

Pre-Analysis Plan
An economic experiment on social preferences with nationally
representative populations: The United States versus Europe

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Contents

1	Introduction	2
2	Research strategy	2
2.1	Recruitment of workers	2
2.2	Recruitment of spectators	2
3	Design	2
3.1	Workers	3
3.2	Spectators	3
3.2.1	Distributive choice	3
3.2.2	Survey question	5
3.2.3	Background questions	6
4	Empirical strategy	6
4.1	Hypotheses	6
4.1.1	Merit and efficiency	6
4.1.2	Comparisons of the United States and Europe	6
4.1.3	Heterogeneity	7
4.1.4	Attitudes to redistribution	7
4.2	Specifications and analysis	7
4.2.1	Hypotheses 1-5	7
4.2.2	The heterogeneity analysis	7
4.2.3	Attitudes to redistribution	8
A	Hypothesis testing	8
A.1	Hypothesis 1	9
A.2	Hypothesis 2	9
A.3	Hypothesis 3	9
A.4	Hypothesis 4	9
A.5	Hypothesis 5	9

1 Introduction

The United States and European countries differ fundamentally in redistributive policies and inequality levels (Alesina and Angeletos, 2005). The present project investigates whether there are also systematic differences between the United States and Europe in social preferences.¹ More specifically, the project studies how sources of inequality (merit and luck) affect inequality acceptance. In order to do this, we run a novel economic experiment on nationally representative samples.

This pre-analysis plan presents the data sources, the structure of the experiment, and the empirical strategy. The first part of the project will compare the United States with only one European country, Norway, as is reflected in the following discussion. Depending on funding, data will also be collected for other European countries.

2 Research strategy

The present project uses a novel approach for collecting experimental data on a nationally representative population. The project combines the infrastructure of an international online market place and the infrastructure of a leading international data-collection agency to run a real effort dictator game with a spectator design (Cappelen, Konow, Sørensen, and Tungodden, 2013). The first part of the research project will be implemented in August 2014. The pre-analysis plan was mainly completed before the research project was implemented, some final polishing was conducted while the implementation took place. The researchers did not have access to the data set before the plan was registered at the AEA RCT trial.

There will be two types of participants in the experiment, *workers* and *spectators*. We first explain how these two groups will be recruited, before we outline the design in the next section.

2.1 Recruitment of workers

The workers in the experiment will be recruited from the international online market place Amazon Mechanical Turk (AMT). AMT is a crowdsourcing web service that specializes in recruiting anonymous workers to complete small tasks online. Workers are recruited by posting an assignment, called a Human Intelligence Task (HIT), on the AMT website. Workers then browse these HITs by title, keywords, reward amount, and so forth, and accept HITs of interest. The HIT announcement used in the present project can be found in the appendix. We plan to recruit 667 workers.

2.2 Recruitment of spectators

The spectators in the experiment will be recruited by using the infrastructure of the data-collection agency Norstat and its collaborator in the US. In each country, we plan to recruit 1000 participants who are nationally representative (+ 18 years old) on observable characteristics.

3 Design

We plan to conduct a version of a real effort dictator game with a *spectator* design. The spectators make a choice that has monetary consequences for two *workers* who have completed a real effort assignment, but not for themselves. In the following, we explain in more detail the design and instructions given to the workers and the spectators.

¹For different perceptions on social preferences, see e.g., Bolton and Ockenfels (2000); Fehr and Schmidt (1999); Konow (2000); Cappelen, Drange Hole, Sørensen, and Tungodden (2007); Almås, Cappelen, Sørensen, and Tungodden (2010). Attitudes towards redistribution have also been investigated in surveys such as the World Value Survey.

3.1 Workers

The workers will sign up for the experiment at the AMT website. They will complete three real effort assignments, but make no distributive choices. For each assignment, each worker is randomly matched with another worker who has also completed the assignment, and the two constitute a pair that is in turn matched with a spectator. Since the behavior of the workers is not essential for the present study, we only provide a discussion of the workers' instructions in relation to the choices made by the spectators. The complete instructions given to the workers are provided in the appendix.

