 □	492 □	743 □	877 □	743 □	877 □	877 □	739 □	743 □	754 □	754 □	877 □	395 □	757 □	743 □	743 □
757 □	395 □	757 □	757 □	743 □	743 □	492 □	395 □	754 □	754 □	395 □	492 □	877 □	395 □	743 □	395 □	754 □
757 □	754 □	754 □	757 □	757 □	743 □	492 □	754 □	743 □	743 □	395 □	739 □	754 □	754 □	754 □	492 □	757 □
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743 □	877 □	739 □	877 □	492 □	395 □	492 □	743 □	739 □	877 □	877 □	739 □	754 □	877 □	395 □	877 □	757 □
395 □	877 □	739 □	492 □	754 □	395 □	754 □	757 □	492 □	757 □	739 □	739 □	743 □	743 □	757 □	754 □	743 □
395 □	492 □	743 □	754 □	757 □	739 □	757 □	395 □	492 □	739 □	492 □	877 □	877 □	757 □	395 □	743 □	492 □
877 □	757 □	754 □	395 □	757 □	739 □	492 □	757 □	395 □	743 □	757 □	877 □	754 □	754 □	743 □	395 □	743 □

LEVER

Part 1: The distribution phase

- The participants were anonymously matched with a sequence of other participants, and asked to propose a distribution of the total earnings in those situations.

- For each match the participants were given information about:

  - The total earnings, and the earnings for the two participants,

  - The three potential sources of inequality:

    - Working time
    - Production/productivity
    - Price

Part 2: Dictator game with a multiplier

- The participants were anonymously matched with a sequence of other participants, and asked to distribute a fixed amount of points.

  - We adjusted, in each session, the amount to be distributed in this part to correspond to the average amount that were distributed in the first part.

- The participants were informed that if they kept the points themselves, each point would be worth 1 NOK.

- If the point was given to the other participant, each point could be worth more for the other participant.

- They made choices in four such situations (multiplier equal to 1, 2, 3, and 4, respectively).

Moral development of social preferences: Main findings

Fig. 1. (**A**) The coefficient for the share produced by the other participant in a regression of share given on share produced. (**B**) The coefficient for the multiplier in a regression of share given on the multiplier. All regressions control for personal fixed effects (*31*). Confidence intervals (95%) are indicated.

Table 2. Estimates of the choice model (estimate ± SE). The complete set of estimates is in table S3.

	Grade level					
	5th	7th	9th	11th	13th	All
Share of egalitarians	0.636	0.401	0.272	0.267	0.224	0.365
	±0.060	±0.059	±0.057	±0.056	±0.056	±0.027
Share of meritocrats	0.054	0.220	0.363	0.396	0.428	0.287
	±0.037	±0.054	±0.063	±0.069	±0.075	±0.028
Share of libertarians	0.310	0.379	0.364	0.337	0.347	0.348
	±0.057	±0.055	±0.061	±0.059	±0.069	±0.026
Log likelihood	−827.4	−881.4	−797.6	−865.0	−790.3	−4219.7

Do children become more selfish in adolescence?

| Grade level | Males | | | | | |
	5th	7th	9th	11th	13th	All
Mean	0.422	0.449	0.466	0.435	0.448	0.444
Standard error of mean	0.020	0.017	0.013	0.027	0.028	0.009
Number of individuals	58	51	51	36	35	231

| Grade level | Females | | | | | |
	5th	7th	9th	11th	13th	All
Mean	0.443	0.467	0.457	0.435	0.481	0.456
Standard error of mean	0.022	0.016	0.014	0.016	0.018	0.008
Number of individuals	46	56	42	61	50	255

Table: **Share of total income given in the first part of the experiment.**

Concluding remarks

- Inequality acceptance increases from mid-childhood to late adolescence.

  - In early adolescence, there is a sharp increase in acceptance of inequalities due to differences in individual achievements, but no trace of efficiency-motivated inequality acceptance.

  - We observe, both for males and females, a further increase in the importance of the meritocratic argument in late adolescence, whereas the efficiency argument mainly becomes important for males.

  - We do not find any evidence of a change in self-interest throughout adolescence (contradicts Harbaugh et al. (2007) but is consistent with findings in Gummerum et al. (2008).)

The effect of early childhood education on social preferences

- *Early childhood* is a period of rapid moral development and may be formative for an individual's social preferences in adulthood (Benenson et. al., 2007; Sutter, 2007; Sutter and Kocher, 2007; Fehr et al., 2008; Almaas et al., 2010).

- How do *early childhood interventions* shape children's social preferences - may exposure to different educational institutions in childhood contribute to explain heterogeneity in social preferences?

- Much focus on how to design educational policies that improve academic performance, but little focus on how such policies affect the social preferences of children. Of great importance for policy design!

Contribution of the present paper

- We study a field experiment conducted in Chicago Heights (Illinois), a poor and prototypical low performing urban school district south of Chicago (Fryer, Levitt, List, 2015).

- In the field experiment, children were randomized into different types of early childhood interventions.

- We provide *causal evidence* of how these interventions shaped the **social preferences of children several years later**.

Chicago Heights Early Childhood Center

- In 2010-2012, households with children aged 3-4 years were recruited and randomized into one of three groups:
  - **Preschool:** Included a free, **9-month full day** preschool for the child, but no direct intervention for the parent.
  - **Parent Academy:** Included a **9-month incentivized parenting program** for parents to learn how to teach the child at home, but no direct intervention for the child. Parents in this program met for bi-monthly sessions and were financially incentivized on their participation in the program and their child's performance in standardized tests (could earn up to 7000 USD, per capita income 17500 USD).
  - **Control:** The child and their parents did not receive any treatment interventions.

The lab experiment - sample

- We returned to these children in the spring of 2014, when they were in 1st and 2nd grade, and conducted a series of *incentivized* experiments.
- Targeted the 303 children in Illinois School District 170 who had been invited to participate in the CHECC study, *all of them* took part in the experiments - **no attrition in the lab experiment**:
    - **Preschool attrition:** One child declined the offer of a free full-time pre-school; attendance rate was 89.2 percent across all school days.
    - **Parent Academy attrition:** Ten parents declined to take part; attendance rate was 81.75 percent across all sessions.

Background - Balance

	Control	Parent Academy	Preschool	Total	F-test p
Age	7.552	7.571	7.645	7.588	0.491
	(0.0603)	(0.0640)	(0.0663)	(0.0366)	
Female	0.440	0.462	0.524	0.474	0.640
	(0.0523)	(0.0568)	(0.0555)	(0.0316)	
Black	0.154	0.179	0.244	0.191	0.395
	(0.0380)	(0.0437)	(0.0477)	(0.0249)	
Hispanic	0.780	0.795	0.695	0.757	0.256
	(0.0436)	(0.0460)	(0.0512)	(0.0271)	
White	0.0659	0.0256	0.0610	0.0518	0.724
	(0.0262)	(0.0180)	(0.0266)	(0.0140)	
Time of day	9.780	10.23	9.890	9.956	0.672
	(0.251)	(0.192)	(0.203)	(0.128)	
Observations	130	89	84	303	

Theoretical framework

- We assume that people make trade-offs between three primary motives in their distributive behavior: **self-interest**, **fairness**, and **efficiency**.
- The early childhood intervention may thus shape the social preferences of the children in three different ways:
  - (i) in the weight they attach to fairness relative to self-interest;
  - (ii) in the weight they attach to fairness relative to efficiency;
  - (ii) in what they view as a fair distribution.

$$V(y;\cdot) = y - \beta(y-m)^2 - \gamma(y-e)^2, \tag{13}$$

The lab experiment - basic structure

- The experiments were *single-blind*, conducted one-on-one at school, always in the same order, with the experimenter reading the instructions out load.

- Each child took part in *four different experiments* designed to identify the three different ways that the early childhood intervention could have shaped their social preferences.

- In one experiment, the child was a *stakeholder*, in the three other experiments the child acted as a *spectator* (Cappelen et al., 2013).

- All the choices had *real consequences*; *coins* that they could exchange for prizes in the experimental shop (stakeholder), *stickers* (spectator).

- Our analysis focuses on *between-individual* comparisons.

Table: Experimental Design

Game	Type	Description
Dictator	Stakeholder	Allocate coins between self and other
Efficiency	Spectator	Allocate stickers between two other children
Merit	Spectator	Allocate stickers between child who did well and not well
Luck	Spectator	Allocate stickers between lucky and unlucky child

In this part, you will be matched with 1 other kid about your age that is doing the same activity. You will not know who this kid is, and this kid will not know who you are.

In this part of the activity, you are going to sort some papers. The kid you are matched with will also have to sort some papers

Bring out papers and 2 bins

Here is how you sort papers:

- **Put the ripped up ones in this bin for the trash here.**
- **Put the nice colorful ones in this other bin so they can be re-used for crafts.**

Demonstrate with one ripped paper and one colorful paper.

Okay, go ahead and start.

Good job! You are all finished. Together, you and the other kid earned 10 coins for organizing papers. YOU *(point to child)* will decide how to split up the coins between you and the other kid.

I will put the coins you BOTH EARNED for organizing the papers here.

Place coins in a row in front of child
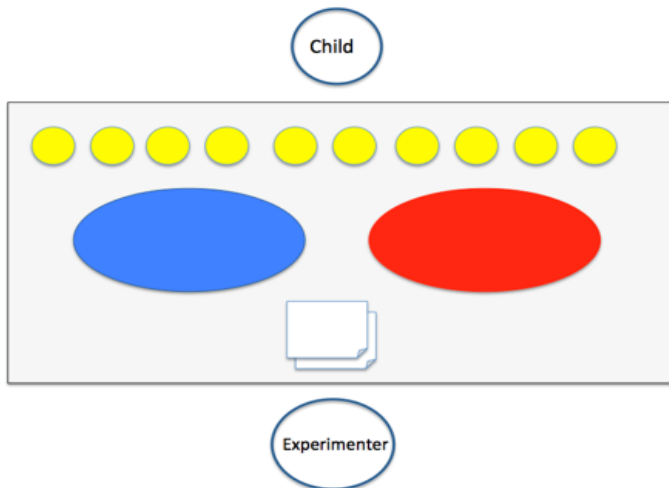
Here is YOUR PLATE

Put out BLUE plate.

