ONLINE APPENDIX

Social Preferences over Ordinal Outcomes

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Table of Contents

A Main experiment: identification and design **1**
A.1 Identification . . . 1
A.2 Design details . . . 6
A.3 Bayes classifier . . . 12

B Main experiment: supplementary results **16**
B.1 Classification using indifference data . . . 16
B.2 Corroboration based on four-option social choice problems . . . 17
B.3 Response times by best-fitting rule . . . 20
B.4 Effects of preference displays . . . 21
B.5 Endogenous clusters . . . 23
B.6 Cardinal inferences . . . 25

C Cardinal outcomes experiment **26**
C.1 Design details . . . 26
C.2 Supplementary results . . . 30

D General population experiment **34**
D.1 Design details and summary statistics . . . 34
D.2 Corroboration based on four-option profiles . . . 34
D.3 Robustness to survey weights . . . 34
D.4 Relation to attitudes about political representation . . . 36

E Experiment instructions **38**
E.1 Main experiment . . . 38
E.2 Cardinal outcomes experiment . . . 75
E.3 General population experiment . . . 81
E.4 Elicitation of mTurk worker Stakeholder preferences . . . 93
E.5 Elicitation of Swiss citizen Stakeholder preferences . . . 103

References **104**

A Main experiment: identification and design

A.1 Identification

Distance between rules Figure A.1 tabulates, for each pair of social choice rules, the number of preference profiles (out of the 17 we use for identification) for which their implications differ. Two patterns stand out. First, in the vast majority of cases, different rules have different implications for large numbers of profiles. Ignoring the diagonal, few of the entries in Panel A are less than 3, and many are greater than 8, indicating differences on more than half of profiles. Second, three clusters of similar rules are visible. The first and second clusters consist of the strictly convex and strictly concave scoring rules, respectively. Because these rules are members of the single family that is indexed by a continuous parameter s, adjacent rules tend to differ on small numbers of profiles, but more distant scoring rules are more easily differentiated. The third cluster consists of the scoring runoff rules with $s < 1$. Observe also that the Condorcet rule as well as the runoff rules, align more closely with convex scoring rules than with concave scoring rules. Hence, a preference for compromise may push subjects away from Condorcet extensions and runoff rules.

Excluded three-option profiles Given anonymity and neutrality, our setting of five Stakeholders and three alternatives allows for 42 different preference profiles. The work domain in our experiment uses the 17 profiles that provide the largest amount of discrimination between our pre-specified rules. Table A.1 lists the remaining 25 profiles that are not included in our experiment. These omitted profiles cannot expand the set of scoring rules, scoring runoffs, or q-majority rules we can distinguish. In the case of scoring rules and q-majority rules, this can be shown analytically. For the case of scoring runoff rules, we show this point using brute-force computer scripts.

Figure A.2 shows that these profiles would also provide little or no additional ability to distinguish between our pre-specified rules.

Figure A.1: Distance between rules on the 17 profiles used in the work domain

	Scoring, $s = 0$	Scoring, $0 < s < \frac{1}{3}$	Scoring, $s = \frac{1}{3}$	Scoring, $\frac{1}{3} < s < \frac{1}{2}$	Scoring, $s = \frac{1}{2}$	Scoring, $\frac{1}{2} < s < \frac{3}{5}$	Scoring, $s = \frac{3}{5}$	Scoring, $\frac{3}{5} < s < \frac{2}{3}$	Scoring, $s = \frac{2}{3}$	Scoring, $\frac{2}{3} < s < \frac{3}{4}$	Scoring, $s = \frac{3}{4}$	Scoring, $\frac{3}{4} < s < \frac{4}{5}$	Scoring, $s = \frac{4}{5}$	Scoring, $\frac{4}{5} < s < 1$	Scoring, $s = 1$	Runoff, $0 \leq s \leq \frac{1}{4}$	Runoff, $\frac{1}{4} < s < \frac{1}{2}$	Runoff, $s = \frac{1}{2}$	Runoff, $\frac{1}{2} < s < 1$	Runoff, $s = 1$	Condorcet	Supermajority	Unanimity
Scoring, $s = 0$	0	5	6	6	10	10	11	11	13	13	15	15	16	16	16	7	7	7	7	10	7	12	17
Scoring, $0 < s < \frac{1}{3}$	5	0	2	2	6	6	7	7	9	9	11	11	12	12	13	3	4	4	4	6	4	14	17
Scoring, $s = \frac{1}{3}$	6	2	0	2	6	6	7	7	9	9	11	11	12	12	13	5	5	5	5	7	5	13	16
Scoring, $\frac{1}{3} < s < \frac{1}{2}$	6	2	2	0	4	4	5	5	7	7	9	9	10	10	11	5	4	4	4	6	4	14	17
Scoring, $s = \frac{1}{2}$	10	6	6	4	0	4	5	5	7	7	9	9	10	10	11	8	7	6	7	8	6	10	15
Scoring, $\frac{1}{2} < s < \frac{3}{5}$	10	6	6	4	4	0	1	1	3	3	5	5	6	6	7	8	7	7	6	6	7	14	17
Scoring, $s = \frac{3}{5}$	11	7	7	5	5	1	0	1	3	3	5	5	6	6	7	9	8	8	7	7	8	14	17
Scoring, $\frac{3}{5} < s < \frac{2}{3}$	11	7	7	5	5	1	1	0	2	2	4	4	5	5	6	9	8	8	7	7	8	14	17
Scoring, $s = \frac{2}{3}$	13	9	9	7	7	3	3	2	0	2	4	4	5	5	6	11	10	10	9	8	10	13	17
Scoring, $\frac{2}{3} < s < \frac{3}{4}$	13	9	9	7	7	3	3	2	2	0	2	2	3	3	4	11	10	10	9	7	10	14	17
Scoring, $s = \frac{3}{4}$	15	11	11	9	9	5	5	4	4	2	0	2	3	3	4	13	12	12	11	8	12	15	16
Scoring, $\frac{3}{4} < s < \frac{4}{5}$	15	11	11	9	9	5	5	4	4	2	2	0	1	1	2	13	12	12	11	7	12	15	17
Scoring, $s = \frac{4}{5}$	16	12	12	10	10	6	6	5	5	3	3	1	0	1	2	14	13	13	12	8	13	16	17
Scoring, $\frac{4}{5} < s < 1$	16	12	12	10	10	6	6	5	5	3	3	1	1	0	1	14	13	13	12	8	13	16	17
Scoring, $s = 1$	16	13	13	11	11	7	7	6	6	4	4	2	2	1	0	15	14	14	13	9	14	16	17
Runoff, $0 \leq s \leq \frac{1}{4}$	7	3	5	5	8	8	9	9	11	11	13	13	14	14	15	0	1	2	2	6	3	15	17
Runoff, $\frac{1}{4} < s < \frac{1}{2}$	7	4	5	4	7	7	8	8	10	10	12	12	13	13	14	1	0	1	1	5	2	15	17
Runoff, $s = \frac{1}{2}$	7	4	5	4	6	7	8	8	10	10	12	12	13	13	14	2	1	0	1	5	1	14	16
Runoff, $\frac{1}{2} < s < 1$	7	4	5	4	7	6	7	7	9	9	11	11	12	12	13	2	1	1	0	4	2	15	17
Runoff, $s = 1$	10	6	7	6	8	6	7	7	8	7	8	7	8	8	9	6	5	5	4	0	5	15	17
Condorcet	7	4	5	4	6	7	8	8	10	10	12	12	13	13	14	3	2	1	2	5	0	14	15
Supermajority	12	14	13	14	10	14	14	14	13	14	15	15	16	16	16	15	15	14	15	15	14	0	8
Unanimity	17	17	16	17	15	17	17	17	17	17	16	17	17	17	17	17	17	16	17	17	15	8	0

Notes: This graph plots the set of 23 benevolent rules on both the horizontal and vertical axes. Each cell reports the number of profiles (out of the 17 used in the work domain) for which a given pair of rules differ from each other. We use the definition that two rules differ on a profile if they select a different subset of options (distance = 1); otherwise they do not differ on that profile (distance = 0).

Figure A.2: Distance between rules used on the 25 omitted profiles

	Scoring, $s = 0$	Scoring, $0 < s < \frac{1}{3}$	Scoring, $s = \frac{1}{3}$	Scoring, $\frac{1}{3} < s < \frac{1}{2}$	Scoring, $s = \frac{1}{2}$	Scoring, $\frac{1}{2} < s < \frac{3}{5}$	Scoring, $s = \frac{3}{5}$	Scoring, $\frac{3}{5} < s < \frac{2}{3}$	Scoring, $s = \frac{2}{3}$	Scoring, $\frac{2}{3} < s < \frac{3}{4}$	Scoring, $s = \frac{3}{4}$	Scoring, $\frac{3}{4} < s < \frac{4}{5}$	Scoring, $s = \frac{4}{5}$	Scoring, $\frac{4}{5} < s < 1$	Scoring, $s = 1$	Runoff, $0 \leq s \leq \frac{1}{4}$	Runoff, $\frac{1}{4} < s < \frac{1}{2}$	Runoff, $s = \frac{1}{2}$	Runoff, $\frac{1}{2} < s < 1$	Runoff, $s = 1$	Condorcet	Supermajority	Unanimity
Scoring, $s = 0$	0	2	2	2	2	2	2	2	2	2	2	2	2	2	11	2	2	2	2	2	2	9	22
Scoring, $0 < s < \frac{1}{3}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $s = \frac{1}{3}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $\frac{1}{3} < s < \frac{1}{2}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $s = \frac{1}{2}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $\frac{1}{2} < s < \frac{3}{5}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $s = \frac{3}{5}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $\frac{3}{5} < s < \frac{2}{3}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $s = \frac{2}{3}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $\frac{2}{3} < s < \frac{3}{4}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $s = \frac{3}{4}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $\frac{3}{4} < s < \frac{4}{5}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $s = \frac{4}{5}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $\frac{4}{5} < s < 1$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Scoring, $s = 1$	11	9	9	9	9	9	9	9	9	9	9	9	9	9	0	9	9	9	9	9	9	13	21
Runoff, $0 \leq s \leq \frac{1}{4}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Runoff, $\frac{1}{4} < s < \frac{1}{2}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Runoff, $s = \frac{1}{2}$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Runoff, $\frac{1}{2} < s < 1$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Runoff, $s = 1$	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Condorcet	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11	22
Supermajority	9	11	11	11	11	11	11	11	11	11	11	11	11	11	13	11	11	11	11	11	11	0	18
Unanimity	22	22	22	22	22	22	22	22	22	22	22	22	22	22	21	22	22	22	22	22	22	18	0

Notes: This graph plots the set of 23 benevolent rules on both the horizontal and vertical axes. Each cell reports the number of profiles (out of the 25 profiles omitted from the experiment) for which a given pair of rules differ from each other. We use the definition that two rules differ on a profile if they select a different subset of options (distance = 1); otherwise they do not differ on that profile (distance = 0).

Table A.1: Excluded three-alternative profiles

A A A A A	A A A B B	B A A A A	B C A A A	C A A A A
B B B B B	C B B A A	C B B B C	A B C B B	A B B B B
C C C C C	B C C C C	A C C C B	C A B C C	B C C C C
A A A A A	A A A B B	B A A A A	C B B A A	C A A A A
C C B B B	B C C A A	C B B C C	A A A B B	A B B B C
B B C C C	C B B C C	A C C B B	B C C C C	B C C C B
C C A A A	C C A A A	C A A A A	C B B A A	B A A A A
A A B B B	A B B B B	B C B B B	A A A B C	A C C B B
B B C C C	B A C C C	A B C C C	B C C C B	C B B C C
B B A A A	B B A A A	C B A A A	B C A A A	B A A A A
A A B B B	A C C C B	A C B B B	A A C B B	A C B B B
C C C C C	C A B B C	B A C C C	C B B C C	C B C C C
A A A A A	B B A A A	C B A A A	B C A A A	B A A A A
C B B B B	A C C B B	A C B B C	A A B B B	A B B B B
B C C C C	C A B C C	B A C C B	C B C C C	C C C C C

Notes: Most our pre-specified rules make the same prediction about which option will be chosen for most of the profiles in this table. Note that for the majority of these profiles, the preference rank distributions of the alternatives are fully ordered by stochastic dominance, *and* the option with the lowest (least preferred) rank distribution is statewise dominated by another option.

Distance between rules on profiles used the in political domain Figure A.3 displays the distance between any pair of our pre-specified rules on the preference profiles we use for the political domain. Entries of zero off the diagonal indicate that the corresponding pair of rules cannot be separately identified using either of our methods. Moreover, using incentivized choice alone, we cannot separately identify any rule that differs from two other rules on only a single profile and whose choices are the union of the choices of the two other rules. This case occurs for some point-identified scoring rules with $0 < s < 1$.

