

# Online Appendix for: Responsibility Attribution for Collective Decision Makers

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# 1 Responsibility Attribution Internet Experiment

## 1.1 Screen Shots

Figure 1: Internet Experiment Screen 1

This is a game in which you will be asked to guess the decision taken by five decision makers. We will describe three distinct decision making situations that took place earlier this week at the University of Oxford.

- In each situation, five individuals were given a total of £30 and asked to agree on how much should be given to two different charities, an animal shelter and a soup kitchen.
- Each has preferences for how much to give to the animal shelter (with the remainder going to the soup kitchen).
- The group as a whole, however, had to come up with a single, collective, amount to contribute to each charity.
- So, for example, if the group decided to donate £10 to the animal shelter then £20 were donated to the soup kitchen.

You are going to be given the following information:

- The contribution amount each of the five decision makers preferred (between £0 and £30) for the animal shelter.
- The rules they all used to come up with a collective choice.

At the end, we are going to ask you to guess what amount the five decision makers finally agreed upon.  
We will now provide you with all of the information about the individuals that made the decision and the rules for coming up with a group decision about the amount to contribute to these charities.

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Figure 2: Internet Experiment Screen 2

**The voting weights**

- Each of the five decision makers was given a voting weight.
- The voting weights add to 1 and they determine how much each person's vote counts when the five people vote on the donation proposal.
- So for example, if there were five decision makers then the voting weights could be:
  - 0.4 for decision maker 1,
  - 0.1 for decision maker 2,
  - 0.2 for decision maker 3,
  - 0.2 for decision maker 4,
  - and 0.1 for decision maker 5.
- As you can see these voting weights add to 1.

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Figure 3: Internet Experiment Screen 3

**The preferred donation**

- Each of the five decision makers was randomly assigned a preferred donation amount for the animal shelter – it could be between £0 and £30
- For example, Decision Maker 1 could be assigned a preferred donation of 12 and Decision Maker 2 could be assigned a preferred donation of 21. This means that Decision Maker 1 prefers to donate £12 to the animal shelter and Decision Maker 2 prefers to donate £21 to the animal shelter.
- Each decision maker was rewarded with a monetary payoff that depended on whether the group of five decision makers could agree on a donation to the animal shelter that was similar to his or her preferred donation.
- For example, a decision maker whose preferred donation was 16 received his or her biggest monetary reward if the group choice was a donation of 16. And his or her monetary payoff got smaller as the group donation to the animal shelter got bigger or smaller than 16.

**Next**

Figure 4: Internet Experiment Screen 4

**The voting process:**

The exact process by which the decision making group voted a preferred allocation was as follows:

1. As mentioned before, the five decision makers were randomly assigned preferred donation positions and voting weights.
2. One of the five decision makers was randomly chosen to propose a donation amount (a number between £0 and £30) to be voted on by the group.
3. This proposal was then voted on by all five decision makers.
4. The voting rule requires a majority vote, as such a proposed collective choice can only be adopted if the sum of the voting weights of those in favour of the proposal is greater than 0.50, in which case the proposal was adopted.
5. If the proposal did not receive more than 50 percent of the weighted votes, then steps 3 - 5 were repeated until some proposal received more than 50 percent of the weighted votes and so was adopted as the collective choice.

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Figure 5: Internet Experiment Screen 5

Your role

- We are going to ask you to guess what amount the five decision makers finally agreed upon.
- The closer your guess is to the actual amount that was selected, the greater the number of SSI points you will receive.
- For instance, if you guess the exact amount agreed upon by the five decision makers, you will be awarded on average an additional 30 SSI points.
- However, the farther your guess is from the amount actually adopted, the fewer SSI points you will receive.
- If your guess is very far from the actual amount adopted, it is possible that you will receive 0 points.

**Next**

Figure 6: Internet Experiment Screen 6



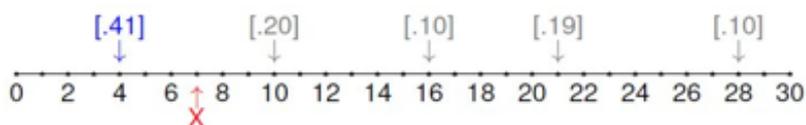
Figure 7: Internet Experiment Screen 7

In this example, the voting weights and the preferred donation positions of the five decision makers were the following (the decision maker who proposed the policy that was adopted is indicated in blue):

Decision Maker	Voting Weight	Donation Position
<b>1</b>	0.41	£4
2	0.20	£10
3	0.10	£16
4	0.19	£21
5	0.10	£28
TOTAL	1.00	

In this example Decision maker # 1 was the proposer.

Below is a picture that shows the possible donation amounts (£0- £30), the location of the preferred donation amount of each decision maker (indicated by an arrow) and their voting weights (indicated in brackets). Again, the proposer's voting weight is indicated in blue



The outcome (which could be between £0 and £30) that got a majority vote in this made up example was £13.

