# Social heuristics and need-based transfers

Scott Claessens

2023-08-28

## Overview

This report summarises the analyses for the project "Social heuristics and need-based transfers". Analyses were pre-registered on 2023-08-21 (https://osf.io/pjdxv) and data collection for the project was conducted on Prolific immediately afterwards on the same day.

For this project, we had the following pre-registered hypotheses:

1. The causal effect of time-pressure, compared to time-delay, on prosocial behaviour in the Dictator Game will be:
    a. neither positive nor negative in the *control* condition.
    b. positive in the *need-based transfer framing* condition.
    c. negative in the *debt-based transfer framing* condition.
2. The causal effect of time spent making decision (in seconds) on prosocial behaviour in the Dictator Game will be:
    a. neither positive nor negative in the *control* condition.
    b. negative in the *need-based transfer framing* condition.
    c. positive in the *debt-based transfer framing* condition.

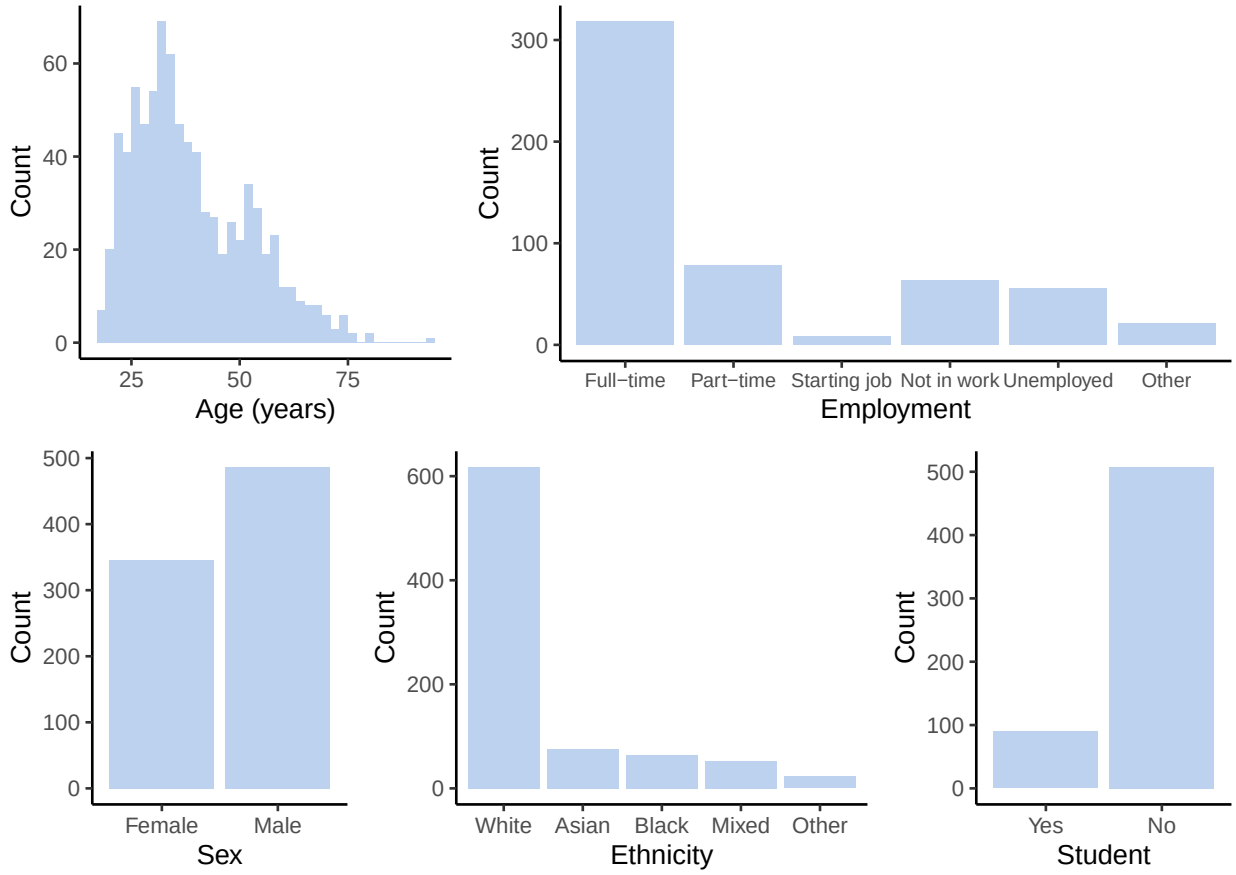
## Sample

In total, we sampled 840 participants from Prolific. While we aimed for 140 participants in each of our six experimental conditions, random allocation resulted in slightly different cell counts.

```
##
##           Delay Pressure
##   Control   139      141
##   Debt      137      139
##   Need      144      140
```

All participants were from the United States and spoke fluent English. Participants had 1804 Prolific approvals on average.