3.2 Spectators

The spectators will be recruited by the survey providers to take part in an economic experiment that consists of two main parts. In the first part of the experiment, they will make an incentivized distributive choice; in the second part, they will answer a non-incentivized survey question about their attitude towards redistributive policies. In addition, they will answer a set of standard background questions. We now explain each part in detail.

3.2.1 Distributive choice

In the first part of the experiment, the spectator decides on the payment for a pair of workers. We will implement three different treatments that allow us to study how different sources of inequality and efficiency considerations affect inequality acceptance. Treatment 1 is designed to examine the participants' willingness to accept inequality when earnings are determined by luck and Treatment 2 is designed to examine the participants' willingness to accept inequality when earnings are determined by merit. Treatment 3 is designed to examine the participants' willingness to accept inequality when equalization causes an efficiency loss. We introduce efficiency by making redistribution costly.

It is costly to equalize payment. We here provide the exact instructions given to the spectators in the three treatments.

Experiment 1 *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.

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 the most productive worker, 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.

Worker A was most 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 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.

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.

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.

3.2.2 Survey question

In the second part of the experiment, the spectators will respond to a non-incentivized survey question about their attitude towards redistributive policies. The survey question is the same in all treatments.

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.

1

2

3

4

5

6

7

8

9

A soci-
ety should
not aim to
equalize
incomes.

10

3.2.3 Background questions

In addition, the spectators will answer the following set of 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?

4 Empirical strategy

4.1 Hypotheses

The experiment is designed to study whether there are different social preferences in the United States and Europe. Our main focus is on comparing how different sources of inequality and efficiency considerations affect inequality acceptance in the United States and Europe. Further, we also study how the distributive behavior in the experiment is associated with attitudes towards redistribution.

4.1.1 Merit and efficiency

We first test whether merit and efficiency considerations cause increased inequality acceptance in *both* the United States and Europe, where we apply a one-sided test of significance since there is no reason to believe that these considerations could cause reduced inequality acceptance. We here test the effect on inequality acceptance of introducing merit (Treatment 2) or efficiency (Treatment 3) considerations relative to a situation where luck is the source of inequality and redistribution is costless (Treatment 1).

Hypothesis 1 *Merit is not causing increased inequality acceptance in the United States or Europe.*

Hypothesis 2 *A cost of redistribution is not causing increased inequality acceptance in the United States or Europe.*

4.1.2 Comparisons of the United States and Europe

Second, we will test whether there is systematically more or less inequality acceptance in the United States than Europe, and whether merit or efficiency considerations work differently in the United States and Europe. We will consider a difference in inequality acceptance as systematic if the level of inequality implemented is either higher or lower for all three treatments in the United States than in Europe. Furthermore, we will consider merit or efficiency considerations to work differently in the United States than in Europe if the effect on inequality acceptance of introducing merit (Treatment 2) or efficiency (Treatment 3) is different in the United States than in Europe.

Hypothesis 3 *There is not systematically more or less inequality acceptance in the United States than in Europe.*

Hypothesis 4 *Merit considerations do not work differently in the United States than in Europe.*

Hypothesis 5 *Efficiency considerations do not work differently in the United States than in Europe.*

4.1.3 Heterogeneity

We will also study heterogeneity in social preferences in the United States and Europe using the background data collected in the survey, where we will focus on political orientation, socioeconomic status, and gender. Specifically, we will test whether there are differences between the following groups along the same three dimensions studied when comparing the United States and Europe.

- **Political orientation:** right-wing and left-wing.²
- **Gender.**
- **Income:** below and above the median in the respective country.
- **Education:** not completed high school, high school completed, higher education.

4.1.4 Attitudes to redistribution

Lastly, we will study how the distributive choices of the spectators relate to the responses to the survey question about their attitude towards redistributive policies. We will do this separately for the United States and each country from Europe included in the analysis.

4.2 Specifications and analysis

We here provide the main robust OLS regressions that will be used in the analysis. Since the first part of the project includes only Norway from Europe, we state the specification for the United States and Norway.