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Figure 8: Internet Experiment Screen 8

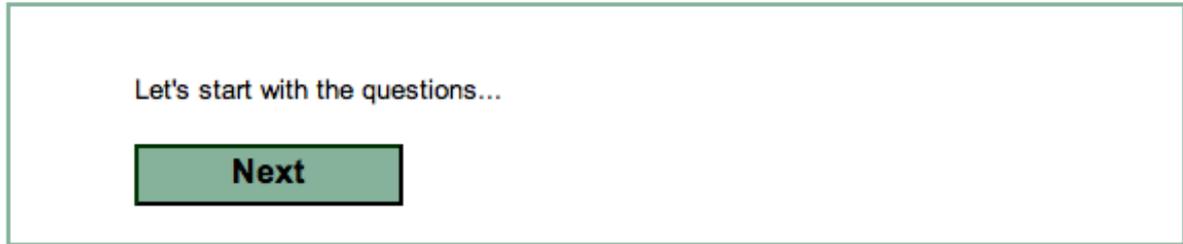


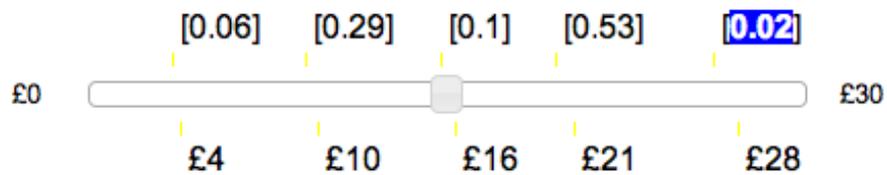
Figure 9: Internet Experiment Screen 9

The voting weights and the donation positions of the five decision makers were the following:

Decision Maker	Voting Weight	Policy Position
1	0.06	£4
2	0.29	£10
3	0.1	£16
4	0.53	£21
<b>5</b>	0.02	£28
TOTAL	1.00	

The proposer is indicated in **BLUE**

Use the slider below to select the outcome that you think received the winning vote from the 5 Decision Makers:



The outcome selected is £ 15

Next

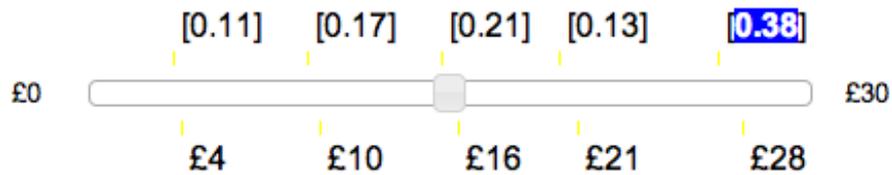
Figure 10: Internet Experiment Screen 10

The voting weights and the donation positions of the five decision makers were the following:

Decision Maker	Voting Weight	Policy Position
1	0.11	£4
2	0.17	£10
3	0.21	£16
4	0.13	£21
<b>5</b>	0.38	£28
TOTAL	1.00	

The proposer is indicated in **BLUE**

Use the slider below to select the outcome that you think received the winning vote from the 5 Decision Makers:



The outcome selected is £ 15

**Next**

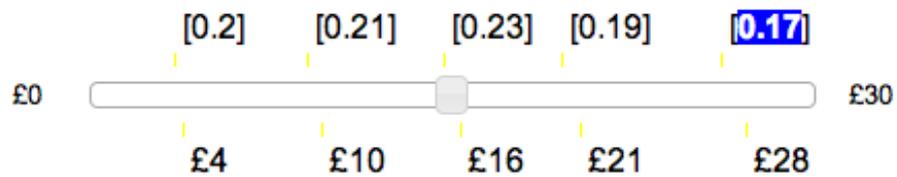
Figure 11: Internet Experiment Screen 11

The voting weights and the donation positions of the five decision makers were the following:

Decision Maker	Voting Weight	Policy Position
1	0.2	£4
2	0.21	£10
3	0.23	£16
4	0.19	£21
<b>5</b>	0.17	£28
TOTAL	1.00	

The proposer is indicated in **BLUE**

Use the slider below to select the outcome that you think received the winning vote from the 5 Decision Makers:



The outcome selected is £ 15

Next

## 1.2 Excel file defining random assignment to the five voting weights

An accompanying Excel file (appendix random assignment treatments.xls) contains the auxiliary values with which all of the randomisations were defined. Respondents are asked three questions concerning each of three voting weight distributions. There is a worksheet associated with each of these questions that describes how respondents were randomly assigned to voting weight treatments. *Treatment variation DSq1* corresponds to the majority distribution [.02, .06, .10, .29, .53]. *Treatment variation DSq2* corresponds to the unequal distribution [.11, .13, .17, .21, .38]. *Treatment variation DSq3* corresponds to the relatively equal distribution [.17, .19, .20, .21, .23]. There are 120 rows in each worksheet that correspond to the permutations of weights associated with each of the five Decision Making policy positions – in other words the weights can be ordered over the five decision making positions a total of 120 different ways. There are five columns in each spreadsheet corresponding to each DM position. Respondents were randomly assigned to a DM proposer treatment that correspond to these five columns. Each of the 600 cells in this spreadsheet corresponds to a randomly assigned treatment for the first distribution question – 120 permutations of the voting weights X 5 possible proposers. A similar random assignment for the other two questions is described in *Treatment variation DSq2* and *Treatment variation DSq3*.

The Excel file also contains three worksheets (*right location DSq1*, *right location DSq2*, and *right location DSq3*) that describe the “right” policy location for each voting weight and proposer randomization. These policy locations represent the policy outcome that was used to calculate the respondent’s payoffs. The cells in these three worksheets correspond to the random assignment cells in worksheets *Treatment variation DSq1*, *Treatment variation DSq2*, and *Treatment variation DSq3*. And the distance between the respondent’s guess regarding the policy outcome and this “right” policy outcome determined

their payoffs. For example, the “right” policy position for a respondent randomly assigned to a row value of  $\text{treatDSvar1}=9$  in *Treatment variation DSq3* with DM 1 would be 10.13. The distance between the respondent’s guess and 10.13 would determine his or her payoff.