We did not collect a representative sample. Sample characteristics are summarised below:




## Survey completion and comprehension

Participants took 5.57 minutes on average to complete the survey. 73% of participants reported that they had "some experience" with surveys involving economic decision-making.

```
##
## A lot of experience       No experience     Some experience
##                 129                  97                 614
```

96% of participants correctly answered the comprehension question for the Dictator Game. A cursory look at the open-ended manipulation checks suggested that participants could accurately recall the person they were told about in the framing manipulation. Open-ended responses also suggested that many participants were able to guess in advance that our study involved deception and that the "other person" was not real — this is a potential limitation with our design.

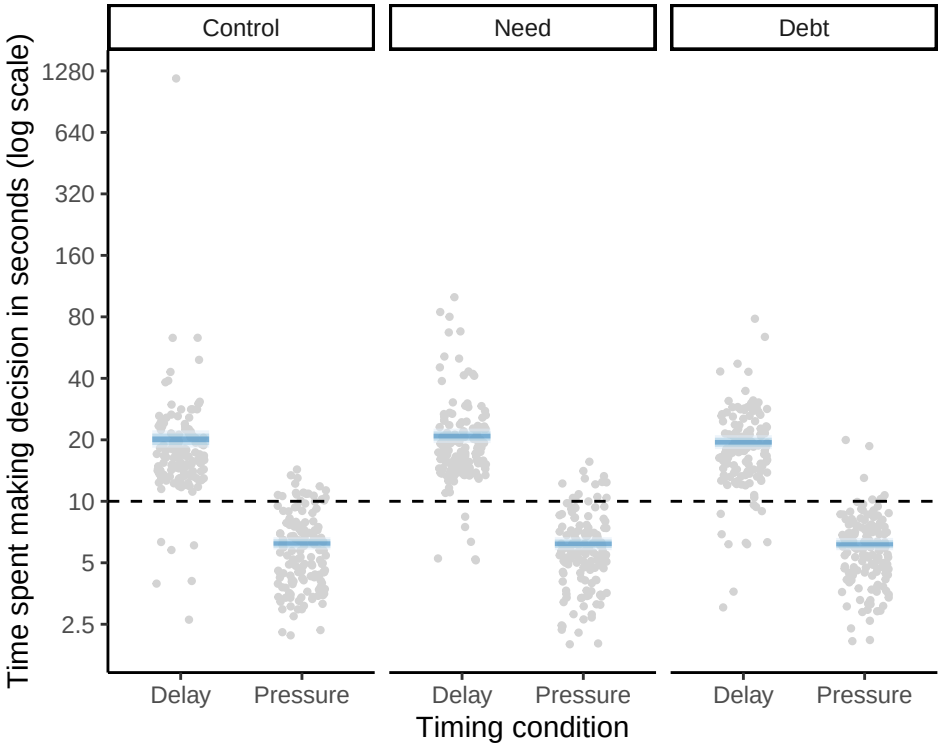
# Preregistered analyses

### Timing manipulation check

In our first pre-registered analysis, we aimed to test whether the experimental manipulation of time-pressure vs. time-delay worked as expected. In the time-pressure conditions, participants are asked to respond to the

Dictator Game in less than ten seconds. In the time-delay conditions, they must wait for ten seconds before responding.

To see whether participants followed the instructions, we modelled the amount of time, in seconds, that it took for participants to submit the Dictator Game decision page in each of the six conditions. The results of the model are shown below, with blue shaded intervals representing 50%, 80%, and 95% credible intervals for model-predicted averages.



