Pre-Analysis Plan: Fair Institutions.*

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1 Introduction

A large literature has emerged over the past decades that focuses on detailing individual's fairness preferences, and how those preferences influence important economic decisions. In recent years, papers in this literature have studied how individuals' fairness preferences condition on the institutions (rules of the game) and choices that led to the observed distribution of earnings: for example, whether earnings inequality is due to differences in merit or differences in luck (see for example Almås et al., 2020). Surprisingly, given the fact that the literature has shown that fairness preferences do condition on institutions, there is little research on individual preferences over the institutions themselves, and how these preferences relate to individuals' preferences over the distribution of ex post earnings.

Preferences over institutions are also arguably a first-order concern if we are concerned with linking fairness preferences with redistribution since, in

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most real-world applications, redistribution happens through institutions. That is, societies generally choose the rules of the game—e.g. an income tax rate—prior to making individual decisions such as to how much to work. Redistribution, therefore, occurs through institutions rather than through the ex post changes in earnings.

Based on this, we believe that adding information on preferences over institutions, rather than just focusing on preferences conditional on institutions, will illuminate whether preferences for redistribution through institutions systematically differ from preferences for redistribution through ex post mechanisms. Additionally, this research can uncover important heterogeneity in individuals who have previously been classified as the same fairness type. For example, individuals with the same ex post preferences may have different institutional preferences ex ante (vice versa). By studying preferences over institutions, we will get a more complete picture of individuals' preferences, which may also give important insight into why individuals condition their ex post distributional preferences on institutions (and why not).

This pre-analysis plan presents the data sources, the survey, the structure of the experiment, our ex ante hypotheses, and the empirical strategy for the project.

2 Research Strategy

To collect experimental data on nationally representative samples, we combine the infrastructure of an international labor market and the infrastructure of a leading international data-collection agency to run a real effort dictator game with a spectator design Almås et al. (2020). The research project was be implemented in January, 2024. This pre-analysis plan was submitted to the AEA RCT trial prior to the researchers accessing the data.[1]

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

[1]Due to an administrative error, the researchers were sent a copy of the data prior to submitting the PAP. However, none of the researchers conducted any analysis on the data, or even opened the data file.

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 (mTurk). mTurk 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 mTurk website. Workers then browse these HITs by title, keywords, reward amount, and so forth, and accept HITs of interest. We plan to recruit 100 workers.

2.2 Recruitment of spectators

The spectators are recruited through the survey provider, *Faktum AS*, to take part in an economic experiment. We plan to recruit at least 1,000 US participants and 1,000 Scandinavian participants, where each group is nationally representative (18+ years old) on a set of observable characteristics (gender, age and geography).

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 complete a real effort assignment, but not for themselves. We plan on randomly selecting 10% of the spectator decisions to implement.

3.1 Workers

The workers will sign up for the experiment at the MTurk website. We will only recruit workers who live in the US. They will complete four real effort assignments, but will make no distributive choices. For each assignment, each worker is matched with another worker who has also completed the same assignment, and the two constitute a pair that is in turn matched with a spectator. They will receive a fixed payment for taking the HIT as well as a bonus payment based on luck and on the spectator choice explained in the

following section. 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 make incentivized choices that have real consequences for two workers, but not for themselves. They also answer a set of attitudes questions and a standard set of background questions. We now explain each part in detail.

Our experiments are designed to closely mirror the setup of Almås et al. (2020), and will consist of a between-individual 2 × 2 design. Each spectator is randomly assigned to one of the four treatments. For the purpose of comparability, all treatments will follow the same basic structure. The instructions of all treatments are included at the end of this application.

3.3 Benchmark Design (Luck)

In the benchmark condition, each pair of workers will be informed after they have completed the assignment, that one of them was randomly selected for a 6 USD payment for the assignment while the other worker would not earn any additional payment. The spectators will choose, after the workers completed the task, whether they want to keep this payment plan or change their payments to any other payment plan from the set: $\mathbf{P} \equiv \{(6,0),(5,1),(4,2),(3,3)\}$.

Treatment: Institutions In the "Institutions" treatment, the spectators will choose a payment plan $(x, y) \in \mathbf{P}$ ex ante, and this plan will be communicated to the workers before they complete the task.

To help identify mechanism, we run two versions of the "Institutions" treatment, a "Default" treatment and a "No-Default" treatment.