You will get the coins you put on YOUR PLATE. Here is the OTHER KID'S PLATE

Put out RED plate.

The other kid will get the coins you put on THEIR PLATE.

Now you will decide how to split up the coins. You can choose any split that you want.
- **To give coins to yourself, put them on your plate, here** (*point*)
- **To give coins to the OTHER KID, put them on this plate here** (*point*)

Go ahead and start putting the coins on the plates when you decide. Remember, it is up to you what you decide. You can choose to give none of the coins, some of the coins or all coins to you or the other kid.

Your decision about what you and the other kid will get is the one that counts. That means your decision is very important.

I'm going to do some paperwork over here --*Busy self with paperwork.*

If child did not move all coins: "please split up all the coins by putting them on the plates!"

Okay, I'll put those coins for the other kid here *(put in bag)* and the coins for you here *(put in your bag)*. Thank you for deciding. At the end of the activity, you will be able to trade your coins for prizes in the store. But first, let's go to the next part.

Fairness versus Selfish (Stakeholder)

- We assume that since both children had completed the same task, the stakeholder considers it fair to distribute the earnings equally.

- The **real-effort dictator experiment** thus placed the children in a distributive situation in which they faced a **trade-off between self-interest and fairness**.

Fairness versus Efficiency (Spectator)

Now there is another part. This time, you are going to decide on how to split up stickers between two other DIFFERENT kids <u>and not for yourself</u>. These kids are not the same as the two you decided for before, these are kids who did not do any of the activities we talked about.

This time, I'm only going to give two alternatives. You decide which one will be the decision-that-counts. *(Point to slides)*

- Here is one alternative you could pick. In this alternative, THIS KID will get 2 stickers (*point to picture*) and THIS KID will get 2 stickers (*point to picture*).
- Here is another alternative you could pick. In this alternative, THIS KID will get 1 sticker (*point to picture)* and THIS KID will get 6 stickers *(point to picture.)*

For this part, your choice will be the one that counts – that means your choice is very important. So you should make the split you actually want to happen! Remember, it is up to you what you decide.

Go ahead and tell me – which decision do you want to pick, this one, or this one?

Fairness versus Efficiency (Spectator)
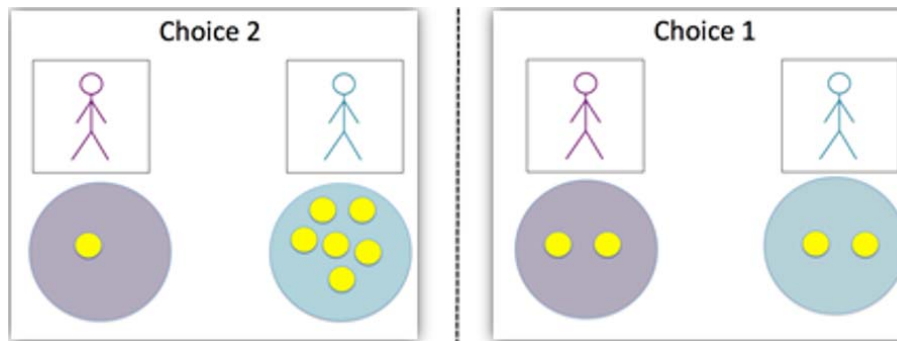
Efficiency versus Fairness (Spectator)

- We assume that since none of the two other children had done a task and they have no further information about them, the spectator considers it fair to distribute the earnings equally.

- The unequal alternative is, however, the efficient alternative (in the sense that it maximizes the total amount of stickers paid out to the two other children).

- In this experiment, there are no selfish concerns. The **efficiency experiment** thus placed the children in a distributive situation in which they faced a **trade-off between efficiency and fairness**.

Now there is another part. This time, you are going to decide on how to split up stickers between two other different kids <u>and not for yourself.</u>

The other two kids did a different activity than what you did.

They looked at pictures of houses and animals, and then they had to remember which animal is in which house

Point first to the sheet with animals, and then cover that part with your hand and point to the sheet with no animals.

This activity is pretty hard to do.

- Here is the one KID'S plate. This kid did well in this activity – the kid could remember more houses than at least half the other kids in their grade. *(put out plate and card)*. The kid who did well earned 8 stickers *(put out stickers BELOW plate)*.

- Here is the other KID'S plate. This kid did not do well in this activity – this kid could NOT remember more houses than half the other kids *(put out plate and card)*. The kid who did NOT do well earned 2 stickers. *(put out stickers BELOW plate)*.

Fair inequality, merit (Spectator)
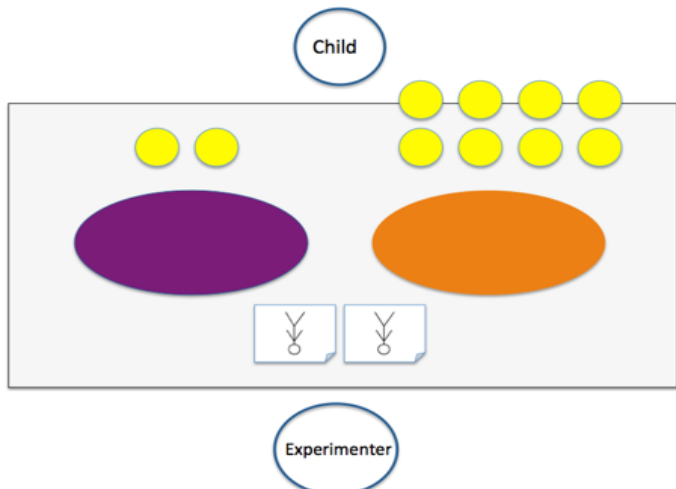
Fair inequality, merit (Spectator) - III

Even though this is what the kids earned, now YOU can decide whether you want to change the number of stickers given to each of them. You can choose to split up the stickers any way you want.

- To give stickers to the kid who did WELL, put them on their plate here *(point to stick figure and plate)*
- **To give stickers to the kid who DID NOT DO SO WELL, put them on their plate here** *(point to stick figure and plate).*

Your decision about what the kids will get is the one that counts – not what the kids earned to start with. That means your decision is very important. Go ahead and start putting the stickers on the plates when you decide. Remember, it is up to you what you decide. You can choose to give none of the stickers, some of the stickers or all stickers to each of the kids. I'm going to do some paperwork over here (*busy self with paperwork*)

If child did not move all stickers: "please split up all the stickers by putting them on the plates!"

Okay, I'll put those stickers for this kid here *(put in bag)* **and the others here** *(put in bag)*. **Thank you for deciding. Now let's go to the next part.**

Now there is another part. This time, you are going to decide on how to split stickers between two other DIFFERENT kids <u>and not for yourself</u>. These kids are not the same as the two you decided for before, these are kids who did not do any of the activities we talked about. Here are the two kids' plates (put out plates).

I have 10 stickers in total for this part (*show all the stickers, do not distribute yet*). We are going to decide what each of the kids get by flipping a token. If the token comes up GREEN, that means the kid with the GREEN plate gets all the stickers and the kid with the YELLOW plate is given no stickers. If the token comes up YELLOW, that means the kid with the YELLOW plate is given all the stickers and the kid with the GREEN plate is given no stickers.

Now let me ask you:
- **If the token comes up GREEN, who gets the stickers?**
  - ○ **Yes / No, the kid with the GREEN plate – or point**
- **If the token comes up YELLOW, who gets the stickers?**
  - ○ **Yes / No, the kid with the YELLOW plate – or point**

(*Flip the token*). The token came up [<u>YELLOW</u> / GREEN] . That means the LUCKY kid with the [<u>GREEN</u> / YELLOW] plate gets all the stickers, and the UNLUCKY kid with the [GREEN / YELLOW] plate gets no stickers (*put out stickers*).

Even though this is what the kids will get, now <u>YOU</u> can decide whether you want to change the number of stickers given to each of them. <u>You can choose to split up the stickers any way you want.</u>

- **To give stickers to the LUCKY kid, put them on the plate here** (*point*)
- **To give stickers to the UNLUCKY kid, put them on the plate here** (*point*).

Fair inequality, luck (Spectator)
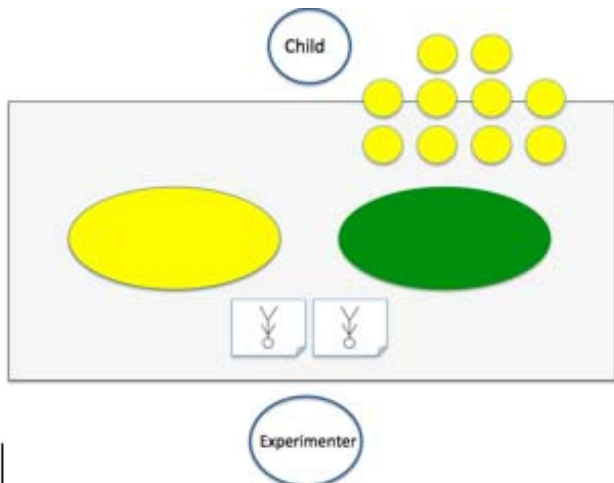
Fair inequality, merit and luck (Spectator)

- In the merit and luck experiment, we placed the spectator in distributive situations in which there were no selfish or efficiency concerns.
- We thus assume that the spectators implement what they view as the fair allocation.
- The **merit and luck experiments** thus identify whether they consider **inequalities due to merit or luck as fair**.