Figure A.3: Distance between rules on the 7 profiles used in the political domain

	Scoring, $s = 0$	Scoring, $0 < s < \frac{1}{3}$	Scoring, $s = \frac{1}{3}$	Scoring, $\frac{1}{3} < s < \frac{1}{2}$	Scoring, $s = \frac{1}{2}$	Scoring, $\frac{1}{2} < s < \frac{3}{5}$	Scoring, $s = \frac{3}{5}$	Scoring, $\frac{3}{5} < s < \frac{2}{3}$	Scoring, $s = \frac{2}{3}$	Scoring, $\frac{2}{3} < s < \frac{3}{4}$	Scoring, $s = \frac{3}{4}$	Scoring, $\frac{3}{4} < s < \frac{4}{5}$	Scoring, $s = \frac{4}{5}$	Scoring, $\frac{4}{5} < s < 1$	Scoring, $s = 1$	Runoff, $0 \leq s \leq \frac{1}{4}$	Runoff, $\frac{1}{4} < s < \frac{1}{2}$	Runoff, $s = \frac{1}{2}$	Runoff, $\frac{1}{2} < s < 1$	Runoff, $s = 1$	Condorcet	Supermajority	Unanimity
Scoring, $s = 0$	0	0	1	1	3	3	4	4	5	5	6	6	7	7	7	0	0	0	0	2	0	6	7
Scoring, $0 < s < \frac{1}{3}$	0	0	1	1	3	3	4	4	5	5	6	6	7	7	7	0	0	0	0	2	0	6	7
Scoring, $s = \frac{1}{3}$	1	1	0	1	3	3	4	4	5	5	6	6	7	7	7	1	1	1	1	3	1	5	6
Scoring, $\frac{1}{3} < s < \frac{1}{2}$	1	1	1	0	2	2	3	3	4	4	5	5	6	6	6	1	1	1	1	3	1	6	7
Scoring, $s = \frac{1}{2}$	3	3	3	2	0	2	3	3	4	4	5	5	6	6	6	3	3	3	3	4	3	4	6
Scoring, $\frac{1}{2} < s < \frac{3}{5}$	3	3	3	2	2	0	1	1	2	2	3	3	4	4	4	3	3	3	3	3	3	6	7
Scoring, $s = \frac{3}{5}$	4	4	4	3	3	1	0	1	2	2	3	3	4	4	4	4	4	4	4	4	4	6	7
Scoring, $\frac{3}{5} < s < \frac{2}{3}$	4	4	4	3	3	1	1	0	1	1	2	2	3	3	3	4	4	4	4	4	4	6	7
Scoring, $s = \frac{2}{3}$	5	5	5	4	4	2	2	1	0	1	2	2	3	3	3	5	5	5	5	5	5	5	7
Scoring, $\frac{2}{3} < s < \frac{3}{4}$	5	5	5	4	4	2	2	1	1	0	1	1	2	2	2	5	5	5	5	5	5	6	7
Scoring, $s = \frac{3}{4}$	6	6	6	5	5	3	3	2	2	1	0	1	2	2	2	6	6	6	6	5	6	6	7
Scoring, $\frac{3}{4} < s < \frac{4}{5}$	6	6	6	5	5	3	3	2	2	1	1	0	1	1	1	6	6	6	6	4	6	6	7
Scoring, $s = \frac{4}{5}$	7	7	7	6	6	4	4	3	3	2	2	1	0	1	1	7	7	7	7	5	7	7	7
Scoring, $\frac{4}{5} < s < 1$	7	7	7	6	6	4	4	3	3	2	2	1	1	0	0	7	7	7	7	5	7	7	7
Scoring, $s = 1$	7	7	7	6	6	4	4	3	3	2	2	1	1	0	0	7	7	7	7	5	7	7	7
Runoff, $0 \leq s \leq \frac{1}{4}$	0	0	1	1	3	3	4	4	5	5	6	6	7	7	7	0	0	0	0	2	0	6	7
Runoff, $\frac{1}{4} < s < \frac{1}{2}$	0	0	1	1	3	3	4	4	5	5	6	6	7	7	7	0	0	0	0	2	0	6	7
Runoff, $s = \frac{1}{2}$	0	0	1	1	3	3	4	4	5	5	6	6	7	7	7	0	0	0	0	2	0	6	7
Runoff, $\frac{1}{2} < s < 1$	0	0	1	1	3	3	4	4	5	5	6	6	7	7	7	0	0	0	0	2	0	6	7
Runoff, $s = 1$	2	2	3	3	4	3	4	4	5	5	5	4	5	5	5	2	2	2	2	0	2	6	7
Condorcet	0	0	1	1	3	3	4	4	5	5	6	6	7	7	7	0	0	0	0	2	0	6	7
Supermajority	6	6	5	6	4	6	6	6	5	6	6	6	7	7	7	6	6	6	6	6	6	0	3
Unanimity	7	7	6	7	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	3	0

Notes: This graph plots the set of 23 benevolent rules on both the horizontal and vertical axes. Each cell reports the number of profiles (out of the 7 used in the political domain) for which a given pair of rules differ from each other. We use the definition that two rules differ on a profile if they select a different subset of options (distance = 1); otherwise they do not differ on that profile (distance = 0).

A.2 Design details

Overview Table A.2 presents a schematic overview of the experiment.

Table A.2: Schematic overview of the experiment

Part 0: Initial instructions

Part A: Task assigment

1. Instructions concerning task assignment
2. Instructions about the interface that displays preference profiles
3. 25 task assignment decisions (intermingled)
4. 3 task assignment decisions with unavailable options (intermingled)

Part B: Donation to a political party

1. Instructions concerning the donation to a political party
2. 12 party donation decisions

Part C: Further elicitations

1. Beliefs
   - 5 rounds of incentivized belief elicitation about workers' reservation wages, followed by an unincentivized elicitation of own reservation wages for completing each of the five tasks
   - 6 rounds of incentivized belief elicitation about citizens' political preferences, followed by an unincentivized elicitation of own willingness to pay to trigger or prevent the donation to each of the political parties
2. Preferences
   - Risk preferences
   - Altruism
3. Other characteristics
   - Demographic information
   - Cognitive Reflection Test
   - Knowledge about social choice theory

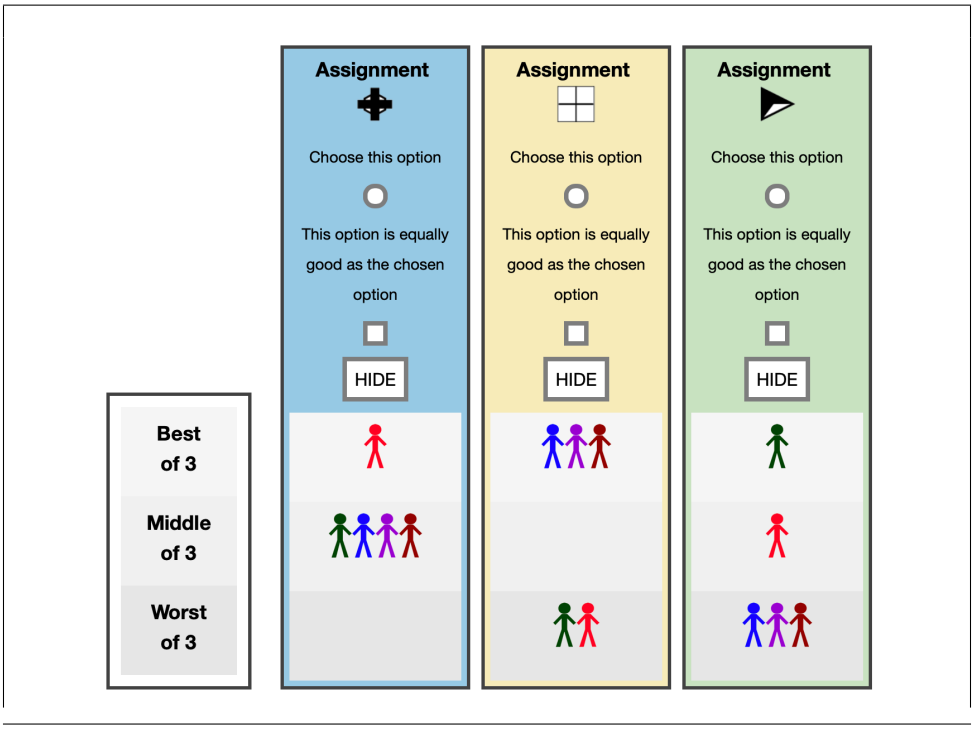
Notes: Each stage in Part C directly follows instructions concerning that stage. Half of the subjects proceed through the experiment in the order displayed. For the other half, Part B and Part A are interchanged. The latter subjects receive the instructions about the interface that displays preference profiles in Part B instead of in Part A. For those subjects, the two stages of Part C.1 are also interchanged.

Work tasks In the work domain, Planners decide about assignments of the following five tasks to Stakeholders: (i) *Image labeling.* The worker views a sequence of 400 images and identifies each by clicking a button. (ii) *Hate speech filtering.* The worker views 400 messages posted on twitter.com and indicates whether each includes hate speech such as racist or sexist statements. (iii) *Audio transcription.* The worker listens to a sequence of 400 words and, in each case, identifies the word by clicking a button. (iv) *Movie reviews classification.* The worker classifies 400 movie reviews according to whether they are positive or negative. (v) *Assigning apprentices to mentors.* The worker finds a pairwise stable match between five hypothetical apprentices and five hypothetical mentors knowing their preferences. The worker completes 20 rounds of this task. Both Planners and Stakeholders not only read descriptions of each task, but also try each of them out before making decisions (except for the matching task, a single round of which some subjects find time-consuming).

Alternative display formats In order to ensure our results are not an inadvertent artifact of a particular presentation of preference information, we consider *all* structurally distinct ways of displaying preference profiles. Because a preference profile is an array of three-tuples of the form (option, worker, rank) that indicate the preference rank a particular worker assigns to a given option, there are three such possibilities: rows and columns can be ranks and workers (in which case options appear in cells), ranks and options (in which case workers appear in cells), or workers and options (in which case ranks appear in cells). We exposed the first possibility Figure 2 in the main text. Figures A.4 and A.5 show the second and third possibilities, respectively. We provide the same tools for exploration (hiding, highlighting, and rearranging) in all display versions. Each Planner sees one and only one presentation format, which we select at random.

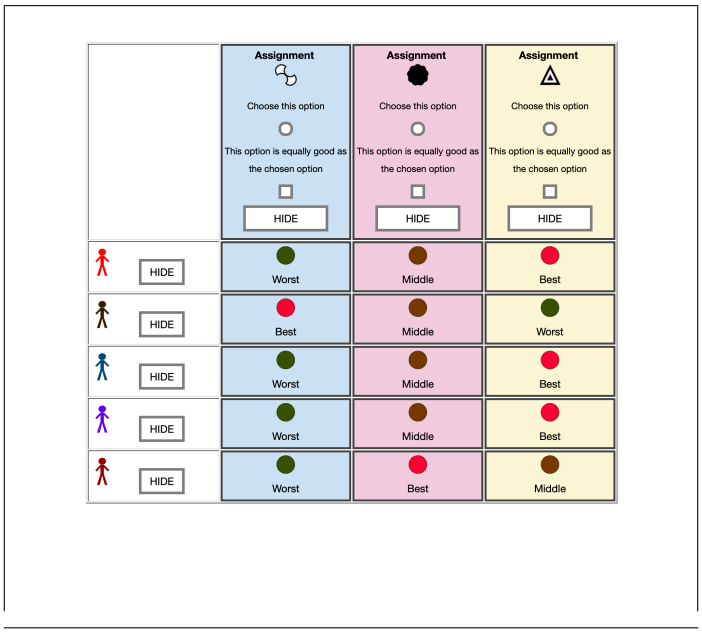
For our experiment with Swedish and US general population respondents, we only use the first and second display version. Not only do they yield similar results in our main experiment as the third display version, but they are also more natural to process.

Figure A.4: Planners' decision interface, version 2 (individuals in cells)



Notes: Subjects can drag and drop columns, click a button to shuffle columns, hide choice options, highlight workers, and hide workers. If a subject hides an option, only two rows are shown; the remaining rows are labeled 'Best of 2' and 'Worst of 2.' Symbols for options and colors for worker symbols are randomly drawn each round. The order of options is randomly drawn each round.

Figure A.5: Planners' decision interface, version 3 (ranks in cells)



Notes: Subjects can drag and drop columns, drag and drop rows, click a button to shuffle columns, click a button to shuffle rows, highlight preference ranks, hide choice options, and hide workers. If a subject hides an option, only two symbols, labeled 'best' and 'worst,' are shown. The colors of the symbols labeled 'best' and 'worst' differ depending on whether two or three options are displayed, to signify that the best (worst) option among two is not necessarily best (worst) among three. Symbols for options and colors for worker symbols are randomly drawn each round. The orders of workers and options are randomly drawn each round. Colors for the preference ranks are randomly drawn on the individual level but remain constant throughout the experiment.

Details about decisions in the political domain There are two differences between the political and work domain that are not mentioned in the main text. First, to prevent Planners from drawing inferences about parties from preference distributions, we select the group of five citizens from a sample that equally represents those who self-identify as politically left, right, and center. Planners are aware of the sample's composition. The second difference concerns the process for eliciting Stakeholders' preferences: citizens' expressed preferences determine the recipient of the donation with 2.5% probability, versus 5% probability for the analogous contingency in the work domain.

Additional elicitations *Beliefs about reservation prices.* In the elicitation of belies about stakeholder reservation prices in the work domain, possible answers range from \$0 to \$10 in increments of \$0.50. Half of the subjects see these questions ordered by rank (first, second, third), and half see them ordered by reverse rank (third, second, first). Before subjects answer these questions, we remind them about the price and income level in the US and the standard wages of mTurk workers. The instructions for these tasks explain the concept of WTP using an example for which we randomize the elicited valuation (either \$5 or \$1). We assume that the Planner's inferences about positional money-metric utility do not vary from one profile to another, and consequently elicit these beliefs only once.