Treatment: Efficiency In the "Efficiency" treatments, there will be a cost of redistribution. If the spectator chooses to change the workers' earnings, allocating an additional 1 USD to the second worker will reduce first

worker's earnings by 2 USD. In the *Outcomes* × *Efficiency* treatment, the spectators will decide whether to keep the (6, 0) payment plan or change the workers' earnings to any other payment plan in $\mathbf{P_E} \equiv \{(6,0),(4,1),(2,2)\}$. In the *Institutions* × *Efficiency* treatment, the spectators will choose a payment plan in $\mathbf{P_E}$ ex ante.

Survey Population: USA/Scandinavia Lastly, we will split our survey population between a representative sample of US residents and Scandinavian residents. This will allow us to study whether the previously-documented differences between US/Scandinavian preferences in ex post outcomes is similar to the differences in the preferences over ex ante institutions.

For each treatment, we plan on gathering spectator data from 250 American respondents and 250 Scandinavian respondents. Additionally, we plan on having a 10/2 ratio of spectators and worker tasks, which translates into 50 workers per treatment (four tasks per worker). Therefore, for the Experiment we require 1,250 US spectators, 1,250 Scandinavian spectators, and 125 American workers.

Table 1: Treatments: Number of Spectators

	USA	Scandinavia
Outcomes	250	250
Institutions	250	250
Institutions No Default	*250*	*250*
Outcomes Efficiency	250	250
Institutions Efficiency	250	250
Total	1,250	1,250

3.3.1 Survey and background questions

The spectators will answer one question on their risk attitude, two questions on their beliefs about the workers' risk attitude, and four questions on their policy views.

In addition, the spectators will answer a standard set of background questions concerning gender, age, education, and income. We provide the

exact questions in B.

4 Theoretical Framework and Research Questions

We derive comparative predictions regarding preferences over institutions and ex post outcomes based on a simplified version of the theory of ex ante and ex post fairness preferences presented in Andreoni et al. (2020). Loosely, the theory predicts that individuals have a preference for equalizing expected earnings at each stage (ex ante and interim).

Our experiment will follow the classic spectator design for measuring conditional fairness preferences, where a spectator will choose a payment scheme for two workers. The main treatment variation is whether the payment scheme is chosen ex ante (institutions), or ex post. In our experiment, institutions are chosen behind a "veil of ignorance" (i.e. types are unknown). Therefore, ex ante, both workers have an equal expected payoff under all payment schemes. Ex post, however, expected earnings are only equal under one of the payment schemes (equal split). This implies the following predictions:

Prediction 1 *Respondents are less inequality averse when choosing institutions (the rules of the game), relative to choosing to redistribute earnings ex post.*

We will test this hypothesis across two different treatments, "Luck" and "Efficiency," detailed below.

Additionally, we will gather data from two different populations, US respondents and Scandinavian respondents. Previous research has established that Scandinavian respondents exhibit a greater tendency to equalize payoffs ex post relative to US respondents (Almås et al., 2020). Based on the theory, all respondents should display a lower tendency to equalize payoffs ex ante. The theory, however, does not give a clear prediction as to whether the gap between Scandinavian and US respondents should increase or decrease when considering institutional preferences. Therefore, our ex ante prediction is neutral:

Prediction 2 *The difference between preferences over institutions of Scandinavian respondents and US respondents is equal to the difference in preferences for ex post redistribution.*

Lastly, we note that Prediction 1 implies that the number of individuals classified as "Egalitarian" should decrease in the institution treatment. We will present descriptive evidence on number of types broken down by country and treatment, but will not present empirical tests to avoid multiple test of the same hypothesis.

5 Empirical strategy

This section outlines the hypotheses and empirical strategy of the project.

5.1 Hypotheses

We test the following three hypotheses, based on the predictions of the theoretical framework.

Hypothesis 1 *Respondents accept more inequality when they decide on institutions compared to ex-post outcomes.*

Hypothesis 2 *Respondents accept as much inequality when they decide on institutions compared to ex-post outcomes in the Efficiency treatment, relative to the Luck treatment.*

Hypothesis 3 *Across both treatments (Luck and Efficiency), the difference between inequality acceptance in the US and Scandinavia is the same when deciding on institutions compared to deciding on ex-post outcomes.*

5.2 Specifications and Analysis

In the analysis, we use two measures of the inequality acceptance of spectator i. First, we measure the inequality implemented by spectator i:

$$u_i = \frac{|Income\ Worker\ A_i - Income\ Worker\ B_i|}{Total\ Income} \in [0, 1], \qquad (1)$$

where $Income\ Worker\ A_i$ is the income allocated to the worker with the \$6 USD initial earnings and $Income\ Worker\ B_i$ is the income allocated to the worker without initial earnings. This inequality measure is equivalent to the Gini coefficient in a two-person situation. It is equal to one if the spectator decides to transfer nothing to the worker without initial earnings and zero if the spectator decides to equalize the incomes between the two workers.