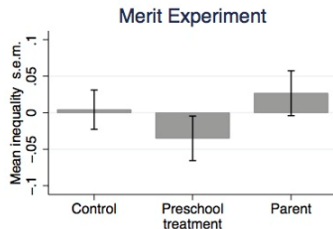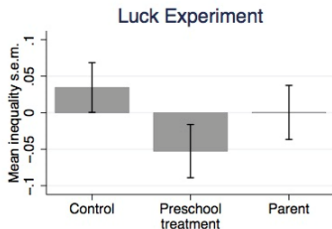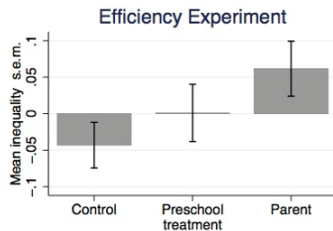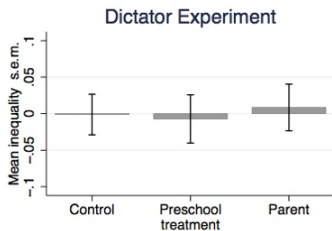# Descriptive statistics: Distributive choices
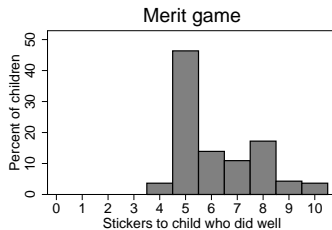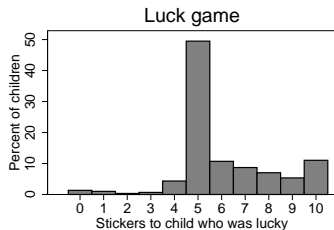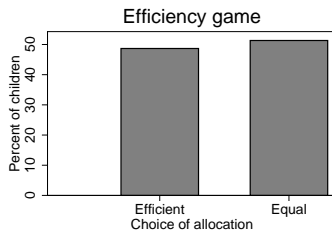
Inequality

To provide an aggregate picture of the treatment differences, we measure the inequality chosen by the child in each of the four distributive situations as follows:

$$\text{Inequality} = \frac{|\text{Income Person } A - \text{Income Person } B|}{\text{Total Income}}$$

Equivalent to the Gini coefficient in the present set of situations.

Regression analysis - main results

	dictator	dictator	efficiency	efficiency	luck	luck	merit	merit	luckmerit	luckmerit
Preschool	0.012	0.018	0.026	0.020	-0.12**	-0.11**	-0.082*	-0.080*	-0.10**	-0.098**
	(0.045)	(0.046)	(0.054)	(0.054)	(0.054)	(0.054)	(0.043)	(0.043)	(0.042)	(0.042)
Parent Academy	0.029	0.030	0.12**	0.12**	-0.050	-0.043	0.019	0.016	-0.016	-0.014
	(0.044)	(0.044)	(0.053)	(0.052)	(0.054)	(0.053)	(0.042)	(0.042)	(0.041)	(0.041)
Age		-0.051		-0.13*		-0.22***		-0.067		-0.14**
		(0.066)		(0.077)		(0.078)		(0.062)		(0.061)
Female		0.019		0.064		0.016		0.066*		0.043
		(0.038)		(0.044)		(0.045)		(0.035)		(0.035)
Black		0.14		0.24**		-0.067		0.030		-0.018
		(0.10)		(0.12)		(0.12)		(0.095)		(0.093)
Hispanic		0.11		0.17		-0.089		0.039		-0.026
		(0.093)		(0.11)		(0.11)		(0.088)		(0.085)
Constant	0.18***	0.57*	0.26***	0.38	0.35***	1.33***	0.23***	0.53*	0.29***	0.94***
	(0.055)	(0.31)	(0.065)	(0.37)	(0.066)	(0.37)	(0.052)	(0.29)	(0.051)	(0.29)
Observations	302	302	302	302	299	299	302	302	298	298
R^2	0.023	0.046	0.050	0.087	0.061	0.105	0.053	0.076	0.065	0.104

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Mechanisms - cultural transmission

- Our results are consistent with recent important work on the cultural transmission of preferences through learning and other forms of social interaction (Bisin and Verdier, 2011).
- Observed causal effects may be the result of interactions at the preschool and in the family.
    - **Preschool:** Egalitarian norm may be predominant.
    - **Parent Academy:** Efficiency norm may be used to justify greater focus on the child participating in the program.

Conclusion

- We find that early childhood interventions have a causal long-term impact on distributive behavior (which complements the work of Kosse et al., 2015)
    - **Parent Academy** children implement 34 percent **more** inequality than **Control** children in the efficiency experiment.
    - **Preschool** children implement 22 percent **less** inequality than **Control** children in the merit and luck experiments.
    - No treatment effects in the dictator game.
- The findings provide evidence of such interventions shaping both **the weight attached to fairness** (relative to efficiency) and **what the children consider a fair inequality**.
    - Highlights the importance of taking a broad view when evaluating educational programs.
- The findings also shed light on **the role of institutions** in shaping the moral development in childhood and more generally in explaining heterogeneity in social preferences.

Reference-dependent social preferences: Background ideas

- People evaluate outcomes with respect to reference points (Kahneman and Tversky, 1979) and reference points are often based on expectations (Kőszegi and Rabin, 2006).
  - Evidence from both the lab and the field (Abler et al, 2011, Ericson and Fuster, 2011, Heffetz and List, 2014, Camerer et al 2016.)
- People care about social outcomes and are willing to sacrifice direct personal utility in order to achieve a better social outcome (Fehr and Schmidt, 1999, Charness and Rabin, 2002).
- Reasonable to assume that people have expectation-based social reference points as well.

Motivation

- Expectation-based social reference points could be important in explaining important real world phenomenon.
- Expectations of certain social outcome, for example the level of inequality, could be self-fulfilling and thus sustain different policies.
  - Differences in redistributive policies between countries.
  - Difference in wage inequalities at the workplace.

Contributions of the paper

- Extends the theory of reference-dependent preferences to include reference-dependent social preferences.
- Provides experimental evidence on how expectations of social outcomes affect distributive behavior
- Illustrates how manipulation of expectations about social outcomes can be used to shed light on the nature of social preferences.

Theoretical framework

- We assume that a person's utility function has four components:
  - personal direct utility
  - personal reference utility
  - social direct utility
  - social reference utility
- Stochastic reference points are based on the person's expectations.

Design

- We designed a real effort dictator game where we manipulate the expected social outcome (income inequality).
- Before working, the participants were informed about what would most likely happen (with 90% probability).
- Two main treatments only differed with respect to the participant's expectations about the income distribution.
    - **Risky equality :** $(10, 10)$ or $(190, 190)$ with equal probability.
    - **Risky inequality:** $(10, 190)$ or $(190, 10)$ with equal probability.

Design

- After the real effort task, everyone made one dictator decision, dividing (200) NOK, for the 10% probability case (strategy method).
- In addition to the two main treatments, we had a third treatment, **Equality:** (100, 100) in payment with 90% probability.
 - Only differs from **Risky equality** with respect to personal risk.

Implications

- Consider a dictator who considers choosing a particular distribution, say $(150, 50)$. Would he or she evaluate this alternative differently in **Risky equality** and **Risky inequality**?
  - Personal direct utility is the same.
  - Personal reference utility is the same.
  - Social direct utility is the same.
  - Social reference utility is NOT the same. In **Risky equality** the dictator expects an equal distribution of income (with 90% probability), while the dictator in the **Risky inequality** expects a large inequality (with 90% probability).
- A difference between **Risky equality** and **Risky inequality** must therefore be a result of social reference utility.
- Furthermore, only "relational" social outcomes have different expectations in the two treatments. A difference between **Risky equality** and **Risky inequality** must therefore be a result of relational social reference utility.

Implementation details

- Experiment run at Norwegian School of Economics (2012-2014). New sessions are planned for September this year.

- Between-participants implementation.

- Treatments assigned randomly *within session*.

- Work 15 minutes on a real effort task while pondering the (90% probability) expected outcomes.
  - Everyone did the real effort task a second time (unannounced) as a recipient. Dictators are matched with recipients.

