Pre-Analysis Plan

Principles and Outcomes – A test of revealed social preferences

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Summary

Experimental economics has provided ample evidence that people frequently behave non-selfishly in situations where they can reduce their own payoff to help others (e.g. see Fehr et al 2006). It is typically assumed that such pro-social behaviour arises because experimental subjects are motivated by a social preference. However, this assumption has so far not been tested. We test this assumption by conducting a survey experiment focusing on the consistency between people's preferences towards distributive justice and their choices over outcomes. In particular, we will look at the role of social norms in shaping choices as opposed to preferences and how this might affect the consistency between the two.

Research Design

The survey experiment will be conducted on Prolific Academic with 1,200 subjects from the UK, US and continental Europe. The experiment consists of three treatments, each using a different institutional mechanism to elicit people's preferences over distributive justice: An impartial spectator treatment, a veil of ignorance treatment and a treatment in which one's position in the group is known. Subjects then have to firstly decide on the principle of distributive justice they most agree with (inequality aversion, maximin, meritocracy or utilitarianism) and play a coordination game to identify whether there is a social norm guiding their choice. Secondly, subjects are told that they will participate in a performance quiz and have to choose a payoff distribution they would like to implement in the group. Each payoff distribution thereby corresponds to one of the four previously mentioned principles of justice. Their performance on the quiz and the distribution chosen will determine their payoff after completing the experiment. Subjects are then asked again to play a coordination game to test whether their choice of distribution was guided by a social norm. Lastly, subjects are asked to play a one-shot public goods game.

The experiment addresses four main questions:

1. Is people's pro-social behaviour in experimental settings consistent with their social preferences? In other words, is there evidence consistent with the assumption that pro-social behaviour is motivated by social preferences?
2. Does the mechanism for eliciting social preferences affect the consistency of these preferences with pro-social behaviour?
3. Do the elicited social preferences and their consistency with pro-social behaviour in a distributive task affect pro-social behaviour in a public goods game?
4. Do people's pro-social behaviour reflect their beliefs about social norms within a group?

We will answer question 1. by comparing subjects' choice of principle with their chosen distribution. Question 2. will be tested by comparing people's choices across the three different treatments. Question 3. will be answered by testing whether subjects' public goods game contribution can be explained by their chosen principle and chosen distribution and to answer question 4. we will examine whether social norms exist in the coordination game and whether beliefs about these norms determine subjects' choices.

Empirical Strategy

To identify whether pro-social behaviour of subjects is consistent with their social preferences, reflects social norms and to test whether the mechanism for eliciting these preferences affects their consistency we will estimate the following model:

(1) $$D_{t,i} = \beta_0 + \beta_1 P_{t,i} + \beta_2 N_{t,i} + \beta_3 \lambda_{t,i} + \upsilon_{t,i}$$

Whereby D is the outcome measured as the chosen distribution by subject i in treatment t, P is the chosen social preference, N the elicited social norm in the distributive task, λ a vector of controls including age, gender, nationality, risk-aversion, income and student status and υ is the error term.

To identify whether there is a causal relationship between elicited social preferences and public goods game contributions we will estimate the following additional model:

(2) $$C_i = \beta_0 + \beta_1 P_i + \beta_2 D_i + \beta_3 \lambda_i + \upsilon_i$$

Whereby C is the outcome variable measured as subject i's contribution to the one-shot public goods game, P is the chosen principle, D the chosen distribution, λ the vector of controls and υ the error term.

Lastly, to estimate whether beliefs about social norms shape social preferences, rather than just social behaviour in the distributive task, we will estimate a third additional model:

(3) $$P_{t,i} = \beta_0 + \beta_1 N_{t,i} + \beta_2 \lambda_{t,i} + \upsilon_{t,i}$$

Whereby P is the principle chosen by subject i in treatment t, N is the elicited social norm in the principle decision, λ the vector of controls and υ the error term.

Hypotheses

H_1: There is a significant difference between subjects' chosen principle and chosen distribution.

H_2: There is a significant difference in the level of consistency between chosen principles and chosen distributions across treatments.

H_3: There is a significant positive relationship between the level of pro-sociality of subjects' chosen principle and distribution and their contribution in the public goods game.

H_4: Social norms primarily influence subjects' choice of distribution in the group but not their choice of principle.

