

Pre-Analysis Plan

Main Research Questions

The research project aims at answering the following research questions:

Q1. Is there heterogeneity with regard to how people's approval of "repugnant transactions" changes, when there is a substantial increase in the incentives related to these transactions, i.e., are there different "ethical types" and what is their empirical distribution in Germany? In particular, are there "ethicists," who disapprove of a monetary offer in exchange for a repugnant transaction only if incentives are excessively high, or who become less approving of the offer with excessively high incentives and "economists," who become more approving of the offer with high incentives?

Q2. Do ethicists become more likely to approve the repugnant transaction if they are informed that the person receiving the offer would also be willing to participate in the repugnant transaction for a low monetary payment? If yes, how large is the effect of changing the belief about the person's individual costs of taking the action? How large is the effect of reducing the probability that the offer will be implemented? How do economists react to this kind of information?

Q3. A. Do people believe that larger incentives go along with people participating in the repugnant transaction who have higher reservation prices/personal costs? B. Do the different ethical types differ with respect to their beliefs about the average reservation price of people who are willing to partake for a very high monetary amount suggesting that the difference in the responds to excessive incentives might be explained by differences in beliefs? C. Do the ethical types differ with respect to their beliefs about the fraction of participants accepting the offer when incentives are very high?

Experimental design

In order to answer these research questions the project employs the following experimental design:

In the online experiment the participants decide whether to allow the experimenter to offer a third person monetary compensation of varying amounts for registering as a bone marrow donor. The experiment consists of five parts and a post-experimental questionnaire, and follows a 2x2x2 factorial design. The first factor varies between subjects and alters whether the participants i) reveal their willingness-to-pay for the offer being made or not, or ii) make a discrete decision whether to approve the offer or not by choosing between the options "Approve," "Do not approve," and "Undecided: Let chance decide." The second factor varies within subjects and alters whether the

participant makes her decision for a low/regular monetary amount (in treatment “LOW”) or a very high monetary amount (in treatment “HIGH”). The order of these two treatments is randomly varied in Part 1 and Part 2 of the experiment. Part 3 repeats HIGH but i) in the treatment condition (“TREATMENT”) the participants are informed that, even if they approve the offer, the offer is made only if the person would be willing to accept the offer for the low monetary amount and ii) in the low probability condition (“LOW_PROB”) the participants are informed that, even if they approve the offer, with a certain probability the offer is not made.¹ Whether a participant participates in TREATMENT or LOW_PROB varies between subjects. Part 4 (“UG”) elicits the behindness aversion of all participants using responder decisions in an ultimatum game. In Part 5 (“BELIEFS”) participants’ beliefs about reservation prices are assessed. Participants are asked to state their beliefs about the fraction of people who are willing to register as a bone marrow donor for various monetary amounts of compensation. Finally, a post-experimental questionnaire (“QUEST”) asks participants whether they consider the offer in HIGH to be coercive, and elicits risk-preferences, a psychological measure of envy, and basic demographics.

Relation between Research Questions and Design

Parts 1 and 2 help to answer research questions Q1. Part 3 helps to answer research questions Q2. In particular, a difference in outcomes between TREATMENT and HIGH for ethicists indicates that they take the potential costs of a person participating in a repugnant transaction into account. The comparison between TREATMENT and LOW_PROB helps to dissect the effect of reducing the probability that the offer will be implemented and of changing the belief about a participant’s costs of taking the action. Measuring behindness aversion in Part 4 allows investigating the degree to which different types (and differences in the treatment effect) can be explained by differing social preferences. Part 5 helps answering research questions Q3.

Sample

I will employ the full sample of participants who complete the online experiment. As a robustness check, I plan to consider the sample consisting only of participants who pass the screener, a question administered to check whether a participant was paying attention to the instructions.

Preliminaries

1. The main outcomes of interest are i) the strength of preference for the offer being made or not, measured by a participant’s willingness-to-pay (WTP)

¹ This probability is obtained in an auxiliary session and corresponds to the average empirical belief about the fraction of participants rejecting the offer for the low monetary amount.

(subsequently abbreviated “D1”) and ii) the discrete decision whether to approve the offer or not (subsequently abbreviated “D2”). To get a sense of the data, I will present the distribution of WTPs (D1) as well as of the discrete choices (D2).