- Average payments: 300 NOK, about 40 USD.
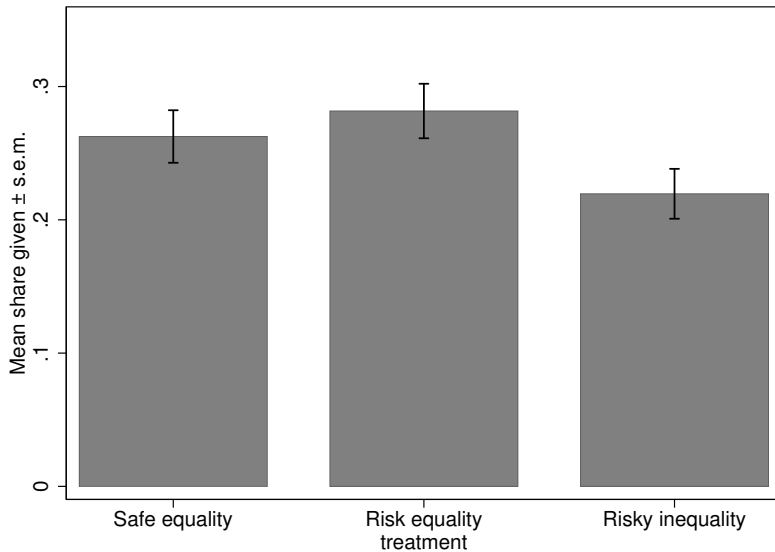
Results: Histograms of share given
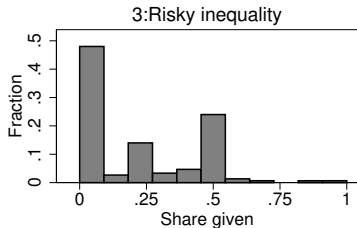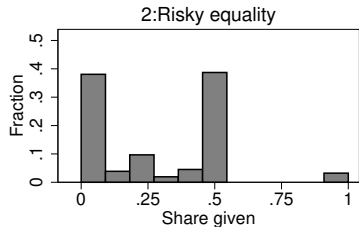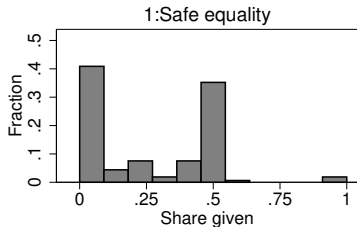
Graphs by treatment

Results: Share who equalize
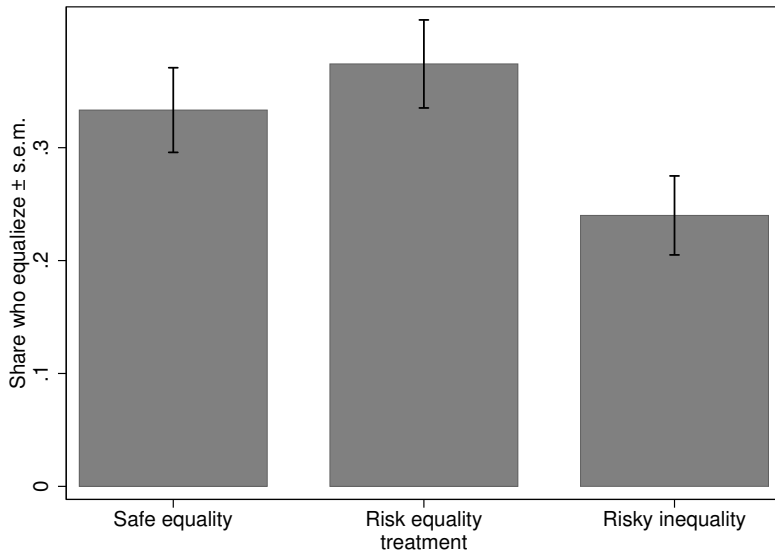
Results: Means of share given

Share who equalize

	(1)	(2)	(3)	(4)	(5)
Safe equality	-0.041	-0.041	-0.039	-0.049	-0.051
	(0.054)	(0.053)	(0.052)	(0.052)	(0.052)
Risky inequality	-0.134**	-0.133**	-0.131**	-0.136***	-0.135***
	(0.052)	(0.052)	(0.052)	(0.052)	(0.052)
age				0.011	0.008
				(0.012)	(0.012)
sex				0.099**	0.097*
				(0.045)	(0.051)
Experiment FE	no	yes	yes	yes	yes
Session FE	no	no	yes	yes	yes
Big-5	no	no	no	no	yes
Observations	464	464	464	464	462

Standard errors in parentheses

Mean share given to other participant

	(1)	(2)	(3)	(4)	(5)
Safe equality	-0.019	-0.019	-0.019	-0.021	-0.022
	(0.028)	(0.028)	(0.028)	(0.028)	(0.027)
Risky inequality	-0.062**	-0.061**	-0.061**	-0.062**	-0.061**
	(0.028)	(0.027)	(0.028)	(0.028)	(0.028)
age				-0.000	-0.002
				(0.006)	(0.005)
sex				0.023	0.020
				(0.023)	(0.026)
Experiment FE	no	yes	yes	yes	yes
Session FE	no	no	yes	yes	yes
Big-5	no	no	no	no	yes
Observations	464	464	464	464	462

Standard errors in parentheses

Concluding remarks

- Main result: expectation-based social reference points matter.
  - Participants who expect an equal distribution of income are more likely to choose an equal distribution.
- We show that manipulation of expectations can be used to distinguish different types of preferences is hard to identify in a deterministic environment.
- Reference-dependent social preferences can potentially be of great importance for our understanding distributive behavior in many context.

Stats on share given by treatment/experiment
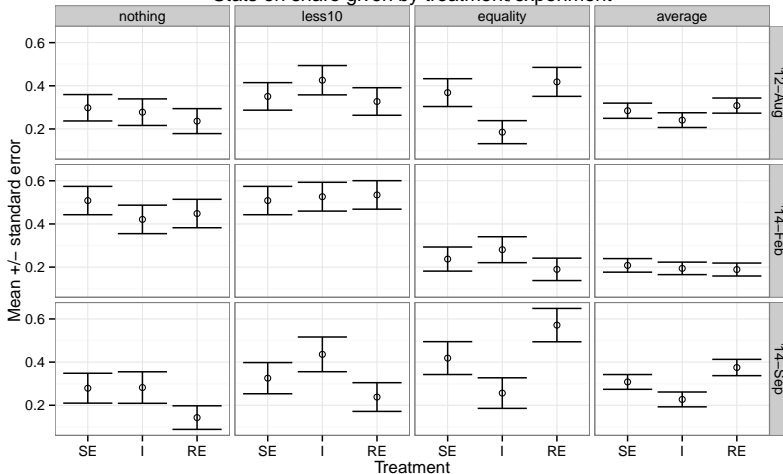
Plan

- Fairness, inequality, and personal responsibility: Understanding inequality acceptance

- How fair is fair?

- Second-best fairness

- What is shaping fairness preferences?

- **Fairness in action**

The costs of tax evasion

- Huge losses of government revenues in many countries.
    - US: 500 billion USD per year, of the same size as the annual government deficit (Cebula and Feige, 2011).
    - Greece: Around 30% of the annual government deficit (Artavanis, Morse, and Tsoutsoura, 2015).

- May create significant unfairness in society; wealthier people may have greater opportunities to evade taxes (The Economist, 2015).

How to fight tax evasion?

- **Classical approach**: Focus on increasing the detection probability and fines.
  - Builds on the theory of optimal tax evasion (Allingham and Sandmo, JPubEc, 1972)

- **Increasing tax morale**: Focus on creating a culture of voluntary compliance (Luttmer and Singhal, JEP, 2015).
  - Huge literature in behavioral and experimental economics demonstrating that people are morally motivated in many contexts.

Our focus: **Moral suasion** versus **Detection probability**

- **Approach**: Field experiment that manipulates these two dimensions and study how they affect the taxpayers' decision of whether to evade taxes.

- Both of **great policy importance** (how can tax administrations more efficiently fight tax evasion?) and of **general interest for understanding human behavior** (do moral considerations matter beyond the lab and in a large stake context?)

Overview of the study

- Conducted a **field experiment** together with the Norwegian tax administration on a unique sample; 18 000 individuals who had misreported foreign income (referred to as tax evaders in the following).

- Randomly assigned individuals to different treatment groups.

- The treatment groups received different letters that aimed at (i) **increasing perceived detection probability**, and (ii) **increasing moral costs of evading taxes.**

- Study the effect on self-reported foreign income in the subsequent tax return (short term) and the following year (long term).

Related literature: Field experiments on tax evasion

- Positive (but not large) effect of increasing detection probability (Kleven, Knudsen, Kreiner, Pedersen and Saez, ECMA, 2011) - **third-party problem.**
- Little or no evidence of moral suasion having an effect (Blumenthal, Christian and Slemrod, JPubEC, 2001; Fellner, Sausgruber, and Traxler, JEEA, 2013) - **timing problem.**
- A number of earlier contributions - **design problems.**

Challenges when doing a field experiment on tax evasion

- **Third-party problem:** Do people have the opportunity to evade taxes?
- **Timing problem:** Does the intervention take place close to the time of the decision?
- **Design problem:** How can we cleanly identify the different effects?

Sample - avoiding the third-party problem

- People self-report foreign income when filing tax returns in Norway.

- **Recent development:** Financial institutions and tax administrations worldwide exchange information through so called *Automatiske Kontrolloppgaver Utland* (AKU; *Automatic Control Filings from Abroad*).

- The Norwegian tax administration can compare these AKU reports to the self-reported foreign income.

- For the income year 2011, the Norwegian tax administration received reports on around 40 000 individuals from a number of countries and could thus establish whether they had misreported their foreign income and thereby evaded taxes (lower estimate).

Our sample

- The tax evaders, 18 000 individuals, who according to the AKU reports had misreported foreign incomes between 2 000 – 200 000 NOK (ca. 250 – 25 000 Euro) for the income year 2011.
- Not contacted by the tax administration, except with the letter sent as part of this experiment.
- **Important**: These individuals most likely also have the opportunity to evade taxes in the following years!

Distribution of total non-declared foreign income for income year 2011
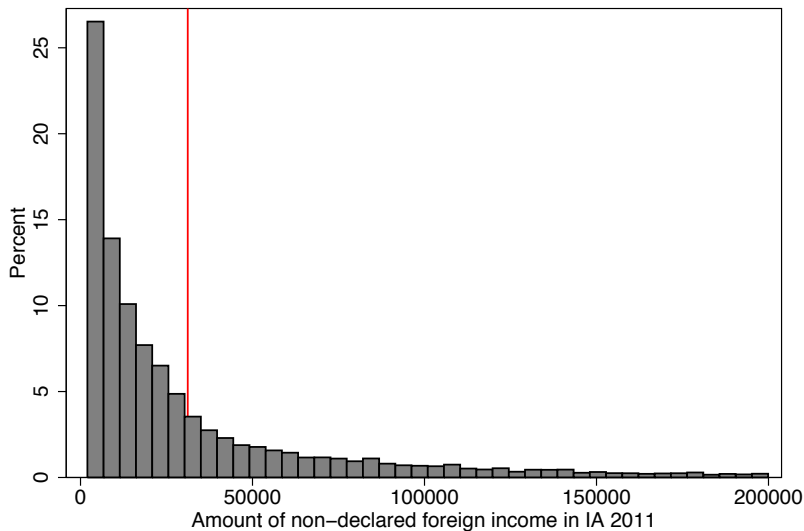
Categories of evaded income

- Pensions: 58%.
- Financial income: 28%.
- Earnings: 17%.
- Only 4% of the individuals had misreported income in more than one category.
- Important: the reports do not provide a complete overview of the foreign income of these individuals.