The elicitations in the political domain are the same as for the work domain, with two exceptions. First, Possible predictions for the WTP to trigger the donation lie in the set {>15, 15, 13, 11, 9, 7, 5, 3, 1, -1, -3, -5 ,-7, -9, -11, -13, -15, <-15}. Over the five rounds, Planners make predictions for citizens with different first names rather than different cities of residence. Second, to increase statistical power, Planners answer five (nearly) redundant versions of these questions, where each version specifies the city and state where the worker lives. We use two sets of five city labels, randomly assigned, so we can determine whether the labels are consequential.

If one of the subject's reservation price predictions ends up determining her payment, she receives Fr. 30 minus Fr. 3 for every dollar by which her prediction differs from the truth, which we assess using incentivized multiple decision lists in preliminary sessions involving a separate set of workers. Planners also indicate their own reservation price for completing each of the five tasks, but these responses are unincentivized.

Risk preferences. On each line of a multiple decision list, subjects choose between two lotteries. The first lottery pays Fr. 23 with probability p or Fr. 15 with probability $(1-p)$. The second pays Fr. 38 with probability p or Fr. 3 with probability $(1-p)$. The list includes 11 binary choices with $p \in \{0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1\}$. In a second otherwise identical decision list, the first lottery pays either Fr. 20 or Fr. 13, while the second pays either Fr. 34 or Fr. 5.

Altruism. Subjects complete a multiple decision list involving the following pairs of alternatives: "*Increase each of the five workers' payoffs by \$2. Decrease my own study payment by CHF X*," or "*Do not increase the group members' payoffs. Leave my own study payment unchanged.*" Each

line employs a different value of X in the set $\{0, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20\}$. In an otherwise identical second list, the first option is *"Increase each of the five workers' payoffs by Fr. X (exchanged to USD). Decrease my own study payment by Fr.* $5X$," and the values of X lie in $\{0.2, 0.4, 0.6, 0.8, 1, 1.2, 1.4, 1.6, 1.8, 2\}$. Notice that the first list implicates both efficiency and equity, while the second implicates only equity. Subjects complete a multiple decision list involving the following pairs of alternatives: "*Increase each of the five workers' payoffs by $2. Decrease my own study payment by CHF X*," or "*Do not increase the group members' payoffs. Leave my own study payment unchanged.*" Each line employs a different value of X in the set $\{0, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20\}$. In an otherwise identical second list, the first option is *"Increase each of the five workers' payoffs by Fr. X (exchanged to USD). Decrease my own study payment by Fr.* $5X$," and the values of X lie in $\{0.2, 0.4, 0.6, 0.8, 1, 1.2, 1.4, 1.6, 1.8, 2\}$. Notice that the first list implicates both efficiency and equity, while the second implicates only equity.

Demographics questions We elicit the following demographic characteristics: gender, age, field of study and degree level they are working towards, grades in university entrance exams in mathematics and in their first language, canton in which they completed their university entrance exam, their main language, whether they live with their parents, their number of siblings, monthly spending, religiosity, religion, political stance, and political party they voted for in the last election of the Swiss National Council.

Questions about background in social choice theory Subjects report whether they have taken a class covering pertinent topics. We illustrate a three-option, three-citizen cyclical preference profile and ask subjects to name the paradox. We also ask subjects to name the Borda rule and Arrow's impossibility theorem based on verbal descriptions.

Comprehension checks Each of the two comprehension checks consists of nine questions. The first set concerns the preference displays and the second concerns the general decision environment. Subjects must answer all nine questions correctly to proceed. If they make a mistake, we ask them to review the instructions and try again, but we do not tell them which question(s) they missed. This feature prevents the subject from trying to pass the comprehension check by trial and error (the chance of passing either of the comprehension checks by chance is less than 0.2%). The comprehension questions appear in Appendix E.1.

A.3 Bayes classifier

Derivation of the Bayesian posterior Here, we derive the explicit expression for the Bayesian posteriors, $P(R, \epsilon|c)$, that our Bayesian classifier maximizes. For each preference profile t, a social choice rule R prescribes a subset $S_R^t \subseteq \{A, B, C\}$ of admissible options. For each t, the subject makes a choice $c_t \in \{A, B, C\}$. If the individual follows rule R with error probability ϵ and behaves according to the assumptions listed in Section III., then the probability of choosing each alternative is given by the following expressions for $X, Y, Z \in \{A, B, C\}$ with X, Y, and Z mutually distinct from each other.

$$\begin{aligned}
P\big(c_t = X|S_R^t = \{X\}; \epsilon\big) &= 1 - \frac{2}{3}\epsilon \\
P\big(c_t = Y|S_R^t = \{X\}; \epsilon\big) &= \frac{1}{3}\epsilon \\
P\big(c_t = X|S_R^t = \{X, Y\}; \epsilon\big) &= \frac{1}{2} - \frac{1}{6}\epsilon \\
P\big(c_t = Z|S_R^t = \{X, Y\}; \epsilon\big) &= \frac{1}{3}\epsilon \\
P\big(c_t = X|S_R^t = \{A, B, C\}; \epsilon\big) &= \frac{1}{3}
\end{aligned}$$

Moreover, by the assumption of conditional independence across rounds, the probability of observing choice sequence $c = (c_1, \ldots, c_T)$ from a subject who follows rule R is given by $P(c|R) = \prod_{t=1}^{T} P\big(c_t|S_R^t\big)$. Given the assumption of uniform prior probabilities across rules and error probabilities, we derive the prior probability of observing choice sequence c as $P(c) = \sum_R \frac{1}{N_R} \int_0^1 P(c|R; \epsilon) d\epsilon$, where N_R is the total number of rules. By Bayes' rule, the posterior associated with rule R and error probability ϵ conditional on the sequence of choices c is thus given by

$$P(R, \epsilon|c) = \frac{P(c|R; \epsilon)\mu_i}{P(c)}. \tag{1}$$

Monte Carlo Simulations We use Monte Carlo simulations to test (i) whether the Bayesian classifier reliably detects the use of pre-specified rules, and (ii) whether noise introduces bias.

To answer the first question, we simulate a sample of 1,000 subjects. We uniformly randomly assign each simulated subject to one of the identifiable benevolent rules in each domain. Each simulated subject follows the assigned rule exactly and randomizes uniformly among all tied options in case of irresoluteness. We then run the Bayesian classifier on this sample of simulated subjects, both using all three-option profiles available in the work domain, and using the three-option profiles available in the political domain. Figure A.6 shows the results. Focusing on the profiles available in the work domain (Panel A), three features stand out. First, the data are generally tightly centered around the diagonal. Second, subjects following a massively irresolute rule (supermajority and unanimity) are frequently confused for following another rule. Yet, even in these cases, the rule generating the choices receives non-trivial weight. Hence if the classifier assigns zero weight to these two rules, it is unlikely

that any subject actually followed one of these rules. Third, while scoring rules with a parameter between the boundaries of identifiable intervals are correctly classified in all cases, scoring rules with a parameter on the interval boundaries are sometimes confused for those with a parameter just above or just below the interval boundary. The reason is mechanical. In case of a scoring parameter on the interval boundary (henceforth: a point-identified scoring rule), the set of chosen options is the union of the options chosen by the neighboring interval-identified scoring rules. By assumption, subjects uniformly randomize in case of ties. If a point-identified scoring rule is irresolute on two profiles, and the neighboring interval-identified scoring rules are resolute on those profiles, for instance, there is a 50% chance that the randomization over the ties happens to coincide exactly with the choices prescribed by one of the neighboring interval-identified scoring rules. Panel B performs the same exercise but restricts the available data to the profiles available in the political domain and the set of rules to the rules identifiable in that domain. Qualitatively, we observe the same results as in the work domain.

To answer the second question, we simulate 4,000 subjects who choose uniformly randomly from all options in each round. We then run the Bayesian classifier on this sample of simulated subjects, both using all three-option profiles available in the work domain, and using the three-option profiles available in the political domain. Figure A.7 shows the resulting distribution of best-fitting types. Panel A uses the profiles available in the work domain. Unsurprisingly, close to half of simulated subjects are assigned to a malevolent rule.[1] Within the set of benevolent rules, we see that the least resolute rules, supermajority and unanimity, attract by far the largest fraction of subjects. The remaining rules all attract similar numbers of subjects, between one and six percent. Notably, neither of the modes we observe in our experimental data, Borda and near-antiplurality, attract a disproportionate fraction of randomly generated subjects.

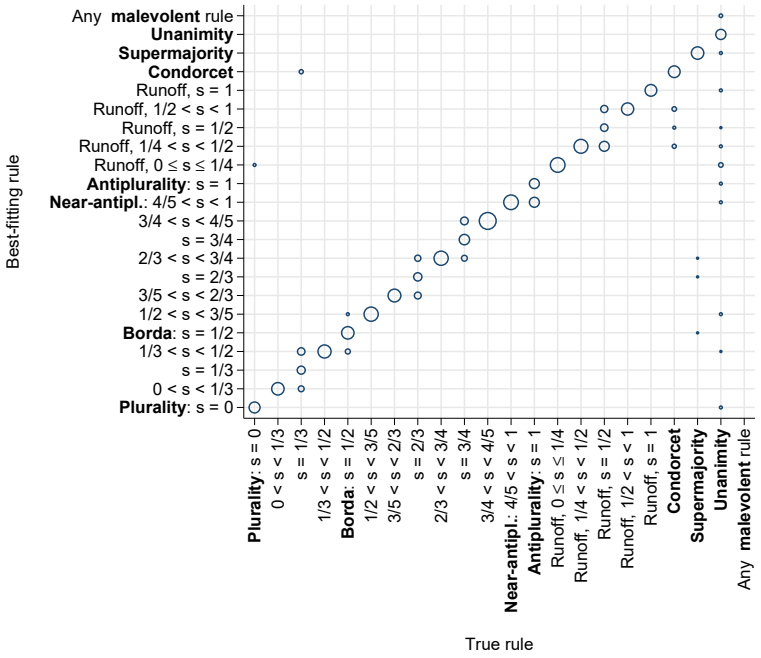
Panel B uses the set of profiles available in the political domain. We find that 43.1% of simulated subjects are classified as malevolent. Unlike in the work domain, we do not observe that randomly generated subjects are classified as following the unanimity rule disproportionately often. A possible reason is that the substantially smaller number of rounds in the political domain makes it more likely that a random vector of selections matches the other rules sufficiently well, especially given the leeway afforded by the high estimated noise parameter.

Overall, we conclude that our classification results in Section III. are not an artifact of classifying noisy data.

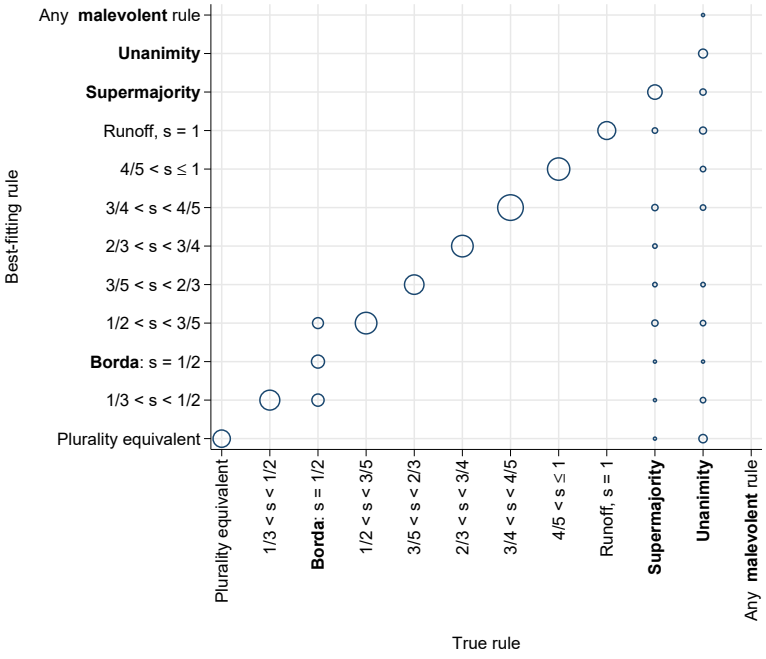
[1] Because our selection of profiles is not random, deviations from 50% are expected.