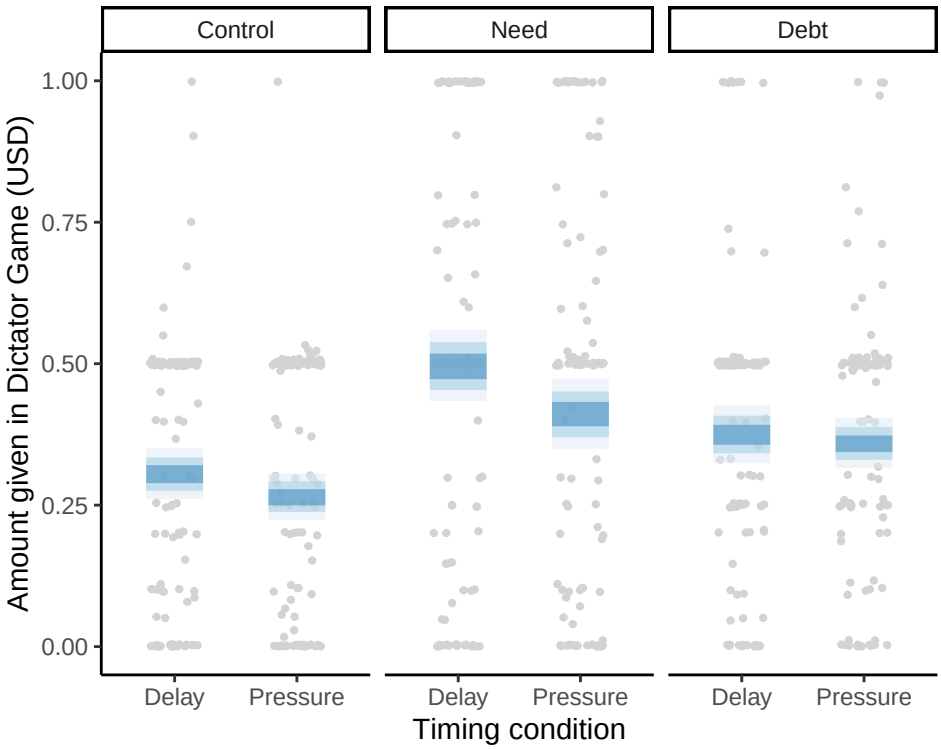

In general, participants obeyed the timing constraint in both conditions. Some participants were slightly fast/slow, but we do not remove these from future analyses to avoid biasing our sample through post-treatment selection.

## Hypothesis 1

To test Hypothesis 1a, 1b, and 1c, we modelled the average amount given in the Dictator Game in all six conditions. We expected that:

a. for the control framing, there would be no difference between the timing conditions.
b. for the need framing, participants would give more under time pressure.
c. for the debt framing, participants would give more under time delay.

The results of the model are shown below, with blue shaded intervals representing 50%, 80%, and 95% credible intervals for model-predicted averages.




In line with Hypothesis 1a, we found no difference in the amount given between the timing conditions for the control framing. On average, participants gave \$0.04 (95% CI [-0.02 0.10]) more in the time-delay condition compared to the time-pressure condition after seeing the control framing.

In contrast to Hypothesis 1b, we found that participants gave more in the *time-delay* condition for the need framing. On average, participants gave \$0.08 (95% CI [0.00 0.17]) more in the time-delay condition compared to the time-pressure condition after seeing the need framing.

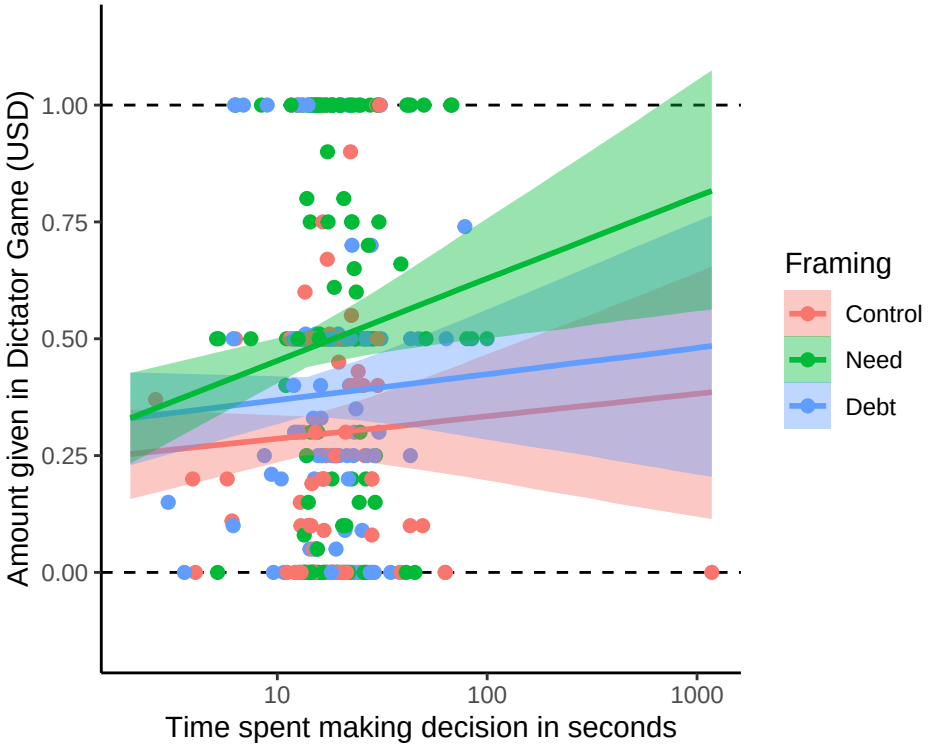
In contrast to Hypothesis 1c, we found no difference in the amount given between the timing conditions for the debt framing. On average, participants gave \$0.02 (95% CI [-0.05 0.08]) more in the time-delay condition compared to the time-pressure condition after seeing the debt framing.