General sample descriptives

	Sample		
	AKU		General
	evaders	non-evaders	population
Share Norwegian citizen	0.548	0.503	0.836
Share citizen of other Nordic country	0.433	0.474	0.039
Share female	0.456	0.437	0.502
Mean age	59.3	49.9	49.8
Share older than 60 years old	0.570	0.332	0.289
Share self-employed	0.094	0.133	0.084
n	17 899	22 189	256 044

Income and wealth: sample descriptives

	Sample		
	AKU		General
	evaders	non-evaders	population
A. Taxable income, 2011:			
mean	296 585	403 619	272 616
Q_{25}	95 674	147 551	110 447
Q_{50}	182 190	274 685	274 685
Q_{75}	345 318	644 865	458 413
B. Taxable wealth, 2011:			
mean	1 427 926	1 189 590	462 820
Q_{25}	0	0	0
Q_{50}	56 655	35 277	63
Q_{75}	644 865	577 269	325 706

Basic structure of the field experiment

- Randomly assigned the tax evaders to a control group or different treatment arms receiving different letters: base letter, moral letters, and detection letter.

- All letters sent from the Norwegian tax administration just before they are to complete their tax returns - avoid the timing problem.

- Study the effect of receiving this letter on the self-reporting of foreign income (pensions, earnings, financial income) in the following two years.

2011	Some Norwegian taxpayers have income abroad
2013(Feb)	Tax authority receives AKU-reports on foreign income in 2011, identify the tax evaders (main sample)
2013(April)	Randomization of treatment letters to the main sample
2013(May)	Self-report foreign income in 2012 in the tax return
2014(May)	Self-report foreign income for 2013 in the tax return

Additional data

2014(Dec) Survey: validation of letter content.

2014(Dec) Test how many open a letter from the tax authority.

2014(Sep) AKU-reports on foreign income in 2012.

2015(Sep) AKU-reports on foreign income in 2013 (expecting).

Randomization - treatment balance

	Control	Base	Moral	Detection
Share citizens	0.550	0.552	0.546	0.546
Share other Nordic country	0.428	0.431	0.434	0.439
Share female	0.460	0.450	0.459	0.448
Mean age	58.15	58.780	58.604	57.846
Above 60	0.558	0.564	0.576	0.557
Share self-employed	0.098	0.099	0.091	0.097
N	2,015	4,038	7,988	2,014

Letters ready for mailing

How can we obtain a clean identification?

- A letter from the tax administration may in itself affect detection probability and moral motivation.
- To cleanly identify a causal effect of these two dimensions, we compare to a base letter that provides only general information.
- The moral and detection letters manipulate the base letter *only* with respect to moral motivation or detection probability.

Skatteetaten

Utskriftsdato	08.04.2013
Vår referanse	2013/XXXXX-X

Informasjon om selvangivelsen for inntektsåret 2012

Norsk økonomi blir stadig mer internasjonalisert, og en økende andel av norske skattytere mottar inntekt fra utlandet og har formue plassert i utlandet. Dette brevet får du fordi Skatteetaten ønsker å informere om skattlegging av denne typen inntekt og hvordan den skal rapporteres.

Dersom du er skattemessig bosatt i Norge, skal du skatte til Norge selv om inntekten er opptjent i utlandet og formuen plassert i utlandet - med mindre noe annet fremgår av de skatteavtaler Norge har inngått med andre land. Opplysninger om skatteavtalene og hvilke bestemmelser som gjelder for skattlegging av inntekt og formue i utlandet kan du få på Skatteetaten sine hjemmesider www.skatteetaten.no. Du kan også kontakte oss på telefon 21 49 73 94 (åpningstid: kl. 08.00 - 15.30).

Når du mottar den forhåndsutfylte selvangivelsen, må du kontrollere opplysningene som er lagt inn. Dersom opplysningene er korrekte og fullstendige, trenger du ikke gjøre noen endringer. Vanligvis vil ikke den forhåndsutfylte selvangivelsen inneholde opplysninger om inntekts- og formuesforhold i utlandet. Du må derfor rapportere alle inntekter, all formue og all skatt betalt i utlandet. Mer informasjon finner du på www.skatteetaten.no/A-rettigheter.

Med hilsen

Skatteetaten

Postadresse	Besøksadresse	Telefonnummer
Postboks 9183	Se www.skatteetaten.no	(+47) 21 49 73 94
4068 STAVANGER	Org. nr: 991 733 096	

Base letter to taxpayers:

- 1st paragraph: **Background**.
  - *The Norwegian economy is becoming more internationalised, and an increasing number of Norwegian taxpayers receive income and have assets abroad. You are receiving this letter because The Norwegian Tax Administration would like to inform you about how this type of income is taxed and how it should be reported.*
- 2nd paragraph: **Legal basis** for declaring foreign income, also contains phone number to call centre for those with questions and a link to the home page of the Norwegian tax administration.
- 3rd paragraph: **Instructions** on how to continue with the tax return statement for the income year 2012. Included a link to a webpage providing general advice on the tax return.

The base letter and transaction costs

- The base letter clearly provides the recipient with both practical and legal information
- By comparing the base treatment to the control treatment, we can get an upper bound of the effect of reducing/minimizing transaction costs.

Moral motivation and tax evasion

- From the experimental literature on social preferences, we know that **conditional cooperation** is a powerful moral motivate.
  - May well motivate tax evasion, if the individual believes that others also are evading taxes.
  - How can we use this motivational force to increase tax morale without affecting detection probability? We aimed at changing the reference group.
- Another moral motive: Appeal to the fact that taxes finance **important public services** in society.

We had two categories of moral treatments:

- **Equal treatment**
- **Public services**

Premise: adding these sentences or the attachment only increases the moral costs of evading taxes (does not affect the detection probability or the transaction costs).

The following sentence was added to the first paragraph:

The great majority report information about their income and assets in Norway correctly and completely. In order to treat all taxpayers fairly, it is therefore important that foreign income and foreign assets are reported in the same manner.

Intervention: Moral – Public services

The following sentence was added to the first paragraph:

Your tax payment contributes to the funding of publicly financed services in education, health and other important sectors of society.

- Also used an attachment to communicate this message.

Attachment to letters

Din skatt finansierer viktige samfunnstjenester.

Skatteetaten

The following sentence was added to the first paragraph:

The Norwegian Tax Administration has received information that you have had income and/or assets abroad in previous years.

Premise : adding this sentence only increases the perceived detection probability.