Figure A.6: Bayesian classifier if rules are followed exactly

A. Work domain

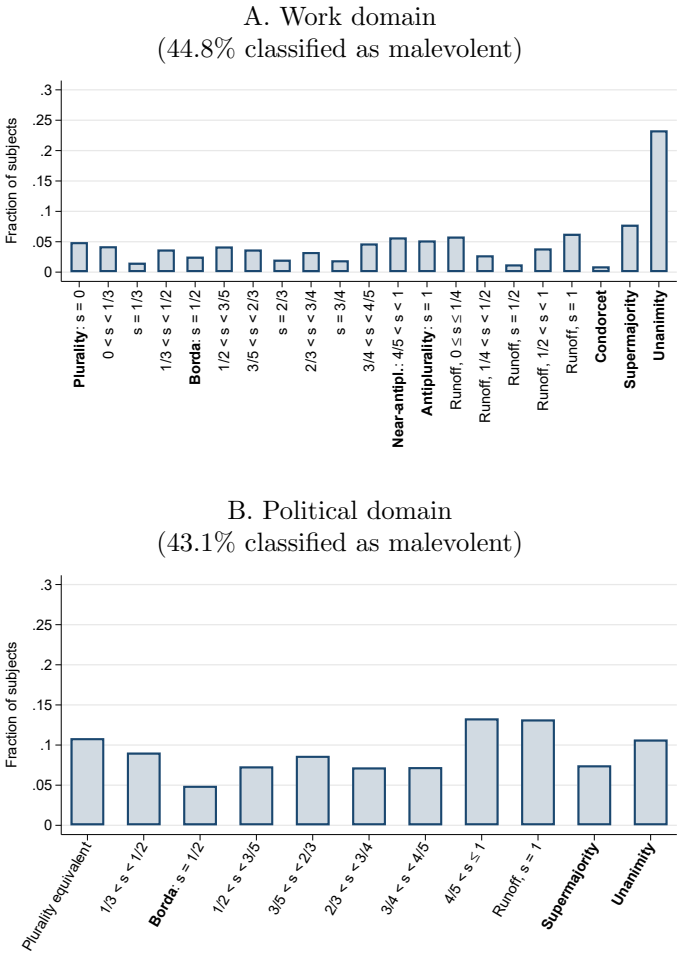


B. Political domain



Notes: Each of 1,000 simulated subjects is randomly uniformly assigned one identifiable benevolent rule in the respective domain and follows the rule exactly. In case of ties, simulated subjects randomize uniformly among all tied options. We run the Bayesian classifier on the simulated data. Fractions of subjects are indicated by the sizes of circles.

Figure A.7: Bayesian classifier on uniformly random noise



Notes: The category "Plurality equivalent" includes scoring rules with $0 \leq s < \frac{1}{3}$, any Condorcet extension, and any scoring runoff rule with $s < 1$." Each of 4,000 simulated subjects makes uniformly random choices from all three options. We run the Bayesian classifier on the simulated data. Graphs display the distribution over benevolent rules only.

B Main experiment: supplementary results

B.1 Classification using indifference data

Next to selecting one option for each profile, Planners also indicate any alternatives they consider equally good as the one they have selected. While this expression of indifference has no consequences within our experiment, two considerations mitigate the usual concerns about hypothetical choices: first, we ask Planners to report indifference that they presumably would have recognized when making the associated consequential choice moments prior; second, misrepresenting indifference information would not serve any other plausible objective (e.g., enhancement of social image).

While the revelation of indifference can, in some cases, be incentivized by randomizing among the pertinent options, two considerations make this approach unsuitable for our purposes. First, the procedure changes the nature of social alternatives by introducing lotteries over assignments, thereby implicating workers' preferences over lotteries. Second, the social choice rules we consider do not specify random resolution. Adding that provision to a rule amounts to creating a non-standard extension.

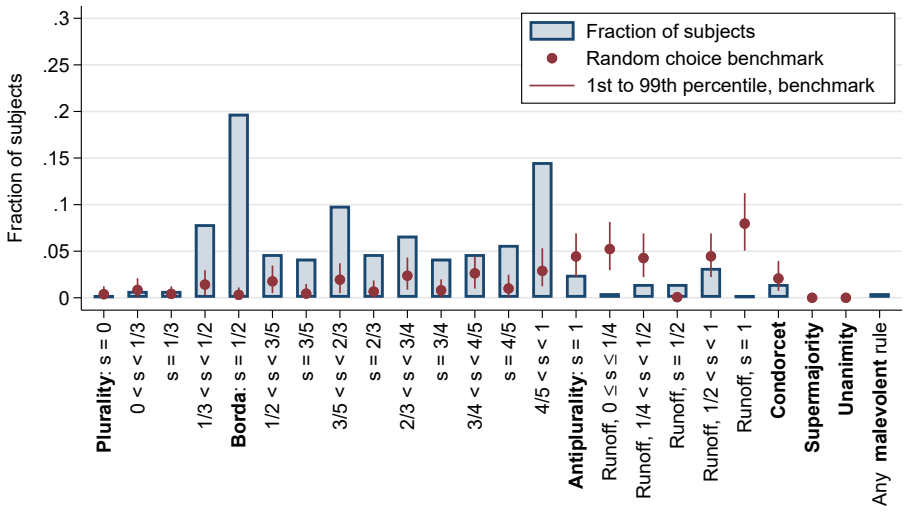
We use an appropriately adjusted version of our Bayes classifier to analyze the indifference data. We continue to impose assumptions (i) and (iii), along with a slightly modified version of assumption (ii): when deviating from her rule, the subject randomizes uniformly over the seven subsets of options, rather than the three options. Under these assumptions, a rule maximizes the posterior probability if and only if it maximizes the number of profiles for which it predicts the correct subset. We break ties at random. Information on indifference allows us to dispense with assumption (iv). In generating random benchmark data, we generate indifference data by designating each of the unchosen options as equally good based on independent Bernoulli draws. We choose the Bernoulli probability to match the average size of the best-option sets according to the actual subjects.

The average Planner expresses irresoluteness for 18% of the profiles. In comparison, the set of our benevolent pre-specified rules produces a tie for 18.4% of the profiles, on average. Focusing only on the Condorcet rule and the set of all scoring rules we can identify, this figure falls to 14.3%. Planners designate all options as equally good for only 1.54% of profiles.

Figure B.1 displays the results. Unlike in the case of incentivized choices, indifference data lets us identify all 23 benevolent rules and their malevolent counterparts, yielding a total of 46 pre-specified rules. The results closely resemble those from our main specification (Figure 4). The perhaps most salient difference are the less pronounced modes at the linear and most concave scoring rules, and the slightly increased fraction of subjects assigned to the scoring rule with $\frac{1}{3} < s < \frac{1}{2}$. The overwhelming majority of choices continues to be consistent with a weakly concave scoring rule. Other rules continue to garner vanishing support.

The classifier based on indifference-data continues to achieve a good fit. Subjects' responses match the sets of options selected by their assigned rule for 14 of 17 profiles (83.5%). In contrast, for our

Figure B.1: Best fitting pre-specified rules using indifference data



Notes: The random-choice benchmark for malevolent rules exceeds the range of the graph.

random-choice benchmark, the corresponding number is 43.2%. As an alternative way of making this comparison, one can think of an empirical fingerprint as consisting of $3 \times 17 = 51$ binary variables, each of which indicates whether a given option is selected for a given profile. The average subject's choice coincides with the prediction of the best-fitting rule in 47 of these 51 cases (91.8%), which is far higher than the random-choice benchmark (63.9%).

B.2 Corroboration based on four-option social choice problems

Four-option profiles provide additional opportunities to distinguish cleanly between classes of social choice rules. Specifically, there are two four-option profiles, labeled "Condorcet-separating 1" and "Condorcet-separating 2" in Table B.1 (numbered 18 and 19), for which the Condorcet winner is *rank-dominated*. These profiles distinguish between all Condorcet extensions and the entire class of *proper* scoring rules (ones that do not assign the same score to any two ranks) because the former must select the Condorcet winner while the latter cannot select a rank-dominated option.

We randomly intermingle both of these profiles with the three-option profiles in both domain blocks. While four-option problems are more cognitively demanding, recall that the experimental interface allows subjects to hide options, which makes it easy to identify Condorcet winners.

As shown in the left half of Table B.2 (which pertains to the work domain), subjects choose the Condorcet winner roughly one-fifth of the time for each of these profiles. However, only 11.6% consistently choose the Condorcet winner for both profiles.[2] In contrast, because a negligible fraction

[2]This frequency, while relatively small, is significantly higher than would be observed by chance if the distributions

Table B.1: Four-alternative profiles

Label	Index	Profile	Option selected by some proper scoring rule	Condorcet	Plurality (* = runoff)
Condorcet-separating 1	18	A A B B C B B A C D C C C D A D D D A B	B or C	A	{A*,B}
Condorcet-separating 2	19	A A B B C B B A D D C C C C A D D D A B	B or C	A	{A*,B}
Runoff-separating 1	22	A A B D D B B C A C C C D C B D D A B A	A or B or C	{A, B, C, D}	{A,D*}
Runoff-separating 2	23	A A C D D B B B A B C C D C C D D A B A	A or B or C	{A, B, C, D}	{A,D*}

Notes: We display each preference profile as a 4×5-matrix; columns correspond to workers, rows to preference ranks. The rth row shows a worker's rth-ranked alternative. For Condorcet-cyclical profiles, we indicate the set of options in the top-cycle.

of subjects choose option D, roughly 80% of the individual choices are consistent with a proper scoring rule. Moreover, for 69.5% of subjects, the pair of choices is consistent with some scoring rule in the following class: $[1, s_1, s_2, 0]$ where $s_1 = (2/3)^\gamma$, $s_2 = (1/3)^\gamma$, and $\gamma \in [0, \infty]$.

The preceding estimates likely overstate the fraction of subjects who more broadly support Condorcet outcomes, because other rules can rationalize the selection of option A for profiles 18 and 19. As indicated in Table B.1, plurality rule ($s_1 = s_2 = 0$) prescribes options A and B, while the plurality runoff rule prescribes A. Any scoring rule with $s_1 = s_2 < \frac{1}{2}$ also prescribes either A or B. One way to distinguish between Condorcet and plurality runoff on the one hand, and scoring rules with $s_1 = s_2 < \frac{1}{2}$ on the other, is to examine the indifference data. Of those who select A for both profiles, 36.2% rate B as equally good, which suggests that more than a third of these selections reflect a scoring rule with $s_1 = s_2 < \frac{1}{2}$. Accordingly, choices for our four-option profiles imply that the fraction of subjects who implicitly follow some Condorcet rule in the work domain is no higher than (1 - 0.362)·11.6% = 7.4%, which is consistent with our findings for three-option problems.

Profiles 22 and 23 in Table B.1, which we also intermingled with the three-option profiles, leverage the principle of rank-dominance to provide clean separation between proper scoring rules and the

of choices were independent across profiles, $0.205 \times 0.212 = 0.043$ (χ^2-test, $p < 0.001$).

Table B.2: Choices on class-separating profiles

Domain	Work				Politics			
Option	A	B	C	D	A	B	C	D
Condorcet winner	✓				✓			
Optimal for some scoring rule		✓	✓			✓	✓	
Condorcet-separating 1	0.205	0.694	0.099	0.002	0.188	0.746	0.064	0.002
Condorcet-separating 2	0.212	0.719	0.064	0.005	0.188	0.800	0.012	0.000
Consistent Condorcet			0.116				0.111	
Consistent Scoring			0.695				0.732	
Option	A	B	C	D	A	B	C	D
Plurality-runoff winner				✓				✓
Optimal for some scoring rule	✓	✓	✓		✓	✓	✓	
Runoff-separating 1	0.257	0.385	0.314	0.044	0.353	0.405	0.188	0.054
Runoff-separating 2	0.202	0.615	0.141	0.042	0.259	0.643	0.042	0.056
Consistent Runoff			0.012				0.028	
Consistent Scoring			0.884				0.930	

Notes: This table displays the fraction of subjects choosing each of the four options in each of the class-separating profiles. The first 262 subjects were not presented with the profile labelled Runoff-separating 2 in the political domain. The fraction of subjects consistently choosing in accordance with the plurality runoff rule in that domain is based on the remaining subjects.

plurality runoff rule. As shown in the left half of Table B.2, subjects choose option D, the plurality runoff winner, roughly 5% of the time. Only 1.2% of subjects choose D for both profiles,[3] whereas 88.4% of subjects behave as if both choices reflect a single scoring rule from the family specified above. Accordingly, only a small fraction of the Condorcet-consistent behavior for profiles 18 and 19 is likely attributable to use of the plurality runoff rule.

Four-option profiles such as 22 and 23 also enable more nuanced distinctions among rules. For example, they can provide a foundation for distinguishing concave scoring from a general aversion to lowest ranks; see Appendix B.2.1.

We also note that our results for the four-option class-separating profiles in Table B.2 exhibit strikingly little domain sensitivity; choices in the work and political domains resemble each other. It follows that people are generally attracted to the selections of scoring rules and generally averse to those of majoritarian criteria.

