

Preregistration for: Using Response Times in Surveys (Study 2)

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1 Design of the Study

Participants are recruited online using Prolific. They are asked to perform a series of decision tasks in exchange for a flat payment and additional decision-dependent incentives in part of the tasks. In particular, participants are asked to rate 20 charities and organizations according to how much they favor them using 9-point Likert scales (see the list below). Two additional questions after the ratings ask for the most- and least-favorite organization from the list. Participants are then asked to give binary answers to several survey questions (see the list of questions below). The order of ratings and questions will be randomized for each subject (within blocks of similar questions). We will further measure response times for each binary choice. We plan to compare how the answers to these questions might differ between groups of participants (see below for how we pre-define the groups).

2 List of Charities and Organizations To Be Rated

Charities are selected because they are either popular or unpopular, according to yougov.uk for Q3-2023 (see the list in this link). The popular charities we include had approval rates between 73% and 86% (this was the overall maximum) at the time of the design of the study (November 2023), and a “Fame” of 90% or above: British Heart Foundation; Macmillan Cancer Support; Samaritans; WWF; British Red Cross; Guide Dogs; RSPB (Royal Society for the Protection of Birds). We tried to include a variety of themes, e.g. avoiding having two different cancer charities on the list.

Less popular charities had approval rates between 24% and 60%: UNICEF; Fairtrade Foundation; Amnesty International; Cats Protection; Christian Aid; Greenpeace; Unite

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to End Violence Against Women; Black Lives Matter; PETA; Campaign for Nuclear Disarmament; Vegetarian Society.

We also include the two main political organizations in the UK, the Conservative Party and the Labour Party.

3 List of Survey Questions

We ask 38 (20+10+4+4) binary questions which are of 3 different kinds:

Type 1. We ask participants to decide how they want to split an amount of money (4 Pounds) between themselves and a charity. In particular, the question asks participants to decide whether they would prefer to keep the entire amount or split the sum evenly (50% - 50%) with the charity. We ask this question for all 20 charities and organizations participants rated.

For each participant, one of the questions of type 1 is randomly selected and paid at the end of the survey. That is, the participant's decision is actually implemented for the selected question (including making the donation to the corresponding organization). Randomization will be made at the charity level, i.e. we will pick one of the 20 questions at random and realize the corresponding question for all participants.

Type 2. We present participants with two lines of different lengths, one above the other. We ask them if the one above is longer than than the other. We repeat this question for different lengths 10 times.

For each participant, one of the questions of type 2 is randomly selected and paid at the end of the survey. If the participant gave the correct answer, he or she will earn an additional one pound.

Type 3. We ask participants to answer four framing and invariance questions analogous to the ones proposed by Tversky and Kahneman (1981, 1986); see the list of questions below. Participants are randomly assigned to see only one of the two versions of the questions (e.g., either gain frame or loss frame).

Questions of type 3 are not incentivized.

Demographics. Six additional questions are used to define additional groups for the analysis. The first three are asked at the end. The last two are asked after the ratings but before all binary questions.

- What is your gender? [Male/Female/Other or Prefer not to say]
- What is your age? [Numerical, integer]
- What describes you best politically: leaning more toward the left or toward the right? [Left/Right]

- Are you a dog or a cat person? [Dog/Cat]
- Which is your most favorite charity or organization among those in the list?
[List of the 20 charities / organizations]
- Which is your least favorite charity or organization among those in the list?
[List of the 20 charities / organizations]

4 Analysis

For the questions involving line comparisons (type 2) we apply response time techniques building upon Alós-Ferrer et al. (2021) to examine whether larger differences between the lengths of the lines correspond to stronger preferences for the longer vs. the shorter line.

For each of the framing and invariance questions (type 3) there is a favored answer suggested by the literature, which depends on the version of the question participants see, e.g., loss vs. gain. Hence, the group comparisons for this type of questions correspond to the random assignment to two frames. We apply response time techniques building upon Alós-Ferrer et al. (2021) to examine whether we reveal a different preference between groups (e.g., gains vs. losses).

For all questions regarding splitting money between themselves and the charity (type 1), we apply response time techniques building upon Alós-Ferrer et al. (2021) to examine whether the following statements hold.

- A (group) preference for an option is revealed, e.g., between splitting or keeping the sum of money.
- A stronger preference for an option in one group compared to the other group is revealed, e.g., those participants who report being more conservative have a stronger preference for splitting the money with the Conservative party compared to keeping the sum for themselves with respect to those participants who report being more in favor of the Labour party.
- A group has a stronger preference for an option compared to another even when we do not observe a direct choices between them. For example, whether participants have a stronger preference for donating to charity A compared to charity B even though we only observe their choices between splitting money between charity A/B and themselves (Examples: Guide Dogs vs. Cats Protection for people self-describing as dog or cat people; giving to the own most-favorite vs. the own least-favorite organization).