Self-reported foreign income: Short-term
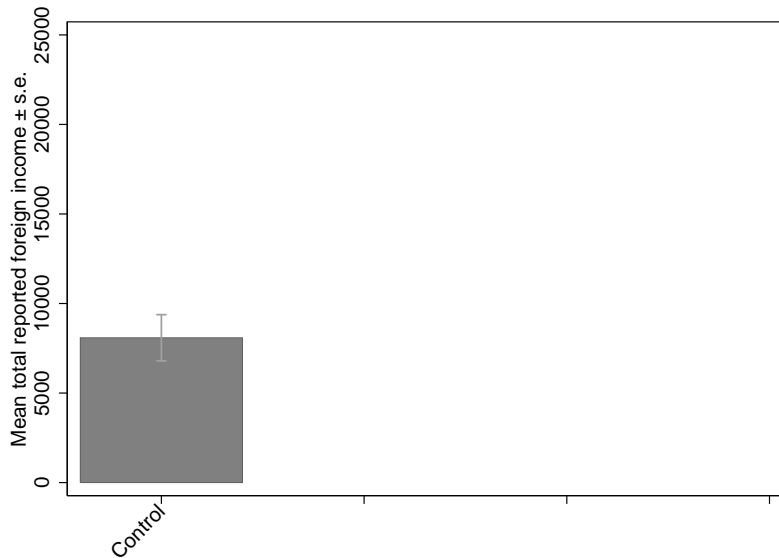
Self-reported foreign income: Short-term
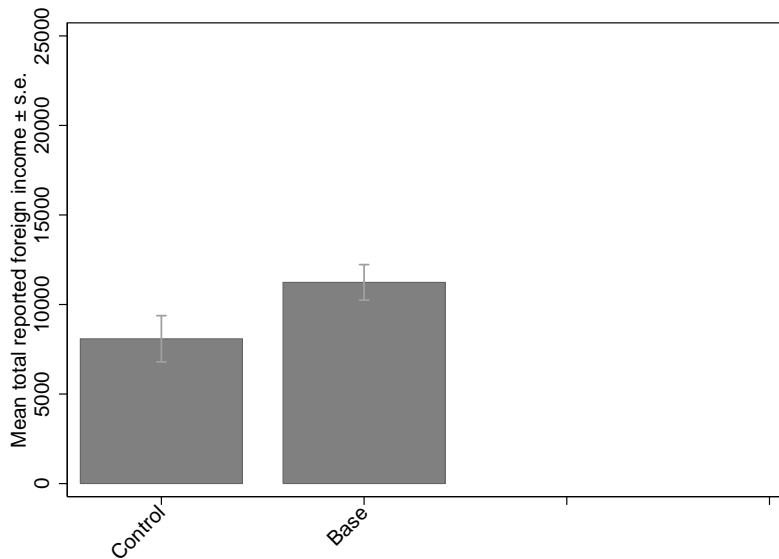
Self-reported foreign income: Short-term
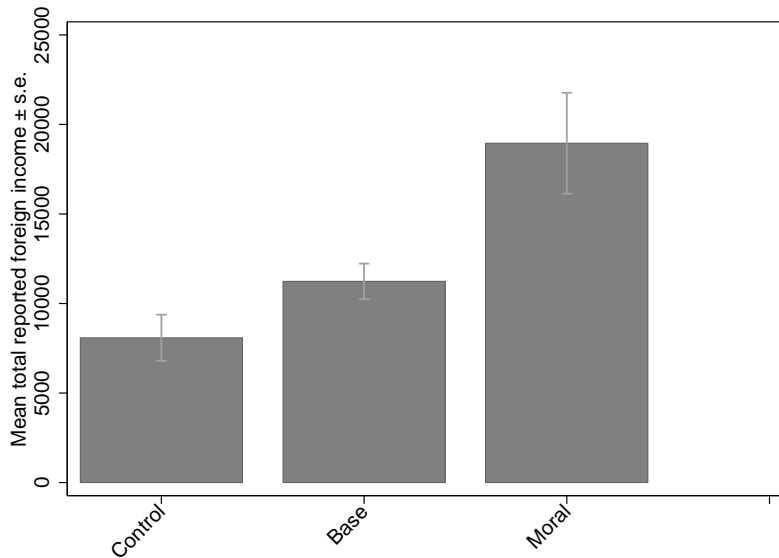
Self-reported foreign income: Short-term
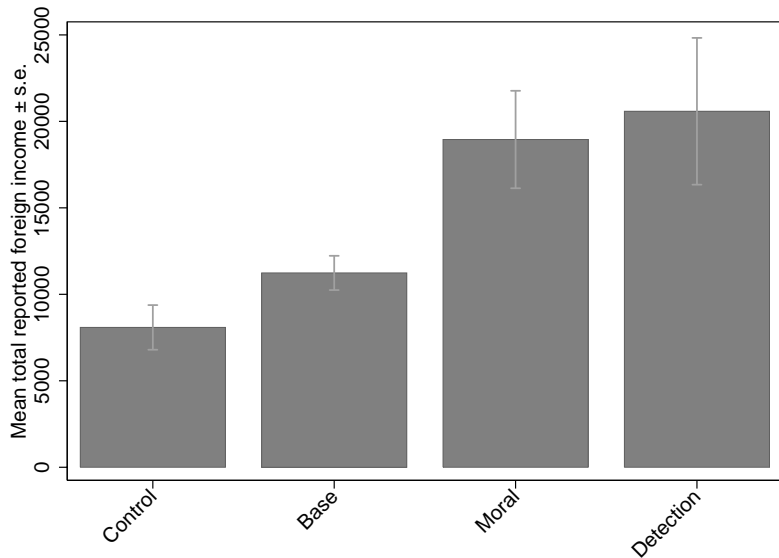
Tests of distributional equality: Short-term

| | Treatment group | | | |
	Control	Base	Moral	Detection
Mean	8 087	11 238	18 951	20 583
Standard deviation	57 561	62 508	250 166	189 088
p-values for tests against "Base":				
Standard t-test	0.060		0.055	0.005
t-test, unequal variance	0.053		0.010	0.032
Wilcoxon-Mann-Whitney test	< 0.001		0.066	< 0.001
Permutation test	< 0.001		0.054	< 0.001

(*t*-test with unequal variance uses the Satterthwaite correction, the permutation test uses the Kolmogorov-Smirnov test statistic.)

Treatment effects on self-reported foreign income: Short-term

	In levels			With $\log(y+1000)$ transformation		
	No controls	Controls	D-in-D	No controls	Controls	D-in-D
moral	7713.2***	7126.7**	7083.1*	0.0635**	0.0668***	0.109***
	(2986.3)	(2816.5)	(4120.0)	(0.0276)	(0.0257)	(0.0370)
detection	9345.7**	10700.4**	11993.0*	0.390***	0.406***	0.405***
	(4356.4)	(4790.3)	(6202.6)	(0.0426)	(0.0399)	(0.0566)
N	13856	13856	31900	13757	13649	31653

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Controls: Flexible specification of Demographics, one-year-lag of outcome, dummies for low total income (less than 25th percentile in 2011) and high status (above 75th percentile for income or wealth in 2011). The reported coefficients are relative to the "Base" treatment. Diff-in-diff to 2011 (also using control treatment).

- Did the treatments effect the extensive margin (share of individuals self- reporting a positive amount) or the intensive margin (the amount reported by those who self-report)?

Extensive margin – Share of taxpayers reporting positive amounts of foreign income: Short-term
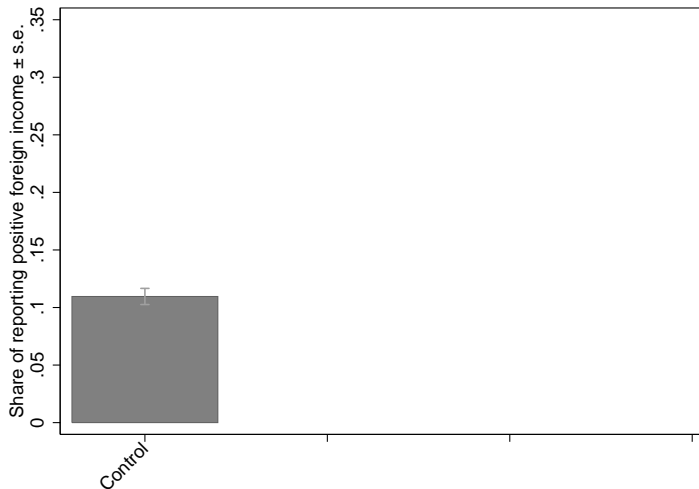
Extensive margin – Share of taxpayers reporting positive amounts of foreign income: Short-term
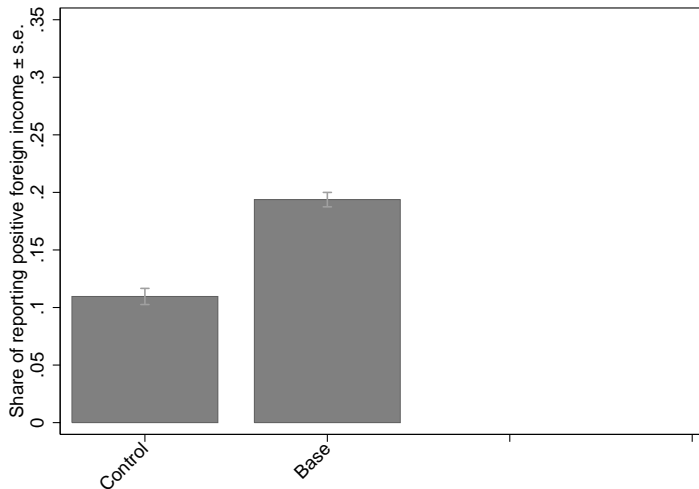
Extensive margin – Share of taxpayers reporting positive amounts of foreign income: Short-term
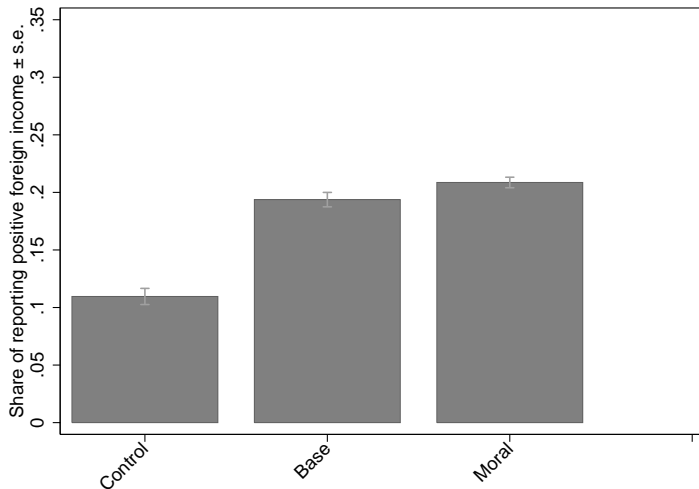
Extensive margin – Share of taxpayers reporting positive amounts of foreign income: Short-term
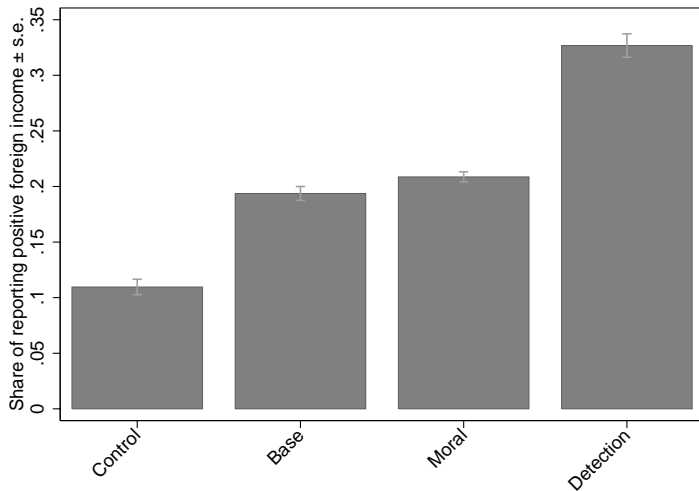
Intensive margin – mean reported foreign income by treatment, conditional on having reported a positive amount: Short-term
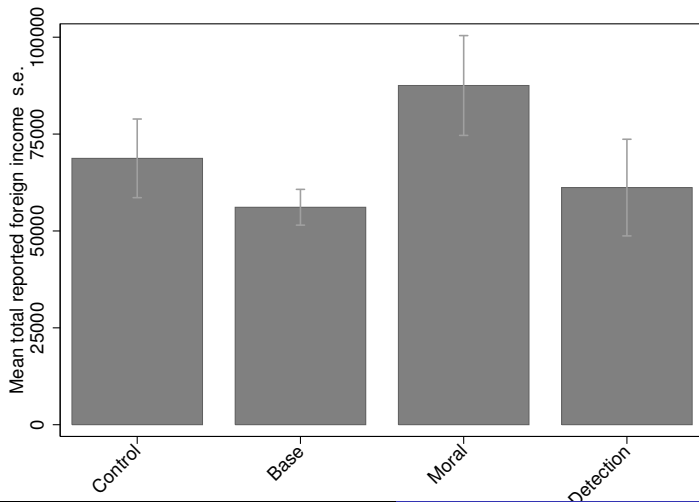
Intensive versus extensive margin: Short-term