B.2.1 Last-place aversion

Does the concave aggregation we document in section III. simply represent linear aggregation with a discount for receiving one's least-preferred alternative (last-place aversion; formalized as using scoring

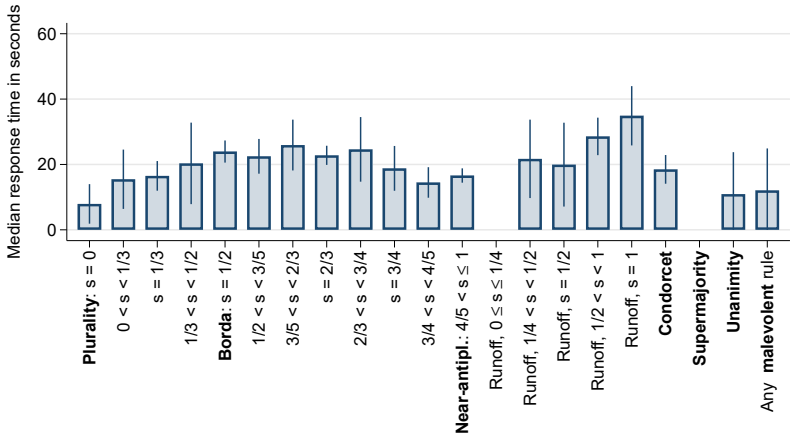
[3] Though small, this fraction is significantly higher than would be observed by chance if the distributions of choices were independent across profiles, $0.044 \times 0.042 = 0.001848$ (χ^2-test, $p < 0.001$).

vectors that assign score $\frac{k-1}{K-1}$ to any option ranked $k \geq 2$, but score $-d < 0$ to the option ranked last in the case of K alternatives), or does it reflect globally concave aggregation in the sense that subjects' choices are described by score vectors that are strictly concave across all ranks (for instance by instance, by using scoring vectors that assign score $\left(\frac{k-1}{K-1}\right)^{\gamma}$ to the option ranked k in the case of K alternatives)? Choices in the runoff-separating profiles of Table B.1 show that globally concave aggregation plays a substantial role. In these profiles, the choice of option A is consistent with a scoring rule with $s \leq 0.5$ whereas the choice of B or C is consistent with $s \in [\frac{1}{2}, \frac{2}{3}]$ and $s \in [\frac{2}{3}, 1]$, respectively, where $s = (\frac{1}{2})^{\gamma}$. Importantly, in these profiles, option B is ranked last by one individual, and option A is ranked last by two individuals. In the three-option profiles 3 and 4, 64% of subjects choose the option consistent with a weakly concave scoring rule. If last-place aversion explains this choice pattern, then, in the four-option profiles 22 and 23, we should observe that at least 64% of subjects avoid the last-place-generating options (A or B). In contrast, the fraction of subjects selecting either option A or option B is given by 64.2% and 81.7% for the first and second runoff-separating profiles, respectively. Hence, last-place aversion cannot be the sole reason for the choice patterns we observe in the three-option profiles.

B.3 Response times by best-fitting rule

For each aggregation rule, Figure B.2 shows the median response times of subjects classified as best-fitting that rule. The most popular rules are not associated with unusually short response times. This suggests that subjects do not adopt specific rules just to save time.

Figure B.2: Median response time by classification based on incentivized data



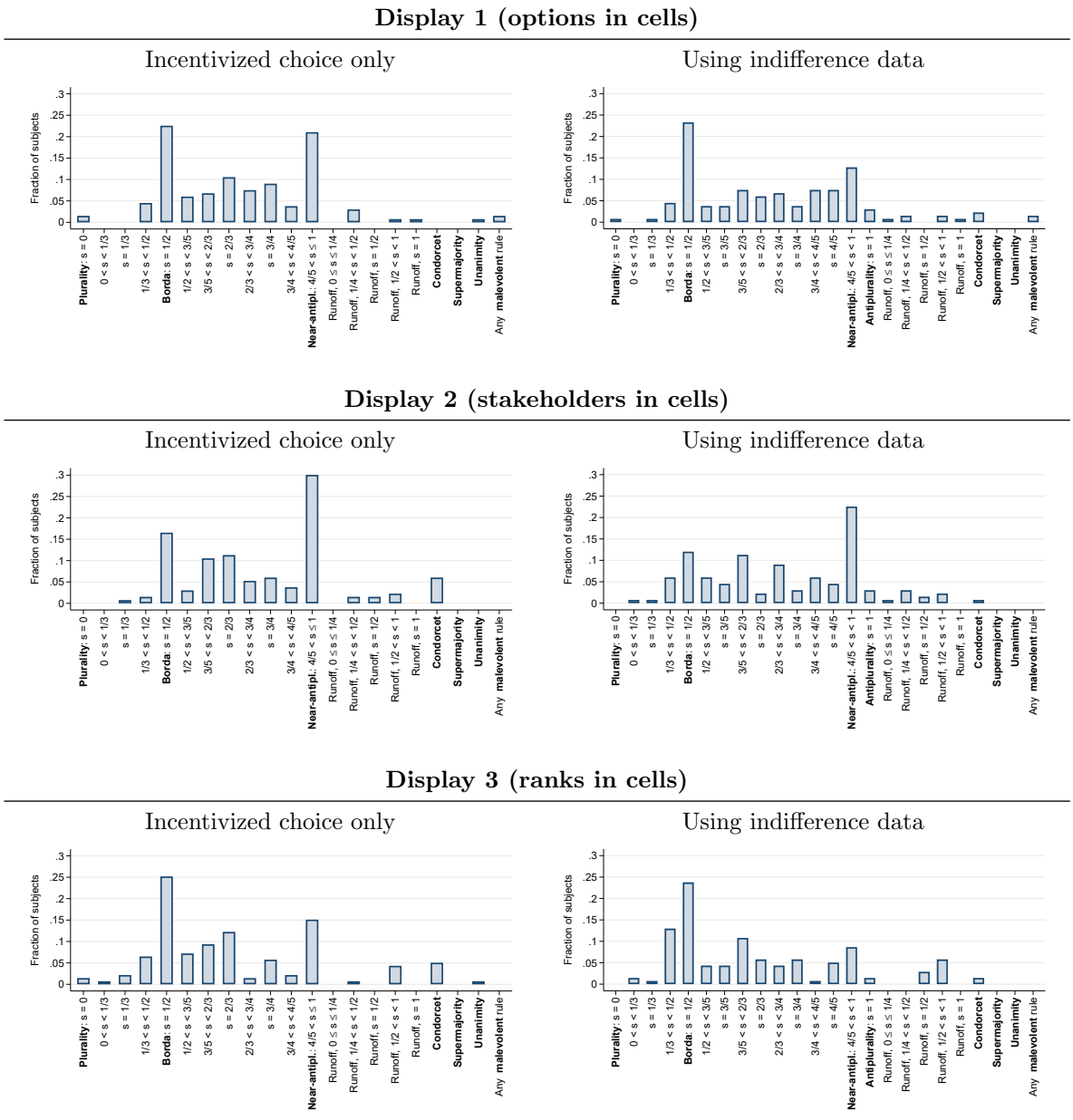
Notes: Spikes show 95% confidence intervals with standard errors clustered by subject.

B.4 Effects of preference displays

Here, we study the influence of the format in which we presented preference profiles on our classification results. Figure B.3 displays the classification to pre-specified rules separately by display format. Graphs on the left hand side use incentivized choices only while those on the right hand side make use of indifference statements.

In each case we see that (i) malevolent and qualified majority rules receive vanishing support, (ii) runoff rules receive minor support, and (iii) the vast majority of subjects follow a concave scoring rule. Differences across the graphs mainly concern the modes of Borda and near-antiplurality. Relying on incentivized data alone, both of these rules emerge as the modal choices in each display version. While Borda is the more pronounced mode in display versions 1 and 3, near-antiplurality is the more pronounced mode in display version 2. This same pattern emerges to a larger extent if we incorporate indifference data for classification. Overall we conclude that our main results are robust to the preference display used, except that we cannot reliably distinguish whether Borda or near-antiplurality is the more pronounced mode.

Figure B.3: Best fitting pre-specified rules, work domain, by display



Notes: Displays 1, 2, and 3 are shown in Figures 2, A.4, and A.5, respectively.

B.5 Endogenous clusters

The k-modes algorithm we use begins by arbitrarily selecting k subjects as initial cluster centers. Then it iterates two steps. First, each subject is assigned to the cluster for which the center matches her choices on the largest number of preference profiles. Second, cluster centers are updated: the new cluster center consists of the vector of modal choices for subjects assigned to that cluster. The algorithm terminates once the cluster centers stabilize.

We search for clusters in the work domain fixing $k = 1, 2, 3, 5$, and 10. For $k = 1$, we run the algorithm 405 times, using each subject's choices as an initial cluster center once. For $k \geq 2$, we run the algorithm 1000 times, in each case randomly setting the initial cluster centers equal to the choices of k randomly selected subjects (excluding those who perfectly conform to pre-specified rules), and retaining the solution with the lowest total within-cluster distance.[4] We limit the pre-specified rules to all scoring rules, all scoring runoff rules and all Condorcet extensions, which have a total of 298 resolute components. We exclude unanimity because the resolute components (of which there are $2^3 \times 3^{14} > 38 \times 10^6$) encompass all choice patterns that are consistent with the Pareto principle. Similarly, we exclude supermajority because it is massively irresolute, so the number of resolute components is enormous. These exclusions are likely inconsequential given the small number of subjects assigned to these rules in Section III., and in any case the exclusion of an empirically important rule can only increase the fraction of subjects assigned to endogenous clusters. Other exclusions are attributable to redundancies.

Table B.3 displays the endogenous clusters uncovered by our clustering algorithm and the fractions of subjects assigned to each.

[4] We use the Hamming distance, i.e. the number of profiles on which two choice sequences differ from each other.

Table B.3: Clustering results

Profile	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Condorcet	A	B	A	A	A	A	A	A	A	A	A	ABC	ABC	A	A	A	A
Scoring																	
$\bar{s}$	1/3	1/3	1/2	1/2	1/2	3/5	2/3	2/3	3/4	3/4	4/5	0	1/2	-	0	0	0
$s < \bar{s}$	A	A[a]	A	A	A	A	A	A	A	A	A	-[b]	AC	AB	-[a]	-[b]	-[a]
$s > \bar{s}$	B	B	B	B	B	B	B	B	B	B	B	B	B	AB	A[c]	A	A
							Endogenous clusters, $k = 1$										
% subjects																	
4.69	B	B	B	B	B	B	B	B	A	B	B	B	B	A	A	A	A
Total: 4.69																	
							Endogenous clusters, $k = 2$										
% subjects																	
4.69	B	B	B	B	B	B	B	B	A	B	B	B	B	A	A	A	A
1.73	B	B	B	A	B	B	A	B	B	A	B	B	B	B	A	A	A
Total: 6.42																	
							Endogenous clusters, $k = 3$										
% subjects																	
4.69	B	B	B	B	B	B	B	B	A	B	B	B	B	A	A	A	A
1.73	B	B	B	A	B	B	A	B	B	A	B	B	B	B	A	A	A
0.25	B	B	B	B	C	C	B	C	C	B	C	A	B	C	C	A	B
Total: 6.67																	
							Endogenous clusters, $k = 5$										
% subjects																	
4.69	B	B	B	B	B	B	B	B	A	B	B	B	B	A	A	A	A
1.73	B	B	B	B	B	B	B	B	A	B	B	B	B	B	A	A	A
1.73	B	B	B	A	B	B	A	B	B	A	B	B	B	B	A	A	A
1.48	B	B	A	A	B	B	B	A	A	A	A	B	B	B	A	A	A
0.74	B	B	A	B	B	B	B	A	C	B	B	B	B	C	C	A	A
Total: 10.37																	
							Endogenous clusters, $k = 10$										
% subjects																	
4.69	B	B	B	B	B	B	B	B	A	B	B	B	B	A	A	A	A
1.73	B	B	B	A	B	B	A	B	B	A	B	B	B	B	A	A	A
1.48	B	B	A	A	B	B	B	A	A	A	A	B	B	A	A	A	A
1.23	B	B	A	A	B	B	A	A	A	A	A	B	B	A	A	A	A
0.99	B	B	B	B	B	B	A	A	B	A	A	B	B	B	A	A	A
0.74	B	B	B	B	B	B	A	B	A	A	A	B	C	A	A	A	A
0.74	B	B	B	B	B	B	B	A	B	A	B	B	B	A	A	A	A
0.25	B	B	B	B	C	C	B	C	C	B	C	A	B	C	C	A	B
0.25	C	C	C	A	C	B	A	A	B	C	C	C	A	C	C	C	A
0.25	B	C	A	A	A	A	B	B	A	B	B	B	B	A	C	B	A
Total: 12.35																	

[a] For $s = 0$, {A,C} is selected.
[b] For $s = 0$, {A,B} is selected.
[c] For $s = 1$, {A,B} is selected.

Notes: This table shows the clusters that emerge endogenously (in addition to those associated with our pre-specified rules) from application of a k-modes algorithm, along with the fractions of subjects assigned to each such cluster. For ease of comparison, the top section of the table shows choices for selected pre-specified rules.

B.6 Cardinal inferences

Table B.4 replicates Table 3 separately for each domain. We observe parameter estimates on $\tilde{s}$ that are comparable in magnitude to those we obtain in the pooled sample. The estimates are larger in the political domain, and only statistically significant if we use the percentile rank of $\tilde{s}$ as a right-hand-side variable. Due to the smaller number of observations, a drop in statistical significance is expected. One possible explanation for the higher estimated coefficients in the political domain compared to the work domain is that participants possess more precise beliefs about the political domain, due to their greater familiarity with the Swiss political landscape than with the working conditions of US-based mTurk workers.

Table B.4: Relation between best-fitting and synthetic scoring parameters by domain

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLE	Estimated scoring parameter s							
	Politics				Work			
Scoring parameter $\tilde{s}$								
Level	0.123		0.117		0.098		0.081	
	(0.084)		(0.085)		(0.074)		(0.074)	
%-rank		0.072		0.065		0.049		0.039
		(0.036)		(0.036)		(0.031)		(0.032)
Risk tolerance								
Level			-0.915				-0.536	
			(0.414)				(0.348)	
%-rank				-0.070				-0.039
				(0.036)				(0.031)
Altruism								
Level			0.030				0.314	
			(0.286)				(0.251)	
%-rank				0.041				0.052
				(0.038)				(0.032)
Observations	398	398	398	398	394	394	394	394
Subjects	398	398	398	398	394	394	394	394

Notes: Parameters estimated with OLS using midpoint values of best-fit score. Regressions include all subjects with monotonic beliefs about reservation prices. Risk tolerance is measured as the certainty equivalent of an equiprobable win 40 / win 10 lottery implied by individual-level CRRA estimates. Altruism is measured as the maximum amount of Swiss Francs the Planner is willing to give up to increase each stakeholder's payoff by $2. For subjects with multiple switches in the risk preference or altruism elicitation, the corresponding variable is set to the mean value among the other subjects. We also include two indicator variables for the presence of multiple switching points, one for each characteristic. All regressions control for the type of preference profile presentation and for whether the political domain was displayed before or after the work domain. Standard errors are clustered by subject.