We form groups based on the previously reported ratings and on demographic characteristics. In particular, we form groups and hence analyze responses based on:

1. Favorite vs. least favorite charity, as reported by the direct question regarding their most favorite vs. least favorite charity.

2. Median split of ratings for each charity.
3. A priori clear expected effects, e.g., political affiliation with respect to party donations, randomly assigned frame, preference for cats over dogs.

5 Power Analysis and Exclusions

The sample size and power analysis is based on the tests of proportions for comparisons across groups, which are taken as a comparative benchmark to our response-times-based analysis. Given that the participants might not be equally distributed between groups (e.g., political attitudes), we conservatively set the sample size to be able to allow for a 0.25 allocation ratio (80% vs. 20%). We further require to have enough power (0.8) to detect a 0.1 difference in the proportion of people supporting one option compared to the other between groups. The resulting sample size fulfilling these conditions is $N = 1008$, which we will round up to $N = 1100$.

During the survey we will implement control questions for attention, and we will not consider subjects who fail. We will recruit participants who successfully pass the control questions and successfully complete the study until we reach the required sample size. Due to simultaneous online recruitment, the target might be exceeded; we will keep these excess subjects for the analysis.

We will also exclude from the analysis any participant who reports the same organization both as most preferred and as least-preferred.

6 List of Framing and Invariance Questions

Q1-V1 You are the Health Minister of your country. Imagine that your country is preparing for the outbreak of an unusual disease, which is expected to kill 3000 people. Your team has investigated two alternative programs to combat the disease. Assume that the exact scientific estimates of the consequences of the programs are as follows. Which program would you choose?

- If Program A is adopted, 2000 people will die.
- If Program B is adopted, there is a 1/3 chance that nobody will die, and a 2/3 chance that 3000 people will die.

Q1-V2 You are the Health Minister of your country. Imagine that your country is preparing for the outbreak of an unusual disease, which is expected to kill 3000 people. Your team has investigated two alternative programs to combat the disease. Assume that the exact scientific estimates of the consequences of the programs are as follows. Which program would you choose?

- If Program A is adopted, 1000 people will be saved.

- If Program B is adopted, there is a $\frac{1}{3}$ chance that 3000 people will be saved, and a $\frac{2}{3}$ probability that nobody will be saved.

Q2-V1 You are the Minister of Transportation of your country. Imagine that about 600 people are killed in the country in traffic accidents every year. Your team has investigated two alternative programs to reduce the number of casualties. Assume that the exact expected consequences and yearly costs of the programs are as follows. Which program would you choose?

- If Program A is adopted, there will be 800 casualties. The program will cost 55 million Pounds.
- If Program B is adopted, there will be 920 casualties. The program will cost 12 million Pounds.

Q2-V2 You are the Minister of Transportation of your country. Imagine that about 600 people are killed in the country in traffic accidents every year. Your team has investigated two alternative programs to reduce the number of casualties. Assume that the exact expected consequences and yearly costs of the programs are as follows. Which program would you choose?

- If Program A is adopted, there will be 200 less casualties. The program will cost 55 million Pounds.
- If Program B is adopted, there will be 80 less casualties. The program will cost 12 million Pounds.

Q3-V1 Imagine that you are about to purchase a jacket for 150 Pounds and a mobile phone for 1250 Pounds. The mobile phone salesman informs you that the model you wish to buy is on sale for 1200 Pounds at another branch of the store, located 20 minutes away. Would you do the trip? (Yes/No)

Q3-V2 Imagine that you are about to purchase a jacket for 150 Pounds and a mobile phone for 1250 Pounds. The clothing-store salesman informs you that the jacket you wish to buy is on sale for 100 Pounds at another branch of the store, located 20 minutes away. Would you do the trip? (Yes/No)

Q4-V1 Imagine that you have decided to see a concert where admission is 100 Pounds per ticket. As you enter the concert hall you discover that you have lost a 100 Pounds bill. Would you still pay 100 Pounds for a ticket for the concert? (Yes/No)

Q4-V2 Imagine that you have decided to see a concert and paid the admission price of 100 Pounds per ticket. As you enter the concert hall you discover that you have lost the ticket. The seat was not marked and the ticket cannot be recovered. Would you pay 100 Pounds for another ticket? (Yes/No)

References

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