- We observe very different patterns for the moral treatments and the detection treatment, where the moral treatments mainly work on the intensive margin and the detection treatment mainly works on the extensive margin, Why?
- Moral treatments: **Narrow** in reach, **Broad** in scope.
- Detection treatment: **Broad** in reach, **Narrow** in scope.

Heterogeneity in treatment effects: Short-term

- We find very few significant differences in how the treatments worked across citizenship, gender and socio–economic status.
- Some evidence for older people (above 60 years) reacting more strongly to both the moral treatment and the detection treatment.

Mechanisms: Validation of treatment letters

- Are they doing what we assume?
- **February 2014:** Sent a cover letter, a questionnaire and one of the letters from the experiment to 4,000 tax payers:
  - 730 from control group
  - 3,270 from group that reported correctly foreign income
  - 1000 base letters, 1,000 equal treatment letters, 1,000 public services letters, 1,000 detection letters
- Asked them how they would perceive such a letter?
- We received response from 1089 individuals (27.2%; almost identical response rates in all treatments).
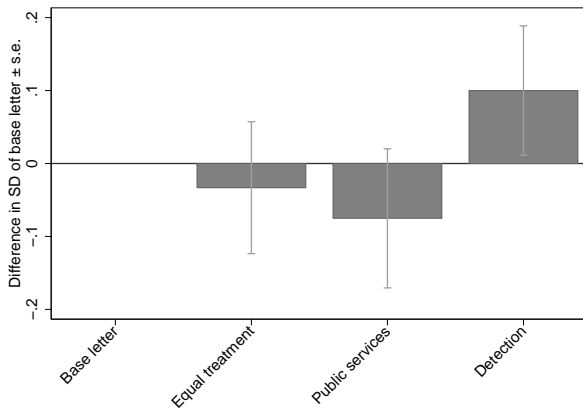
Figure: Treatment effect on beliefs about the probability of being detected

Note: Numbers in standard deviations relative to the base treatment.

Long-term: What should we expect?

- **General trend:** More focus on the this issue in society, may cause a general increase in the self-reporting?
- **Timing:** The messages in the letters may have been forgotten.
- **Behavioral response:** The interventions may have made foreign income less attractive to people - may also have affected the behavior of the tax authorities.

Self-reported foreign income: Long-term
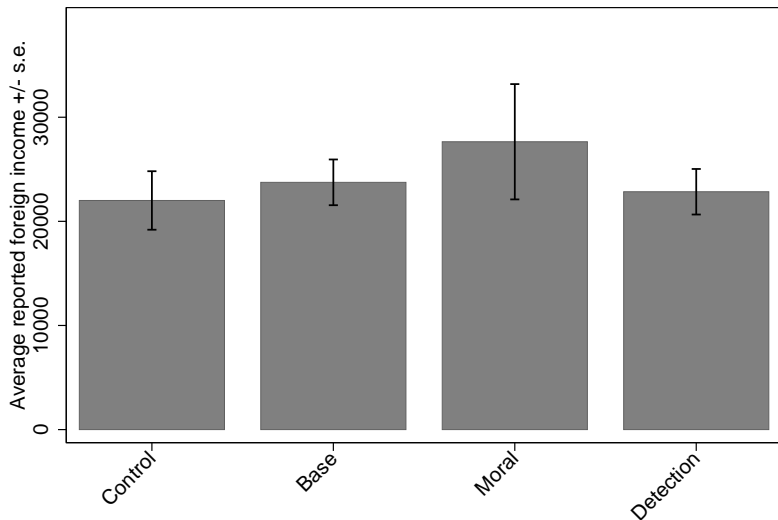
Incomes reported in 2013

Extensive margin: Long-term
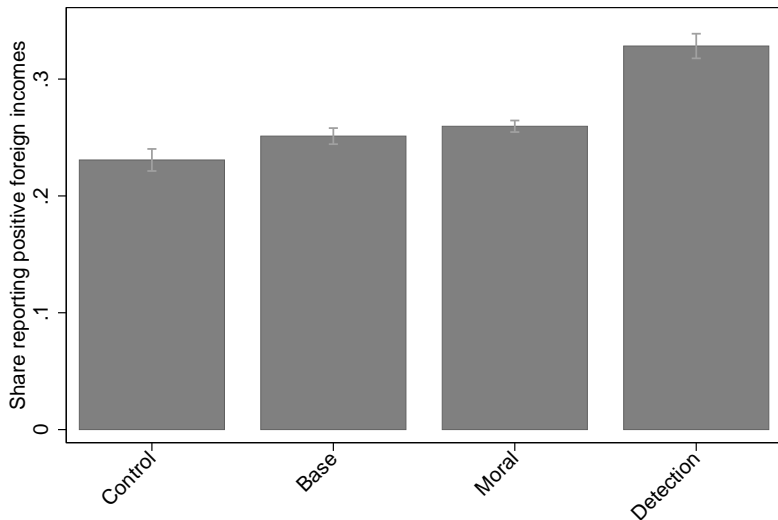
Incomes reported in 2013

Concluding remarks

- We study tax evasion on a unique sample of tax evaders.
- **Short-term:** We find that detection probability clearly matters, but also cleanly identify that moral motivation matters (in a large real stake decision outside the lab).
    - We show that moral motivation mainly works on the intensive margin, while detection probability mainly works on the intensive margin.
    - We provide suggestive evidence of conditional cooperation being a more important moral motivation than the appeal to public services.
- **Long-term:** We find very strong long-term effects of increasing detection probability; it significantly increases the probability to self-report foreign income, but also seem to make foreign income less attractive to the taxpayer. No long-term effect of moral suasion.

Fairness, inequality, and personal responsibility: Further important research questions

- **Why do people reward talent, but not other types of luck?** Do people really draw the responsibility cut between choice and circumstance or is it rather between personal and impersonal factors?

- **How do people handle personal responsibility when there is imperfect information about the source of the inequality?**

- **How are ideas of personal responsibility affected by** people having an unlevel playing field, the consequences of choices partly being determined by the choices of others, and choices being intentionally influenced by others (nudging policies).

- **Many more important issues** - the philosophical literature contains a number of important ideas that potentially may be important for understanding distributive behavior!

Interested in fairness research?

- You are most welcome to visit The Choice Lab!

- Economic Science Association 2016 organized by The Choice Lab: **Aug 31 - Sept 4.**

- A number of PhD activities - PhD course with Armin Falk: **October 10 - 14.**

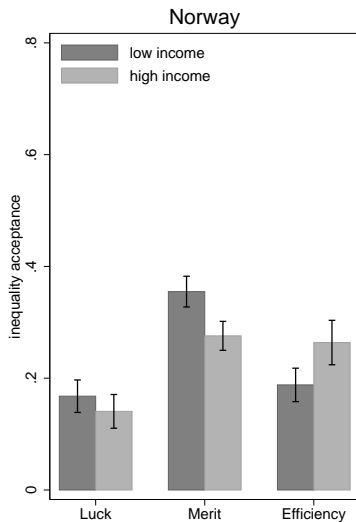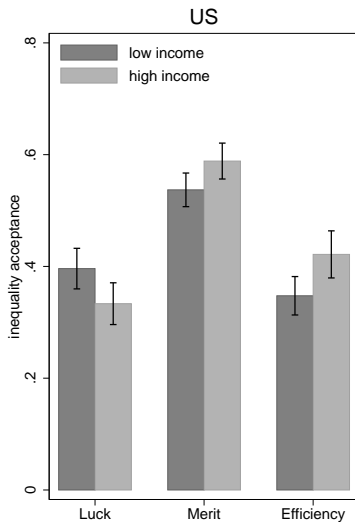# Heterogeneity in inequality acceptance: **Political**
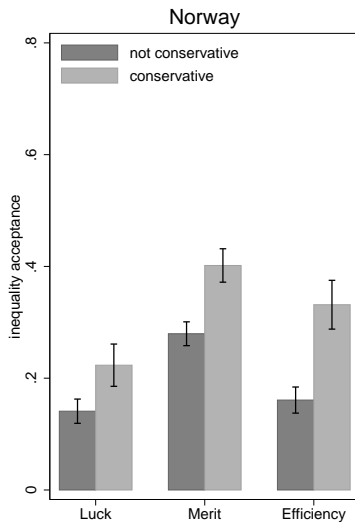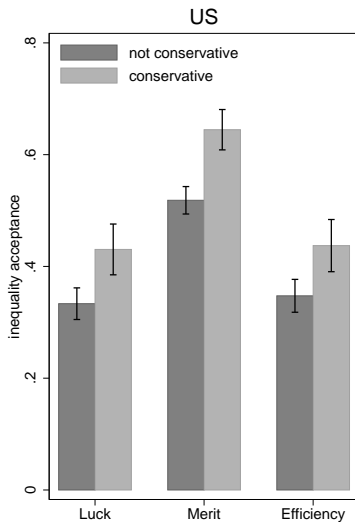
Heterogeneity in inequality acceptance: **Political**

- Conservatives accept more inequality in general.