Second, as a descriptive measure, we measure inequality acceptance as an indicator variable, u_i', for whether the spectator decides to equalize the income of the two workers, i.e., whether the spectator is not willing to accept any inequality between them.

The main empirical specification we will use to study the treatment effects of institutions on inequality acceptance is:

$$\begin{aligned} u_i = \alpha &+ \beta_1 Institutions_i + \beta_2 \textit{Efficiency}_i \\ &+ \beta_3 Institutions_i\ \textit{Efficiency}_i + \gamma \mathbf{X}_i + \epsilon_i. \end{aligned}$$

where $Institutions_i$ and $\textit{Efficiency}_i$ are indicator variables for spectator i being in the Institutions or the Efficiency treatments, and $\mathbf{X}_i$ is a vector of control variables. Outcomes with no redistribution cost is the base treatment, and thus the estimated values of β_1 and β_3 provide us with the causal effects of choosing institutions, with or without cost of redistribution, rather than redistributing earnings ex post. We will also report the results both with and without control variables. We use the following variables for individual background control (detailed below): risk preference, belief about the workers' risk preference, age, gender, education, income.

Next, to compare country differences, we will use the following empirical specification:

$$\begin{aligned} u_i = \alpha &+ \delta_0 Institutions_i + \delta_1 Scandinavia_i \\ &+ \delta_2 Institutions_i\ Scandinavia_i + \gamma \mathbf{X}_i + \epsilon_i \end{aligned} \tag{2}$$

In our main analysis we will use Treatments 1-4 to estimate this specification. However, to provide insight on mechanisms, we will also run an analysis of this specification using only Treatments 1 and 5 (all treatment questionnaires are detailed in the appendix.).

In addition, in an exploratory analysis, we will study how spectators' inequality acceptance relates to their attitudes to inequality and redistribution, beliefs about the sources of inequality, and political standing. The main empirical specification used in this analysis is:

$$a_i = \alpha + \beta_u u_i + \gamma \mathbf{X}_i + \epsilon_i \tag{3}$$

where a_i is spectator i's answer to each of the four policy questions we ask.

5.3 Definition of control variables

We will use control variables that were collected as part of the experiment. They will be coded as follows:

- **Age:** In years.
- **Gender:** Coded as a dummies for responding female and Other.
- **Income:** Coded as a dummy for having above the median income within each country.
- **Political orientation:** Coded 1-5 on Left-Right spectrum.
- **Education:** Coded as a dummy for having bachelor degree education or higher.

Additionally, we will explore the impact of risk attitudes and beliefs of worker's risk attitude.

- **Risk attitude:** Coded 1-5 based on Likert scale.
- **Belief about workers' risk attitude:** 0 to 100, number of workers believed to quit the task.

References

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Andreoni, J., Aydin, D., Barton, B., Bernheim, B. D., and Naecker, J. (2020). When fair isnât fair: Understanding choice reversals involving social preferences. *Journal of Political Economy*, 128(5):1673–1711.

A Instructions: Spectators, USA

Treatment 1: Baseline (Outcomes × Default (6, 0))

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.

Worker A and worker B were each offered a participation compensation of 2 USD regardless of what they were paid for completing the assignment. After they had completed the assignment, they were told that it was randomly decided that one of them would earn an additional 6 USD for the work on the assignment while the other would not earn anything additional for the work on the assignment. However, they were also told that a third person could change how the additional earnings would be divided between the two of them 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 change 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 randomly selected to earn 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 change the earnings:

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

I do change the earnings:

- 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.

Treatment 2: Institutions × Default (6, 0)

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. In a few days two individuals, let us call them worker A and worker B, will be recruited via an international online market place to conduct an assignment.

Worker A and worker B will each be offered a participation compensation of 2 USD regardless of what they are paid for completing the assignment. Before completing the assignment, they will be told that their earnings from the assignment will be randomly determined and that one worker would earn 6 USD for the assignment and the other worker would earn nothing for the assignment. They will also be told that a third person was given the opportunity to change how the additional earnings would be divided between the two of them and thus determine how much they will be paid for the assignment. Prior to completing the assignment the workers will be informed about the third person's decision on the division of their earnings.

You are the third person and we now want you to choose how the earnings will be divided between the two workers. Your decision will be completely anonymous. The workers will receive the payment according to your choice for the assignment within a few days, but will not receive any further information.