4.2.1 Hypotheses 1-5

Hypotheses 1-5 will be tested by estimating the following regression equation:

$$e_i = \alpha + \alpha_M M_i + \alpha_C C_i + \delta_M M_i N_i + \delta_C C_i N_i + \delta N_i + \epsilon_i, \quad (1)$$

where e_i is the chosen inequality in payment by the spectator³, M_i is an indicator taking the value 1 if individual i had the merit treatment, C_i is an indicator taking the value 1 if individual i had the efficiency treatment, and N_i is an indicator taking the value 1 if individual i is from Norway. The formal statements of Hypotheses 1-5 are provided in the appendix.

4.2.2 The heterogeneity analysis

The heterogeneity analysis for gender will be conducted by estimating the following regression estimation:

$$e_i = \alpha + \alpha^F F_i + \alpha_M M_i + \alpha_M^F M_i F_i + \alpha_C C_i + \alpha_C^F C_i F_i + \delta N_i + \delta^F N_i F_i + \delta_M M_i N_i + \delta_M^F M_i N_i F_i + \delta_C C_i N_i + \delta_C^F C_i N_i F_i + \epsilon_i, \quad (2)$$

²Right-wing is defined as those who would have voted for the Republicans in the United States and for the conservatives (Høyre) or the progress party (Fremskrittspartiet) in Norway. The others are defined as left-wing.

³We calculate inequality as the absolute value of the difference in payment to the two workers divided by total payment.

where F_i is an indicator taking the value 1 if participant i is female. We will use corresponding regression equations for the other dimensions of heterogeneity. The formal statements of the hypotheses on heterogenous effects correspond to Hypotheses 3-5.

4.2.3 Attitudes to redistribution

In order to study whether the spectators' response to the survey question about their attitude towards redistributive policies is associated with their distributive choices in the experiment, we will run the following regression:

$$I_i = \alpha + \alpha^e e_i + \alpha_M M_i + \alpha_M^e M_i e_i + \alpha_C C_i + \alpha_C^e C_i e_i + \delta^e N_i e_i + \delta N_i + \delta_M M_i N_i + \delta_M^e M_i N_i e_i + \delta_C C_i N_i + \delta_C^e C_i N_i e_i + \epsilon_i, \quad (3)$$

where I_i is the response to the survey question. On the basis of this regression, we can for each of the two countries study whether there is an association between the survey response and the distributive choices in the different treatments. Further, we can study whether there are level or treatment differences in survey response between the United States and Norway. Since we consider this part of the analysis more explorative, we do not offer formal statements of the hypotheses tested.

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A Hypothesis testing

On the basis of 3, we can test Hypothesis 1-5:

A.1 Hypothesis 1

$$H0 : \alpha_M \leq 0 \text{ or } \alpha_M + \delta_M \leq 0$$

$$H1 : \alpha_M > 0 \text{ and } \alpha_M + \delta_M > 0$$

A.2 Hypothesis 2

$$H0 : \alpha_C \leq 0 \text{ or } \alpha_C + \delta_C < 0$$

$$H1 : \alpha_C > 0 \text{ or } \alpha_C + \delta_C > 0$$

A.3 Hypothesis 3

$$H0 :$$

$$\delta > 0 \text{ and } \delta + \delta_M < 0$$

or

$$\delta < 0 \text{ and } \delta + \delta_M > 0$$

or

$$\delta > 0 \text{ and } \delta + \delta_C < 0$$

or

$$\delta < 0 \text{ and } \delta + \delta_C > 0$$

or

$$\delta_M < 0 \text{ and } \delta_C > 0$$

or

$$\delta_M > 0 \text{ and } \delta_C < 0$$

$$H1 :$$

$$\delta > 0 \text{ and } \delta + \delta_M > 0 \text{ and } \delta + \delta_C > 0$$

or

$$\delta < 0 \text{ and } \delta + \delta_M < 0 \text{ and } \delta + \delta_C < 0$$

A.4 Hypothesis 4

$$H0 : \delta_M = 0$$

$$H1 : \delta_M \neq 0$$

A.5 Hypothesis 5

$$H0 : \delta_C = 0$$

$$H1 : \delta_C \neq 0$$