## Hypothesis 2

To test Hypothesis 2a, 2b, and 2c, we used an instrumental variable model to estimate the causal effect of time spent making the decision on the amount given in the Dictator Game, for each of the three framing conditions. We expected that:

a. for the control framing, the amount of time spent would be causally unrelated to the amount given.
b. for the need framing, the amount of time spent would be negatively causally related to the amount given (quicker decisions are more prosocial).
c. for the debt framing, the amount of time spent would be positively causally related to the amount given (slower decisions are more prosocial).

The results of the model are shown below. Lines and shaded ribbons represent median posterior slopes and 95% credible intervals for the model-estimated causal effects.




In line with Hypothesis 2a, the amount of time spent was causally unrelated to the amount given in the Dictator Game for the control framing (median posterior slope = 0.02, 95% CI [-0.04 0.07]).

In contrast to Hypothesis 2b, the amount of time spent was positively causally related to the amount given in the Dictator Game for the need framing (median posterior slope = 0.08, 95% CI [0.02 0.13]).

In contrast to Hypothesis 2c, the amount of time spent was causally unrelated to the amount given in the Dictator Game for the debt framing (median posterior slope = 0.02, 95% CI [-0.03 0.08]).

## Summary of preregistered analyses

To summarise, our main pre-registered hypotheses were not borne out by the data. What do these results tell us about the psychology underlying need-based and debt-based transfers?

For need-based transfers, forcing participants to respond quickly actually *reduced* the amount of money that they gave to someone in need. It is possible that need-based giving is actually more reflective than we expected. It might be useful to look at the open-responses to understand why participants in this condition gave more.

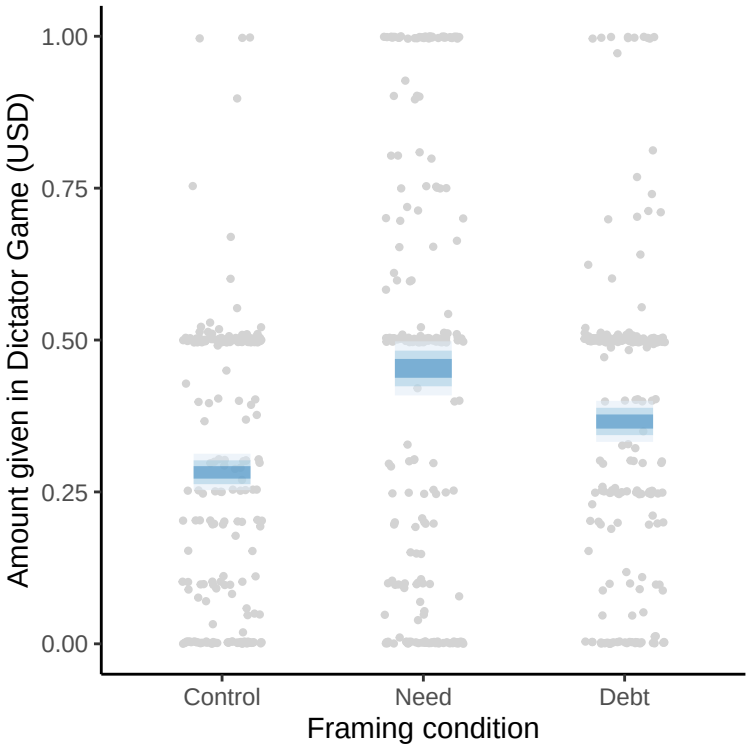
For debt-based transfers, time pressure and delay did not appear to causally affect participants' giving decisions. It may be that participants had worked out that the other person was "owed" \$0.50 before even getting to the Dictator Game screen (they are owed this amount because they initially transferred \$0.25 to the participant, which was multiplied by four, so they should receive half back to be fair).

The fact that we also found no effect of timing in the control condition adds to the mixed literature on social heuristics and prosociality.

# Exploratory analyses

## Total causal effect of framing condition

It is worth checking whether prosociality in the Dictator Game varies between the framing conditions, regardless of time pressure vs. time delay. To estimate this total causal effect, we fit the same model used to test Hypothesis 1 but include framing condition as the sole predictor. The results of the model are shown below, with blue shaded intervals representing 50%, 80%, and 95% credible intervals for model-predicted averages.




Collapsing over the timing conditions, participants gave, on average:

- $0.28 (95% CI [0.25 0.31]) in the control condition
- $0.45 (95% CI [0.41 0.50]) in the need condition
- $0.37 (95% CI [0.33 0.40]) in the debt condition

These averages differ between conditions:

- Participants gave $0.17 (95% CI [0.12 0.22]) more in the need condition than in the control condition
- Participants gave $0.08 (95% CI [0.04 0.13]) more in the need condition than in the debt condition
- Participants gave $0.09 (95% CI [0.03 0.14]) more in the debt condition than in the control condition