Please state which of the following alternatives you choose:

I do not change the earnings:

- one worker is paid 6 USD and the other worker is paid 0 USD.

I do change the earnings:

- one worker is paid 5 USD and the other worker is paid 1 USD.
- one worker is paid 4 USD and the other worker is paid 2 USD.
- one worker is paid 3 USD and the other worker is paid 3 USD.

Treatment 3: Outcomes × Default (6, 0) × 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.

Worker A and worker B were each offered a participation compensation of 2 USD regardless of what they were paid for completing the assignment. After they had completed the assignment, they were told that it was randomly decided that one of them would earn an additional 6 USD for the work on the assignment while the other would not earn anything additional for the work on the assignment. However, they were also told that a third person could change how the additional earnings would be divided between the two of them 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 change 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 randomly selected to earn 6 USD for the assignment, thus worker B earned nothing for the assignment. If you choose to change the earnings, allocating an additional 1 USD to worker B will reduce worker A's earnings by 2 USD. Please state which of the following alternatives you choose:

I do not change the earnings:

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

I do change the earnings:

- 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.

Treatment 4: Institutions × Default (6, 0) × 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. In a few days two individuals, let us call them worker A and worker B, will be recruited via an international online market place to conduct an assignment.

Worker A and worker B will each be offered a participation compensation of 2 USD regardless of what they are paid for completing the assignment. Before completing the assignment, they will be told that their earnings from the assignment will be randomly determined and that one worker would earn 6 USD for the assignment and the other worker would earn nothing for the assignment. They will also be told that a third person was given the opportunity to change how the additional earnings would be divided between the two of them and thus determine how much they will be paid for the assignment. Prior to completing the assignment the workers will be informed about the third person's decision on the division of their earnings.

You are the third person and we now want you to choose how the earnings will be divided between the two workers. Your decision will be completely anonymous. The workers will receive the payment according to your choice for the assignment within a few days, but will not receive any further information.

Note that allocating an additional 1 USD to the second worker will reduce first worker's earnings by 2 USD. Please state which of the following alternatives you choose:

I do not change the earnings:

- one worker is paid 6 USD and the other worker is paid 0 USD.

I do change the earnings:

- one worker is paid 4 USD and the other worker is paid 1 USD.
- one worker is paid 2 USD and the other worker is paid 2 USD.

Treatment 5: Institutions x No Default

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. In a few days two individuals will be recruited via an international online market place to conduct an assignment.

The workers will each be offered a participation compensation of 2 USD regardless of what they are paid for completing the assignment. Before completing the assignment, the workers will be told that a third person chose how the earnings for completing the assignment would be divided between the two of them, and they will be informed about the third person's choice.

You are the third person and we now want you to choose how the earnings will be divided between the two workers. Your decision will be completely anonymous. The workers will receive the payment according to your choice for the assignment within a few days, but will not receive any further information.

Please state which of the following alternatives you choose:

- one worker is randomly selected to be paid 6 USD and the other worker is paid 0 USD.
- one worker is randomly selected to be paid 5 USD and the other worker is paid 1 USD.
- one worker is randomly selected to be paid 4 USD and the other worker is paid 2 USD.
- both workers are paid 3 USD.

B Survey and background questions

Survey - Risk Attitude

Own risk preference To what extent do you agree or disagree with the statement: "You are generally willing to take risks."

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Belief about worker's risk attitude Out of 100 workers, how many do you think would quit the job after learning that they have a 50 percent chance to earn 6 USD in addition from the assignment, and a 50 percent chance to earn nothing in addition?

- 0 to 100

Out of 100 workers, how many do you think would quit the job after learning that they would earn 3 USD in addition from the assignment?

- 0 to 100

Survey - Policy View

View on inequality Do you think income differences between rich and poor people are a problem?

- Not a problem at all
- A small problem
- A problem
- A serious problem
- A very serious problem

Belief about source of inequality To what extent do you think that differences in income are caused by differences in peopleâs effort over their lifetime or rather by luck?

- Only luck
- Mainly luck
- Equally important
- Mainly effort
- Only effort

Support for redistribution To what extent do you agree or disagree with the statement: *The national government should aim to reduce the economic differences between the rich and the poor.*

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Political standing How would you describe your attitude on economic policy?

- Very left-wing
- Left-wing
- Moderate
- Right-wing
- Very right-wing

Background Controls

What is your age?

What is your gender?

What is the highest level of education you have completed?

Is your annual income above or below $48,000 / 317,000kr?