Model specification

Previous research has found risk-aversion to be an important factor in determining peoples' distributive preferences, particularly behind a veil of ignorance (Carlsson et al. 2003, Schildberg-Hörisch 2010). To account for this potentially biasing factor we will include a control variable for risk-aversion into our model. We will further control for participants' income as various studies have previously found a causal link between income-levels and

preferences for redistribution (see e.g. Esarey et al. 2012, Owens and Pedulla 2014, Naumann et al. 2015).

Previous research has also found participants' gender (Alesina and La Ferrara 2005, Rehm 2005) and nationality to influence distributive preferences; particularly, whether participants live in the United States or Europe affects their preferred level of redistribution (Alesina and Glaeser 2004). In addition to these two factors we will also control for age and student status, as economics students have been found to be less inequality averse in experimental settings than the average population (Fehr et al. 2006), which may further bias our estimation.

Weighting

The subjects participating in our experiment will be registered Prolific Academic participants from the US, UK and continental Europe. Unlike other online subject pools like Amazon's Mechanical Turk, Prolific verifies participants' identity; however, our sample is nonetheless not representative of the general populations of each country. We will therefore weight respondents, where appropriate, based on the age, gender and income distributions of the countries included in our sample.

Robustness Checks

Self-interest: A further potential principle which could guide subjects' choice of principle and outcome, other than the four principles mentioned previously, is self-interest. To account for this potential explanation, we will estimate whether people's performance in the sample quiz in the non-veil of ignorance treatment determines their subsequent choice of distribution and principle by estimating the following additional two models:

(4) $$P_i = \beta_0 + \beta_1 Q_i + \beta_2 \lambda_{t,i} + \upsilon_{t,i}$$

(5) $$D_i = \beta_0 + \beta_1 Q_i + \beta_2 \lambda_{t,i} + \upsilon_{t,i}$$

Whereby P and D are the principle and distribution chosen by subject i, respectively, Q is the estimated quintile of subject i in the final quiz based on the answers to the sample questions, λ the vector of controls and υ the error term. If subjects are motivated by self-interest in their choice of principle and distribution and are aiming to maximise their own pay-off, those estimated to perform at the top of the distribution would choose either meritocracy or utilitarianism, those estimated to perform in the middle would choose inequality aversion and those at the bottom would choose maximin.

Consistency: A further concern regarding the validity of our estimation may be related to the determinants of why subjects are consistent or not consistent across the two choices. It may be the case that subjects are aware of the distributions corresponding to particular principles and want to appear consistent in front of the experimenters. Whilst we cannot directly test for this possibility, we can estimate whether the probability of being consistent across choices is determined by any of the demographic control variables. On the other hand, it may also be the case that subjects are more consistent in a particular treatment, as the institutional mechanism employed allows preferences to influence distributive choices more closely or

social norms influence distributive choices less (H_2). We will therefore estimate the following binary logit model:

$$Y_i = \beta_0 + \beta_1 T_{t,i} + \beta_3 \lambda_{t,i} + \upsilon_{t,i} \quad (6)$$

Whereby Y is a binary outcome variable equal to 1 if subject i's choice of principle and outcome is consistent, T is the treatment assigned to subject i, λ the vector of controls and υ the error term.

Comprehensiveness: Given the complexity of the distributive choice participants are expected to make, it may be the case that some participants choose a distribution at random if they do not understand the decision problem, instead of expressing a genuine preference or reflecting expectations about social norms. To account for this potential biasing factor, we are including a question asking for feedback at the end of the demographic questions. As an additional robustness check we will estimate our models including all participants as well as excluding those who mentioned being confused by the distributive choice in the feedback section. Based on our pilot results we estimate this group to be very small (1 out of 22 pilot participants mentioned the distributive choice to be somewhat confusing).

Additional Analysis

Heterogenous treatment effects: We will test the effects of our three treatments on subjects' choices of principle, outcome and public goods game contribution conditional on subjects' characteristics such as level of risk-aversion, income-level, gender, age, student status and nationality. We will further test whether subjects' choice of principle conditional on these demographic characteristics determines their decisions over outcomes.

Sub-group analysis: We will use demographic variables such as risk aversion, income-level, nationality and gender to split our sample in different subgroups and test whether the consistency of subjects' choice of principle and choice of outcome differs between these groups. We will further test whether our treatments affect subjects' choices differently among these subgroups and whether the effects on public goods game contributions differ across these groups.

Multi-Mode Analysis: We will replicate the experiment in a laboratory setting at King's College London to account for potential measurement error caused by the experimental mode (Duch et al. 2019). We will do so by testing whether subjects' choices differ systematically between the online survey experiment and the laboratory setting.

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