C Cardinal outcomes experiment

C.1 Design details

Planners complete 20 decision tasks in random order, 12 concerning rescaled versions of the Swap treatment, and 8 concerning rescaled versions of the Addition treatment. The purpose of including re-scaled versions while disguising similarities is to augment sample size. We randomize the order in which options and Stakeholders are listed, which makes it difficult to spot the relationships between the decision tasks.

As in the main experiment, we ensure that our results are not an inadvertent artifact of a particular way of presenting outcome profiles by using *all* three structurally distinct versions of conveying that information. Figures C.1, C.2, and C.3 show a screenshot of each version. Each subject is randomly assigned to one of these display versions and completes the entire experiment in that version.

Parameters *Swap treatments.* The following twelve tasks make up the Swap treatments. For two tasks, we use profiles $S1$ and $S1'$ with all amounts multiplied by a factor of two, and with $\epsilon_i = 0$ for all i. Two other tasks are identical except that the strictly positive ϵ_i equal 0.25. An additional group of four tasks parallel the first four, except that we use a multiplicative factor of 2.5, and we set the strictly positive values of ϵ_1 equal to $1/5$. Yet another group of four tasks parallel the first two groups, except that we use a multiplication factor 3 and set the strictly positive values of ϵ_1 equal to $1/6$.

The cardinal advantage we confer on option A depends on the display format. With the format in Figure C.1, it is $\epsilon_1 = \epsilon_2 = \epsilon_3$ throughout, whereas with the remaining two formats, $\epsilon_1 = \epsilon_2 = 0$ throughout.

Addition treatments. The eight tasks that make up the Addition treatments belong to four pairs. Paired tasks are identical except that one includes option X while the other does not. One pair is based on profile $A1$ with payoffs multiplied by 5 and $\delta = 0.4$. A second pair is based on $A1$ with payoffs multiplied by factor 4 and $\delta = 0.5$. The remaining four rounds parallel the first four, except we use profile $A2$ instead of $A1$, and set $\nu = 0.4$ and $\nu = 0.5$ when the scaling factor is 5 and 4, respectively. With the display format for which no visual overlap occurs, we set $\nu = 0$ throughout.

Implementation Subjects read all instructions on-screen in English. We reproduce these instructions in Appendix E.2. Only those who passed two comprehension checks were allowed to complete the tasks. The first check ensures that subjects understand the payoff information displayed in the tasks. The second ensures that they understand the consequences of selecting any given payoff vector for the group of Stakeholders. We allow subjects who do not pass a check to revisit the instructions and try again.

Figure C.1: Planner's decision interface, version 1 (axes stakeholders and payoffs)

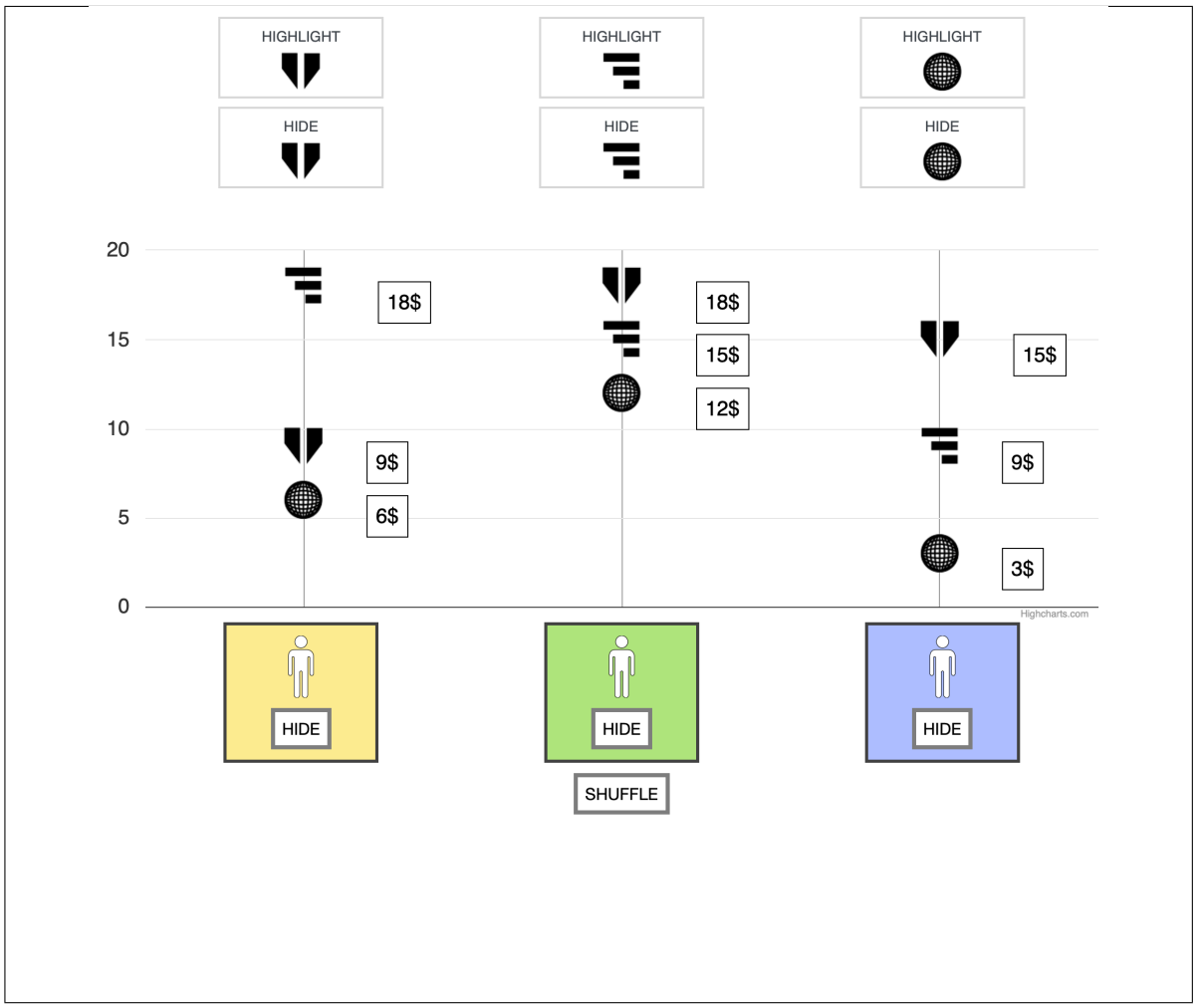


Figure C.2: Planner's decision interface, version 2 (axes options and payoffs)

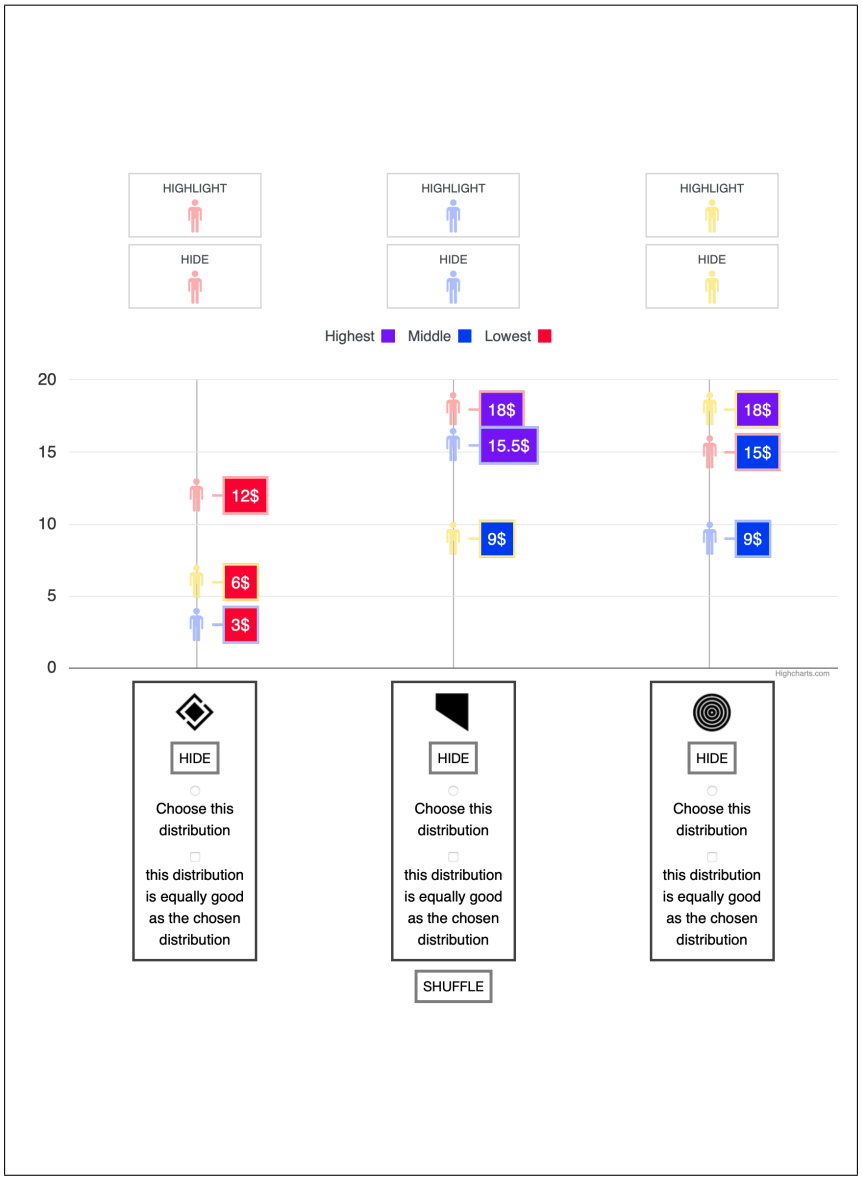


Figure C.3: Planner's decision interface, version 3 (axes individuals and options)