2. For outcome D1, I define three types of participants (cf. Ambuehl et al., 2015). An “ethicist” is a participant whose WTP to disapprove the offer increases from LOW to HIGH (or, if you will, whose WTP to approve the offer decreases from LOW to HIGH); an “economist” is a participant whose WTP not to make the offer decreases from LOW to HIGH; “neutralists” have the same WTP to approve or disapprove the offer in both LOW and HIGH.
3. For outcome D2, I define four types of participants: A “true ethicist” approves of making the offer in LOW but not in HIGH; a “true economist” approves of the offer in HIGH but not in LOW; a “libertarian” approves of the offer in both LOW and HIGH; a “deontologist” disapproves of making the offer in both LOW and HIGH.²
4. As a consistency check, I compare the distribution of D2-types with the distribution of D1-types after discretizing the latter, i.e., I compare, for instance, the fraction of D2-participants who do not approve the offer with the fraction of D1-participants with a positive WTP for not approving the offer separately in LOW and HIGH.

Analysis

In the subsequent outline of the analysis, I will always state the treatment/part of the experiment that I analyze, before specifying what I specifically intend to analyze and what I hypothesize.

Main Analysis

1. LOW and HIGH: D1: Analysis of the distribution of the ethical types defined by D1 using a histogram and by plotting the WTPs in HIGH by the WTPs in LOW.³ Analysis of the distribution of the ethical types defined by D2 using a histogram.

² To be precise, a participant is a true ethicist if she approves of making the offer in LOW but is indifferent or disapproves in HIGH or if she approves or is indifferent in LOW but disapproves in HIGH. Equally, a participant is a true economist if she disapproves of making the offer in LOW but is indifferent or approves in HIGH or if she disapproves or is indifferent in LOW but approves in HIGH. Note that the four types only represent a subset of all participants, because some participants might be indifferent between approving the offer or not in both LOW and HIGH.

³ Of interest is also a comparison of the WTPs between participants with a WTP for making the offer and participants with a WTP for not making the offer and a comparison of the proportion of the four D2-types with a discretized version of D1-types (where true ethicists (economists) switch from a negative (positive) WTP for not making the offer to a positive (negative) from LOW to HIGH and deontologists (libertarians) have a positive (negative) WTP for both offers).

2. TREATMENT vs. HIGH: D1: Two-sided t -test testing whether the WTP in TREATMENT differs significantly from HIGH for participants defined as ethicists. This allows testing the main hypothesis, i.e., that ethicists with information about the reservation price of the person receiving the offer have a stronger preference for approving the repugnant transaction than ethicists without this information. Analogous for D2 based on participants defined as true ethicists using a one-sided test of proportions⁴ of the fraction of participants approving the offer.
3. TREATMENT vs. LOW_PROB: D1: Two-sided t -test testing whether the WTP in TREATMENT differs significantly from LOW_PROB for participants defined as ethicists. This allows to dissect the treatment effect and test the hypothesis that ethicists with information about the reservation price of the person receiving the offer are more likely to approve of the transaction than ethicists without this information but who know that the likelihood of the transaction being conducted is decreased by an amount equivalent to the one induced in TREATMENT. Analogous for D2 based on true ethicists using a two-sided test of proportions.
4. BELIEFS: D1: Two-sided t -tests testing whether ethicists, neutralists, and economists differ in their average beliefs about the reservation prices of people who are willing to accept the offer for the high payment.⁵ This allows testing the hypothesis that ethicists, neutralists, and economists do not differ in their beliefs about the reservation prices of people who accept the offer for the high payment. Similarly, two-sided test of proportions testing whether ethicists, neutralists, and economists differ in their beliefs about the fraction of participants accepting the offer for the high payment. Analogous for the types defined by D2.

Robustness Analysis

5. LOW and HIGH: Separate regressions of the WTP in LOW and of the WTP in HIGH on all controls (beliefs about reservation prices, risk-preferences, behindness aversion, a psychological measure of envy, a dummy for whether the high payment is considered coercive, and demographics) in order to analyze whether there are partial correlations between the WTP in LOW and HIGH and individual characteristics. Analogous for D2.
6. LOW and HIGH: Regression of the ethical type on controls (beliefs about reservation prices, risk-preferences, behindness aversion, a psychological measure of envy, a dummy for whether the high payment is considered coercive,

⁴ By definition, this fraction can only decrease. Hence, I will employ a one-sided test.

⁵ Deriving this from the probabilities stated by the participants requires that the probabilities are weakly increasing in the incentives. I hence preregister to exclude participants who violate this monotonicity unless they mistakenly state the probability mass function (i.e., in case the probabilities sum up to 100), in which case I simply recode the probabilities to build a cumulative distribution function. For robustness, I also plan to include all participants who violate monotonicity at one point only and to exclude participants who always state the same value.

and demographics) in order to analyze whether there are partial correlations between the type and individual characteristics. Analogous for the types defined by D2.