- Conservatives are not more sensitive to the source of inequality.

- Only in Norway are conservatives more sensitive to the cost of redistribution (but diff-in-diff not significant).

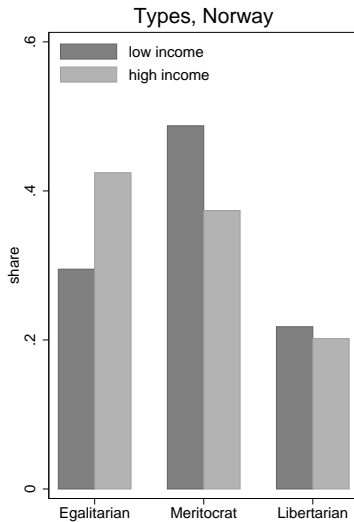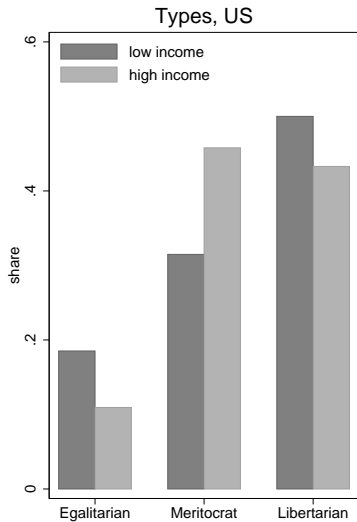# Heterogeneity in fairness views: **Political**

Types, US

Types, Norway
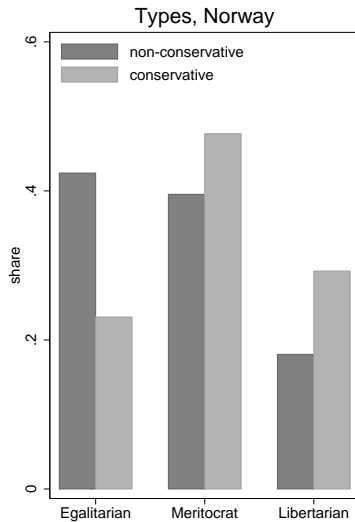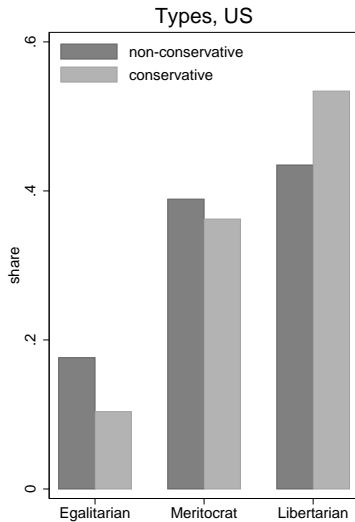
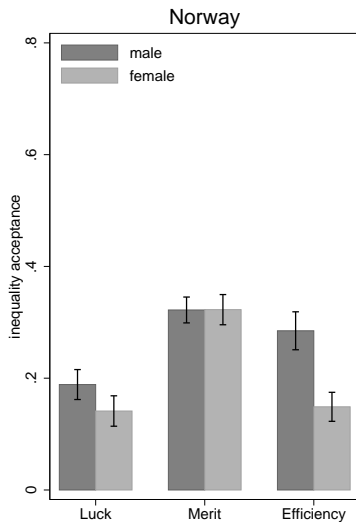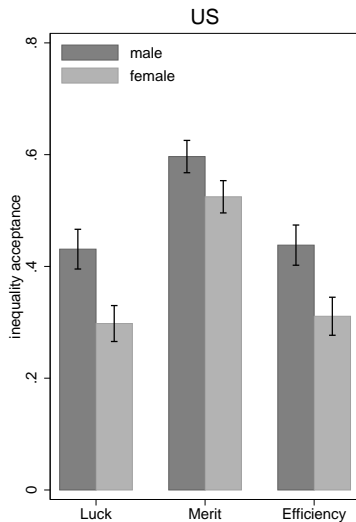# Heterogeneity in inequality acceptance: **Socioec**

Heterogeneity in inequality acceptance: **Socioec**

- There is no socioeconomic gradient in the acceptance of inequality in general.

- Only in the US are high income earners more sensitive to the source of inequality.

  - The socioeconomic gradient is more important to understand meritocracism in the US than in Norway.

- High income earners more sensitive to the cost of redistribution in both countries.

# Heterogeneity in fairness view: **Socioec**

Heterogeneity in inequality acceptance: **Gender**

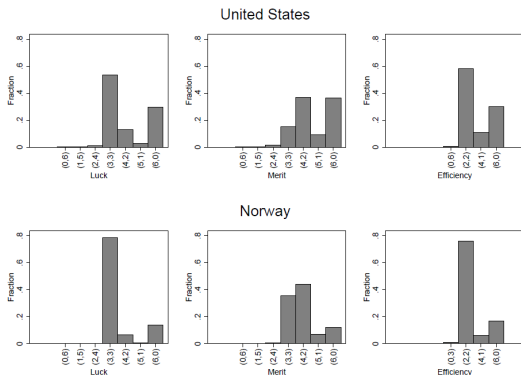# Heterogeneity in inequality acceptance: **Gender**

- Only in the US do males accept more inequality in general.

- There is no gender difference in the sensitivity to the source of inequality.

- Males are more sensitive to the cost of redistribution in Norway.

Heterogeneity in fairness view: **Gender**
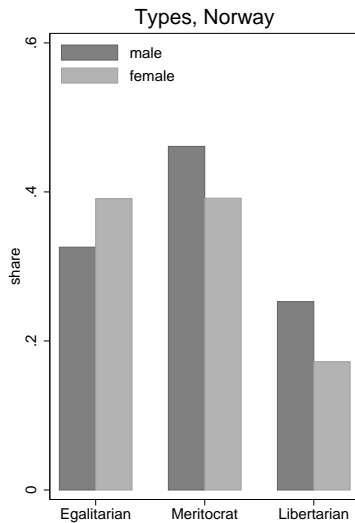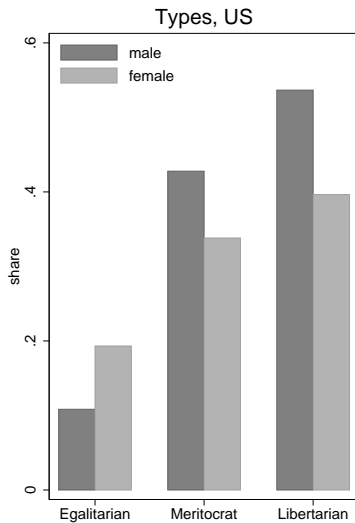
Types, US

Types, Norway

Distribution of choices: Histograms

Figure 2: Distribution of choices

General instructions:

The results from this experiment will be used in a research project. It is therefore important that you carefully read and follow all instructions. Note that you will remain anonymous throughout the experiment. We will only use your Worker ID to assign payments and check that you have not participated in this experiment before.

You will be paid a fixed participation fee of 2 USD and you may, depending on the actions you and others take, earn additional money.

You will be given detailed instructions on your screen before each part of the experiment. Please read the instructions to each part carefully.

The workers, Part 1 – Production phase

The first part of the experiment is a production phase where you are given three assignments to work on.

Go on to the next page to receive instructions for the first assignment.

Assignment 1:
In the first assignment you are asked to work on a sentence unscrambling task for 5 minutes. Your performance will not be measured as there is no right or wrong answer, but we do ask you to work continuously on this assignment.

Description of the assignment:
You will be shown five English words and are asked to form a sentence or an expression by using four of these words. This means that each sentence or expression must only contain four words.

For example, if the words given to you are "sky, blue, is, the, old", then you can construct the sentence:

the sky is blue

The workers, assignments

Assignment 2:

In the second assignment you are once again asked to work on a sentence unscrambling task for 5 minutes.

Assignment 3

In the third assignment you are asked to work on a code recognition task for 5 minutes. For this assignment we will measure your performance by the number of points you receive. You will be informed about your score at the end of the assignment.

The assignment was to tick off each appearance of a specific three digit number given to them from a table with many different three digit numbers.

The workers, Part 2 – Determination of payments

First stage:

Assignment 1: For this assignment, your earnings are determined by a lottery where each of you with equal probability earns 6 USD or 0 USD.

Assignment 2: For this assignment, your earnings are determined in the same way as for assignment 1.

Assignment 3: For this assignment, your earnings are determined by how productive you are. The participant with the highest score earns 6 USD and the other participant earns 0 USD. If you both have the same score, you will be matched with another participant.

Second stage:

A third person could redistribute the earnings.

Survey question about general attitudes to redistribution

The Norstat sample was also asked the following (unincentivized) question:

We now want you to indicate to what extent you agree with the following statement. 1 means that you agree completely with the statement on the left, 10 means that you agree completely with the statement on the right, and the numbers in between indicate the extent to which you agree or disagree with the statements.

A society should aim to equalize incomes.									A society should not aim to equalize incomes.
1	2	3	4	5	6	7	8	9	10

Background questions

- Please indicate your gender.

- Please indicate your age.

- Where do you live? (States in the United States , Regions in Norway)

- What is your household's monthly pre-tax income?

- Which political party would you vote for if there was an election tomorrow?

- What is your highest completed level of education?