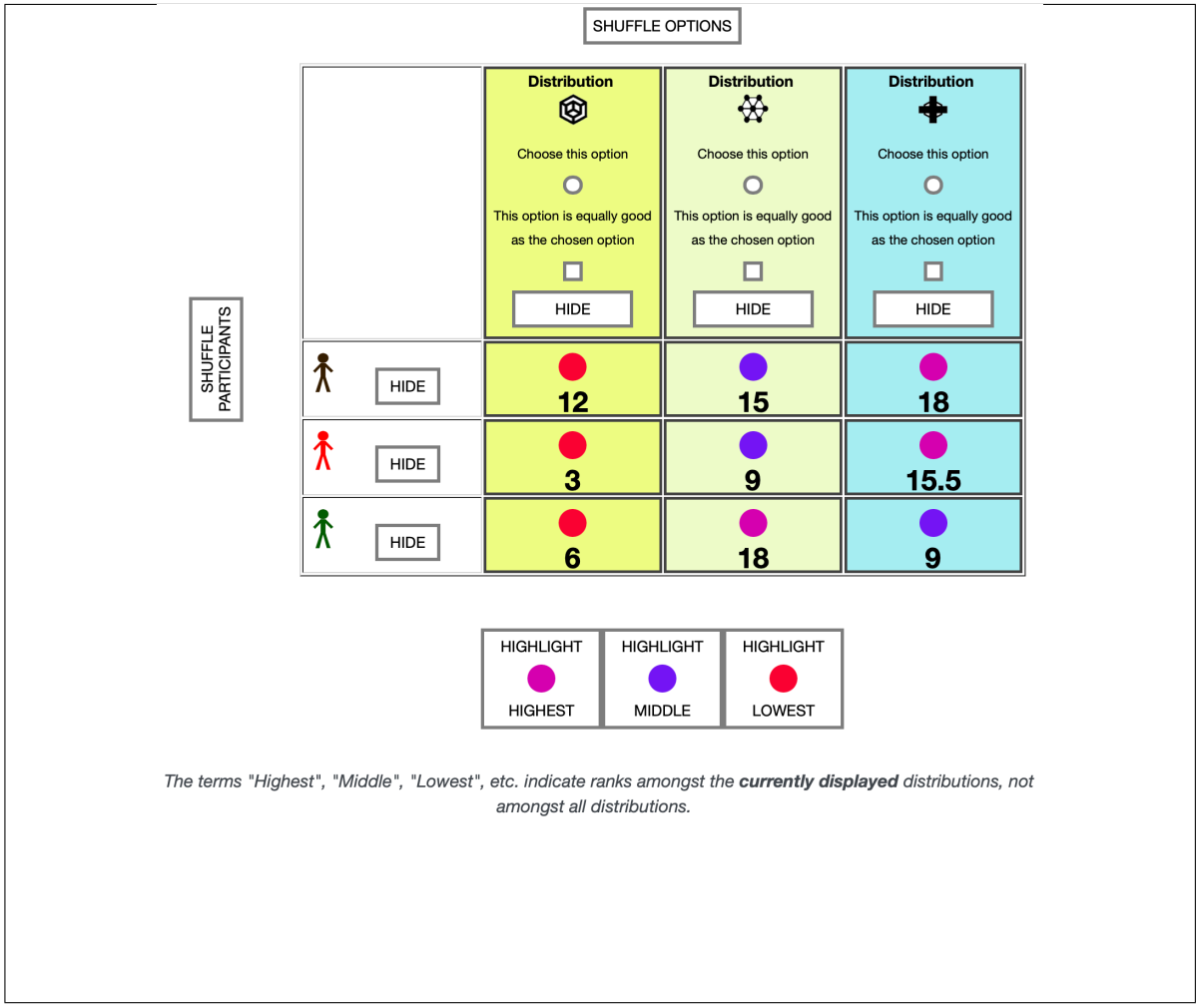


Table C.1: Choice distributions

Profile	$S1$ $\epsilon_i = 0$	$S1'$ $\epsilon_i = 0$	$S1$ $\epsilon_i > 0$	$S1'$ $\epsilon_i > 0$	$A1$	$A1$	$A2$	$A2$
Option X available					Yes	No	Yes	No
Choice (pooled across displays)								
A	0.300	0.712	0.755	0.901	0.812	0.780	0.597	0.504
B	0.687	0.275	0.233	0.085	0.175	0.220	0.396	0.496
C	0.013	0.013	0.012	0.014	-	-	-	-
X	-	-	-	-	0.013	-	0.007	-
Choice (display 1)								
A	0.440	0.644	0.842	0.874	0.842	0.879	0.729	0.687
B	0.547	0.335	0.142	0.114	0.139	0.121	0.266	0.313
C	0.012	0.021	0.016	0.012	-	-	-	-
X	-	-	-	-	0.018	-	0.005	-
Choice (display 2)								
A	0.293	0.673	0.750	0.910	0.855	0.795	0.565	0.458
B	0.698	0.317	0.242	0.082	0.135	0.205	0.425	0.542
C	0.008	0.010	0.008	0.008	-	-	-	-
X	-	-	-	-	0.010	-	0.010	-
Choice (display 3)								
A	0.170	0.818	0.675	0.919	0.740	0.668	0.500	0.374
B	0.813	0.174	0.313	0.060	0.250	0.332	0.495	0.626
C	0.017	0.009	0.012	0.021	-	-	-	-
X	-	-	-	-	0.010	-	0.005	-

C.2 Supplementary results

In this section, we provide more detailed statistical analysis of the resulting choices. In particular, we provide separate results for each display format, and we perform robustness checks for treatments involving profiles $A1$ and $A2$.

Table C.1 shows the choice distributions for each payoff profile category, both pooled across display formats and separately for each display format. Table C.2 performs statistical tests of treatment effects. The first column pools across display formats and includes display format fixed effects. Columns 2, 3, and 4 then show results separately for each display format. We cluster all standard errors at the subject level.

Panel A of Table C.2 compares the choice frequency of option A for the case in which $\epsilon_i = 0$ for all i across profiles $S1$ and $S1'$. While both baseline choice probability and effect size vary substantially across display formats, we observe large treatment effects for each of them. Panel B considers the parallel comparison for the case in which $\epsilon_i > 0$ for some i. Recall that for display format 1, we set $\epsilon_i > 0$ for all i, whereas for display formats 2 and 3 we set $\epsilon_3 > 0$ but keep $\epsilon_1 = \epsilon_2 = 0$. While we find

strong positive effects for display formats 2 and 3, we find a substantially smaller effect for display format 1. Possibly because we conferred a stronger cardinal advantage upon option A in that display format, the baseline probability of selecting option A is higher than for the other display formats. Panel C shows the effect of increasing ϵ_i separately for each display format with profile $S1$. Panel D shows the corresponding regressions for profile $S1'$. We see strong and highly statistically significant treatment effects for each display format and each of the two profiles.

Panels A and B of Table C.3, respectively, show the effects of removing alternative X from profiles $A1$ and $A2$. For profile $A1$, we see strong and significant effects with display formats 2 and 3. For display format 1, we observe a statistically insignificant effect with the opposite sign. Columns 5 to 8 repeat columns 1 to 4, but only include observations for which option X was not chosen. The results are largely similar. For profile $A2$, we observe statistically significant effects (at the 5% level) separately for each display format. Again, these results remain largely unchanged when we exclude observations for which the subjects selected X.

Table C.2: Statistical tests

A. $S1$ vs. $S1'$ when $\epsilon_i = 0$ for all i

VARIABLES	(1)	(2)	(3)	(4)
	Option A chosen			
Display format	All	1	2	3
Profile S1'	0.412	0.204	0.380	0.648
	(0.022)	(0.035)	(0.039)	(0.031)
Constant	0.336	0.440	0.293	0.170
	(0.017)	(0.023)	(0.023)	(0.018)
Display format FE	Yes			
Observations	3,504	1,140	1,200	1,164
Subjects	584	190	200	194

B. $S1$ vs. $S1'$ when $\epsilon_i > 0$ for some i

VARIABLES	(1)	(2)	(3)	(4)
	Option A chosen			
Display format	All	1	2	3
Profile S1'	0.146	0.032	0.160	0.244
	(0.015)	(0.022)	(0.025)	(0.026)
Constant	0.785	0.842	0.750	0.675
	(0.017)	(0.020)	(0.026)	(0.027)
Display format FE	Yes			
Observations	3,504	1,140	1,200	1,164
Subjects	584	190	200	194

C. Effect of increasing ϵ_i in profile $S1$

VARIABLES	(1)	(2)	(3)	(4)
	Option A chosen			
Display format	All	1	2	3
Increased epsilon	0.455	0.402	0.457	0.505
	(0.017)	(0.027)	(0.030)	(0.029)
Constant	0.414	0.440	0.293	0.170
	(0.019)	(0.023)	(0.023)	(0.018)
Display format FE	Yes			
Observations	3,504	1,140	1,200	1,164
Subjects	584	190	200	194

D. Effect of increasing ϵ_i in profile $S1'$

VARIABLES	(1)	(2)	(3)	(4)
	Option A chosen			
Display format	All	1	2	3
Increased epsilon	0.189	0.230	0.237	0.101
	(0.013)	(0.023)	(0.025)	(0.020)
Constant	0.664	0.644	0.673	0.818
	(0.017)	(0.020)	(0.023)	(0.020)
Display format FE	Yes			
Observations	3,504	1,140	1,200	1,164
Subjects	584	190	200	194

Table C.3: Statistical tests

A. $A1$ **by availability of option** X

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Option A chosen							
Display format	All	1	2	3	All	1	2	3
Option X unavailable	-0.033	0.037	-0.060	-0.072	-0.043	0.021	-0.069	-0.080
	(0.014)	(0.024)	(0.021)	(0.028)	(0.014)	(0.023)	(0.022)	(0.027)
Constant	0.877	0.842	0.855	0.740	0.890	0.858	0.864	0.747
	(0.019)	(0.022)	(0.021)	(0.025)	(0.018)	(0.021)	(0.020)	(0.025)
Display format FE	Yes				Yes			
Observations	2,336	760	800	776	2,321	753	796	772
Subjects	584	190	200	194	584	190	200	194

B. $A2$ **by availability of option** X

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Option A chosen							
Display format	All	1	2	3	All	1	2	3
Option X unavailable	-0.092	-0.042	-0.108	-0.126	-0.097	-0.046	-0.113	-0.129
	(0.015)	(0.021)	(0.025)	(0.029)	(0.015)	(0.021)	(0.025)	(0.028)
Constant	0.754	0.729	0.565	0.500	0.758	0.733	0.571	0.503
	(0.029)	(0.030)	(0.032)	(0.032)	(0.029)	(0.029)	(0.032)	(0.032)
Display format FE	Yes				Yes			
Observations	2,336	760	800	776	2,328	758	796	774
Subjects	584	190	200	194	584	190	200	194

D General population experiment

D.1 Design details and summary statistics

Instructions are abridged versions from the laboratory experiment, but include the detailed presentation of the preference display. We only use versions 1 and 2 of presenting preference profiles (see Figures 2 and A.4, respectively), since version 3 is often perceived as less intuitive.

A native speaker of Swedish at a commercial translation agency translated the survey into Swedish. We aimed for 1000 respondents in each country. We began sampling with Dynata until no further subjects could be recruited. We then continued sampling the same survey with Lucid until no further subjects could be recruited (potential repeat participants were automatically filtered out by the Qualtrics survey). We retain subjects who participated through Dynata if they correctly answered the comprehension check about the preference display. For subjects recruited through Lucid we added a filter such that subjects could complete the survey only if they correctly answered these comprehension check questions. Because of these requirements, which are more stringent than typical for the subject population, we managed to obtain 711 subjects in Sweden and a comparable 805 subjects in the US. We recruited all Stakeholders with pollfish.

We exclude subjects who failed the comprehension check. Those recruited with Lucid were terminated upon failing the check. Those recruited with Dynata who failed the check could nonetheless finish the study, but we do not include them in our analysis.

Table D.1 presents the distribution of the demographic characteristics of the general population samples.

D.2 Corroboration based on four-option profiles

The general population experiment also includes the two four-option profiles of Table B.2 that separate between the class of proper scoring rules and the class of Condorcet extensions.

We find that only 8.0% of U.S. subjects and 5.8% of Swedish subjects consistently choose the Condorcet winner for both Condorcet-separating profiles (unweighted estimates). Moreover, 23.4% (U.S.) and 14.6% (Sweden) of those subjects express indifference between options for at least one of these profiles, which suggests that they follow plurality rule. That leaves roughly 5% to 6% of subjects in the Condorcet category. Likewise, small minorities (3.1% of U.S. subjects and 1.7% of Swedish subjects) choose the plurality runoff winner in both runoff-separating profiles. All of these results closely parallel our findings for the student sample.

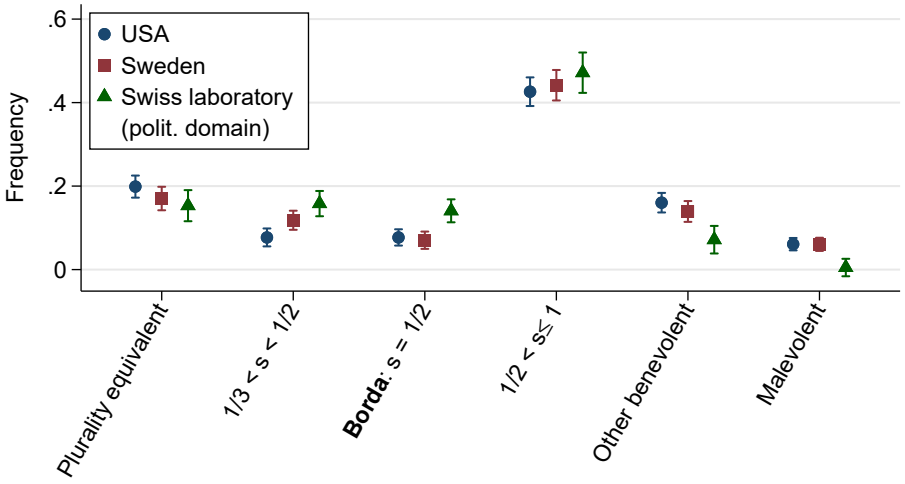
D.3 Robustness to survey weights

Figure D.1 replicates Figure 7 without using survey weights. Classification frequencies remain very similar across the general population samples.

Table D.1: Demographic characteristics of the general population samples

Variable	USA	Sweden
Gender		
Male	0.509	0.560
Female	0.489	0.433
Non-binary	0.001	0.007
Age		
18-25	0.098	0.184
26-35	0.088	0.188
36-45	0.062	0.141
46-55	0.155	0.179
56-65	0.160	0.191
66-75	0.200	0.100
76-85	0.214	0.015
>85	0.022	0.001
Race		
White (non-hispanic)	0.625	
Black	0.057	
White (hispanic)	0.255	
Other	0.063	
Native Swedish		0.778
Other European background		0.124
Other		0.098
Political party preference		
Republican or other right-learning party	0.477	
Democrat or other left-learning party	0.523	
Left Party		0.149
Social Democratic Party		0.249
Green Party		0.065
Centre Party		0.089
Moderate Party		0.239
Sweden Democrats		0.210
Education		
Primary school	0.000	0.052
Some high school	0.005	0.058
High school or GED	0.145	0.266
Some college	0.194	0.159
Associate's or Bachelor's degree	0.419	0.412
Master's degree	0.189	0.030
Doctoral degree	0.048	0.024
Income bracket		
< USD 50k, < SEK 500k	0.420	0.779
between USD 50k and 100k or SEK 500k and 1,000k	0.349	0.208
> USD 100k, > SEK 1,000k	0.231	0.013
Marital status		
Married	0.511	0.370
Widowed	0.097	0.038
Divorced	0.142	0.090
Separated	0.010	0.032
Never married	0.241	0.470
N	805.000	711.000

Figure D.1: Classification of general population samples to pre-specified rules



Notes: Bayes classifications based on consequential choices for the seven three-option preferences profiles indicated with stars in Table 1. Whiskers denote 95% confidence intervals.

We also explore how the frequencies change when we weigh observations to make the U.S. sample more representative with respect to race. (We leave the weights for the Swedish sample unchanged since Statistics Sweden (2018) does not provide suitable data on race categories.) Using the 2018 General Social Survey (Smith et al., 2019) we generate weights for 16 population categories, defined by (i) gender, (ii) political party preference, and (iii) race (white, hispanic, black, other). The differences between the U.S. and Swedish samples remain small and retain their direction, though the difference in the fraction of subjects assigned to strictly concave scoring rules now also becomes statistically significant. This result might be fragile, as it is driven by disproportionately large weights assigned to black participants, who represent only 5.7% of the sample.