7. HIGH vs. TREATMENT and HIGH vs. LOW_PROB: D1: Pearson correlation coefficient between the WTP in HIGH and WTP in TREATMENT, and between WTP in HIGH and WTP in LOW_PROB. This allows me to analyze whether there is a correlation between decisions that are similar. Analogous for D2 using chi-squared tests.
8. HIGH vs. TREATMENT and HIGH vs. LOW_PROB: D1: Regression of the WTP to make the offer in HIGH on the WTP in TREATMENT controlling for beliefs about reservation prices, risk-preferences, behindness aversion, a psychological measure of envy, a dummy for whether the high payment is considered coercive, and demographics based on ethicists. This allows me to test what happens to the treatment effect, if I control for available controls. Analogous for D2.
9. BELIEFS: Two-sided *t*-test testing whether participants, on average, hold a belief about the fraction of people accepting the offer for the low amount that is significantly different to the belief used in LOW_PROB. Similarly, I plan to identify the fraction of participants who hold a belief about the fraction of people accepting the offer for the low amount that is substantially different and test whether this varies by ethical types.
10. BELIEFS: Two-sided *t*-test testing whether participants who state that offering a high payment causes the offer to be coercive, on average, hold the belief that more people are accepting the offer for the high payment than subjects who do not consider the high payment coercive and test whether this varies by ethical types.

Additional Analysis

11. TREATMENT vs. HIGH: Quantile regression of the WTP in HIGH on the WTP in TREATMENT for ethicists, this allows me to analyze the treatment effect heterogeneity.⁶
12. TREATMENT vs. HIGH and TREATMENT vs. LOW_PROB: Two-sided *t*-test⁷ testing whether the WTP in TREATMENT differs significantly from HIGH for ethicists who have a WTP for not making the offer of zero or lower in LOW and a positive WTP in HIGH or who have a negative WTP in LOW and a WTP of zero or higher in HIGH (conditional on observing enough such participants, i.e., more than twenty). This allows me to analyze the treatment effect for participants who are induced to switch from willing to pay for the offer not being made to paying

⁶ If the necessary assumptions for a quantile regression are violated, I plan to engage in other measures to analyze effect heterogeneity.

⁷ If I do not observe a sufficient number of observations, I will conduct a Mann-Whitney *U* test.

for the offer being made by massively increasing the incentives. Analogous for the WTP in TREATMENT and LOW_PROB.

13. TREATMENT vs. HIGH: D1: Two-sided t -tests testing whether the WTP in TREATMENT differs significantly from the WTP in HIGH for neutralists and economists.⁸ For D2, I employ tests of proportions to test the hypotheses that there are no significant effects for deontologists, libertarians and true economists by the treatment and tests of proportions testing whether the change in the fraction of participants objecting the offer induced by the TREATMENT is more pronounced for true ethicists than for true economics, deontologists and libertarians.
14. TREATMENT vs. LOW_PROB: Two-sided t -test testing whether the WTP in TREATMENT differs significantly from the WTP in LOW_PROB for neutralists and economists.⁹ For D2 I test the hypotheses that there is no significant effect for deontologists, libertarians and true economists and whether the change in the fraction of participants objecting the offer induced by the TREATMENT is more pronounced for true ethicists than for true economics, deontologists and libertarians.
15. TREATMENT vs. HIGH: Two-sided t -test testing whether the WTP in TREATMENT differs significantly from HIGH for all participants. Analogous for D2.
16. TREATMENT vs. LOW_PROB: Two-sided t -test testing whether the WTP in TREATMENT differs significantly from LOW_PROB for all participants. Analogous for D2.
17. BELIEFS: Identification of the fraction of participants who believe that for the high monetary amount almost all people (i.e., at least 90% of people) are willing to accept the offer. D1: Two-sided t -test testing whether the WTP in TREATMENT differs significantly from HIGH for these participants. Analogous for D2.
18. QUEST: Identification of the fraction of participants who consider the high payment coercive and of the minimum average amount all participants would

⁸ For economists the WTP for making the offer might be lower in TREATMENT than in HIGH, because the probability of the offer being made decreases which might make paying for the offer being made less efficient and this has been shown to decrease giving (Andreoni and Miller, 2002; Engel, 2013). However, the WTP might also be higher, when participants reward the person for willing to register for the low monetary amount, as dictators give more to deserving recipients (Eckel et al., 2005), and/or because TREATMENT might also increase the efficiency of giving by increasing the probability of the offer being accepted. Consequently, no hypothesis is made regarding the difference in the WTP in TREATMENT and HIGH between ethicists and economists.

⁹ For economists, in contrast to ethicists, the difference between the WTP in TREATMENT and in LOW_PROB might be negative because of the considerations above only the first argument applies. Hence, I hypothesize that moving from TREATMENT to LOW_PROB reduces the WTP for making the offer for economists, but increases the WTP for making the offer for ethicists.

consider coercive. D1: Two-sided t -test testing whether the WTP in TREATMENT differs significantly from HIGH for these participants. Analogous for D2.

References

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