D.4 Relation to attitudes about political representation

Here, we detail the relation between subjects' self-reported attitudes about political representation and our behavioral measure of aggregation preference. Next to rating, for each hypothetical political leader described in Section VI., the extent to which that person represents the will of the citizens, subjects also indicate their level of agreement or disagreement with each of the following two statements: "*The political system should strive for compromise solutions that everyone can live with even if the result is nobody's absolute favorite*," and "*What the majority wants is right for a country, even if that makes some citizens suffer.*"

Table D.2 shows the relation between these attitudes and our behavioral measure. For columns 1 and 2, the dependent variable is a binary indicator of preference for the compromise candidate. For columns 3 and 4, it is an index of preference for compromise policies constructed as follows: we assign

Table D.2: Relation between behavioral measures of aggregation preference and attitudes about political representation

VARIABLES	(1)	(2)	(3)	(4)
	Prefers compromise candidate		Prefers compromise solutions	
Mean of the dep. var.	0.801		0.687	
Scoring parameter	0.085	0.081	0.096	0.078
	(0.042)	(0.042)	(0.056)	(0.056)
Demographic controls		✓		✓
N	1411	1411	1411	1411

Notes: OLS regressions. All regressions control for sample provider and display fixed effects. Demographic controls include nationality, gender, age, marital status, percentile rank of respondents' education within the sample in their respective country, indicators for being unemployed and for being part-time employed, as well as the percentile rank of income within the sample for the respondents' country.

values 0, $\frac{1}{3}$, $\frac{2}{3}$, and 1 to the responses 'strongly disagree', 'disagree', 'agree', and 'strongly agree' for the first of the two statement above, invert the scores for the second, and average responses across them. Each column reports an OLS regression pooling over U.S. and Swedish subjects. The main independent variable is the subject's scoring parameter, which we compute by restricting the Bayes classification to scoring rules and assigning interval midpoints. In all cases, we control for sample provider and display fixed effects. While the results are not strong, they are nevertheless suggestive. As expected, those who deploy more concave scoring rules tend to prefer greater compromise in political processes. The relationship is statistically significant at the 5% level in column 1, at the 10% level in columns 2 and 3, and statistically insignificant but directionally consistent in column 4.

E Experiment instructions

E.1 Main experiment

Technical Check

To test whether your computer can display the study correctly, please copy the following number into the field below

225784

←

→

WELCOME

This is a research study run by the Department of Economics at the University of Zurich.

This study will take about **50 to 80 minutes** to complete. The average participant will earn Fr. 45 for completing this study. This consists of a base payment of Fr. 30 that you will receive with certainty, and a variable payment of up to Fr. 38 that depends on your decisions and on luck.

You will receive payment in cash at the end of this study.

This study has been approved by the ethics review board of the department of economics in protocol OEC IRB # 2020-035. The study is run in collaboration with Stanford University. It has been approved in Stanford IRB protocol #53339.

By clicking the "continue" button below, you consent to participating in this decision making study.

→

Instructions

Please read the instructions carefully.

There will be two comprehension checks. You will be able to continue with the study only if you correctly answer all questions in both comprehension checks.

This study has three parts.

In **part A**, you will make decisions that determine what type of work a group of five other study participants will have to complete.

In **part B**, you will make decisions that determine which of five political parties will receive a donation of CHF30

In **part C**, you will make decisions that determine your own payoff.

Consequences of your decisions in parts A and B

There is a one in four chance that your choices will determine either the work that the group of five other study participants will complete or the party that will receive the donation. If so, each of your decisions in parts A and B is equally likely to count. Only one decision will be carried out.

Consequences of your decisions in part C

Your compensation for completing this study consists of a fixed payment of Fr. 30 and a variable payment ranging between Fr. 0 and Fr. 38; on average your total payment will be around Fr. 45. The variable payment will be determined by part C of the study. It will depend on your decisions and on luck.

If you are matched to a group of five other participants, you are the only person who is matched to them.

On behalf of the Economics Department at UZH, we guarantee that we carry out all aspects of the study exactly as we describe to you. The rules governing our research do not permit us to deceive our participants in any way.

Part A

←

→

Who will be affected by my decisions?

In this part of the study, you will make decisions that may affect a group of five other participants. These five other participants are workers whom we have recruited on the crowdsourcing website Amazon Mechanical Turk (MTurk).

Please read the following description about MTurk and workers on that platform, so you know who will be affected by the decisions you make in this study today.



About workers on MTurk

Amazon Mechanical Turk is a website on which businesses can hire remotely located workers.

Employers post jobs known as Human Intelligence Tasks (HITs), such as identifying specific content in an image or video, writing product descriptions, or answering questions, among others. Workers browse among existing jobs and complete them in exchange for a rate set by the employer.

Any resident of the United States can register as a worker on MTurk. Once registered they complete tasks in exchange for money. Payment for completed tasks can be transferred to a Worker's U.S. bank account.

Workers set their own hours and are not under any obligation to accept any particular task. They are entirely flexible regarding how many hours they work, when they work, or where they do it. In this sense, they face similar opportunities as individuals who drive for the rideshare platform Uber.com.

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The MTurk workers recruited for this experiment

All workers who may be affected by your decisions have been active on mTurk for a substantial amount of time. They all have completed at least 1000 Human Interaction Tasks, and they have received good reviews for their work (at least 98% satisfaction rate). All of them are based in the United States.

Pay for workers in this study, and in the United States in general

You are deciding for mTurk workers whom we will remunerate with an average payment of USD 15 per hour. That amount is similar to the average earnings of US-drivers on the rideshare platform Uber. Drivers earn USD 14.73 per hour, after expenses such as car insurance and repairs, according to www.ridester.com/how-much-do-uber-drivers-make/. Taxi drivers in Zurich, by comparison, earn around CHF 22 per hour.

A similar relation holds for cashiers. While a cashier at the Swiss retailer Migros earns about CHF 20 per hour, the large US retailers Walmart and Target remunerate typical cashiers with USD 10 and USD 13 per hour, respectively.

A reasonable rule of thumb is that USD1 buys a bit less than one-and-a half times as much in the United States as CHF 1 buys in Zurich. At the same time, many workers in the United States also earn substantially less than the average resident of Zurich.

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Your decisions

As explained before, we have enlisted a team of five workers from MTurk. We have hired the five workers to complete five different work tasks that we will explain momentarily.

Your task in this study is to decide which of the five workers will complete which task.

Important

The five workers have already participated in a first part of the study. They will complete the second part of the study after you have made your choice about which worker will complete which task. You are the only person who determines the tasks of those five workers.

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The five workers' tasks

The team of five workers will need to complete a total of five different tasks.

Not all workers will prefer the same tasks. Tasks that are attractive to some will be unattractive to others, and vice versa.

The tasks include, for instance, audio transcription, sorting hate-speech out of a dataset of online comments, or classifying movie reviews. Some tasks may be emotionally charged, some may require a lot of concentration and careful thought, and others simply require some time and practice. We will show you each task momentarily.

Each team-member will receive $10 once they have completed the task assigned to them. If a team-member fails to complete the assigned task, they will not receive any payment.

On the next five pages, you'll see each of the five tasks. Please complete one or two examples of each task, then click continue.

←

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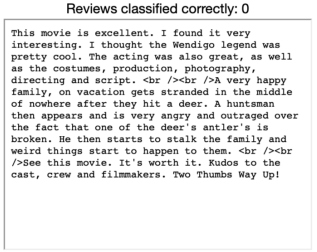
Movie Review Classification (task 1)

In this task, the worker will classify 400 movie reviews by whether they are positive or negative; that is, by whether the reviewer liked or disliked the movie. This task will take **around half an hour**, but could take 15 minutes more or less depending on the worker's motivation and speed.

Reviews that have been classified into positive or negative by hand are an important input for training computer algorithms.

Please give it a try!
Once you're done, click the next button. It will appear as soon as you have classified one review correctly. (Scroll to the bottom of the page.)

Reviews classified correctly: 0



←

Spoken Words Transcription (task 2)

In this task, the worker will hear 400 spoken words. For each of them, the worker will click a button to indicate what was said. Workers with experience in audio-transcription will typically require **about 15 minutes** to transcribe the text, whereas workers with less experience may take a bit longer. Transcribing spoken words takes few special skills, but requires a quiet environment and good headphones or speakers.

Transcribing spoken text is needed as computers can readily analyze written data, but often have trouble with spoken words.

Please give it a try!
Once you're done, click the next button. It will appear as soon as you've transcribed one word correctly. (Scroll to the bottom of the page.)

Words transcribed correctly: 0





BED CAT DOG DOWN GO HAPPY
HOUSE SEVEN UP YES

←

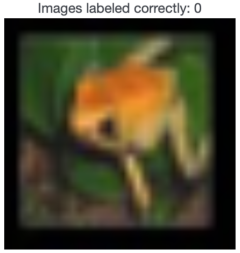
Image Labeling (task 3)

In this task, the worker will see a sequence of 400 images. For each image the worker will click a button to indicate the content of the image. This task will take **about half an hour** but could take 15 minutes more or less depending on the worker's speed. Labeling images does not take any special skills, and can easily be done while listening to music.

Images whose content has been indicated by hand are an important input for training computer algorithms (see, e.g., https://en.wikipedia.org/wiki/Labeled_data).

Please give it a try!
Once you're done, click the next button. It will appear as soon as you have classified one image correctly. (Scroll to the bottom of the page.)

Images labeled correctly: 0



Plane Car
Cat Bird
Deer Dog
Frog Ship
Horse Truck

Twitter hate speech sorting (task 4)

In this task, the worker will sort 400 short messages posted on twitter.com by whether they include hate speech (e.g. racist or sexist statements). This task will take **around half an hour,** but could take 15 minutes more or less depending on the worker's motivation and speed.

Some workers may find this task emotionally taxing.

Messages that have been hand-classified into offensive and harmless are an important input for training computer algorithms to automatically detect offensive messages (see, e.g., https://en.wikipedia.org/wiki/Labeled_data).

Please give it a try!
Once you're done, click the next button. It will appear as soon as you've classified one message correctly. (Scroll to the bottom of the page.)

Classified correctly: 0

HOWDYDOWdY11
@HowdyDowdy11

I just finished running 2.27 km in 13m:25s with #Endomondo #endorphins https://t.co/et8hp3BI9G

HATE SPEECH | CLEAN

←

Assigning apprentices to mentors (task 5)

This task requires a bit more thought than the others. The worker assigned to this task will repeatedly assign each of five (hypothetical) apprentices at a (hypothetical) company to one of five (hypothetical) mentors at that company.

The worker will have to create such assignments for 5 companies. This task will take **around half an hour,** but could take 15 minutes more or less.

The reason is that worker cannot just create any arbitrary assignment. Instead, each of the apprentices have indicated which mentor they would prefer most, second most, and so on. Likewise, each of the mentors have indicated which of the apprentices they would most like to mentor, which they would second-most like to mentor, and so on. The worker will need to find a way to pair apprentices and mentors to make all apprentices and mentors as happy as possible. (Specifically, the worker will have to find an assignment in which there are no two people that are not paired with each other, but would prefer each other over their assigned partners.)

Some people will find this task more engaging than the less challenging tasks, while others will be put off by it. Some people will be much better at this task than others.

Give this task a try if you like. (You do not need to complete it.) Scroll to the bottom and click Next once you're done.

Mentors

Janice's preferences over apprentices are 1. Dylan, 2. Grace, 3. Willie, 4. Madison, 5. Jordan
Billy's preferences over apprentices are 1. Dylan, 2. Grace, 3. Willie, 4. Madison, 5. Jordan
Julia's preferences over apprentices are 1. Dylan, 2. Willie, 3. Madison, 4. Jordan, 5. Grace
Bruce's preferences over apprentices are 1. Jordan, 2. Dylan, 3. Madison, 4. Grace, 5. Willie
Marie's preferences over apprentices are 1. Grace, 2. Dylan, 3. Willie, 4. Madison, 5. Jordan



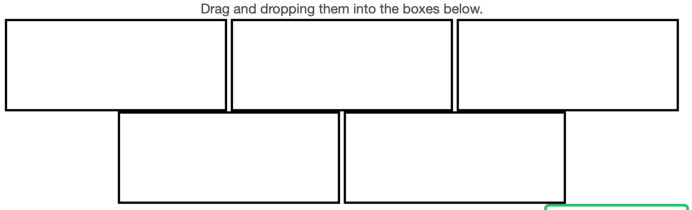
Apprentices

Willie's preferences over mentors are 1. Bruce, 2. Billy, 3. Julia, 4. Janice, 5. Marie
Madison's preferences over mentors are 1. Bruce, 2. Janice, 3. Julia, 4. Billy, 5. Marie
Jordan's preferences over mentors are 1. Janice, 2. Julia, 3. Billy, 4. Bruce, 5. Marie
Grace's preferences over mentors are 1. Bruce, 2. Marie, 3. Billy, 4. Janice, 5. Julia
Dylan's preferences over mentors are 1. Julia, 2. Billy, 3. Marie, 4. Janice, 5. Bruce



Pair mentors and apprentices

Drag and dropping them into the boxes below.



CHECK ANSWER

How will I assign tasks to workers?

Part A of this study has 28 rounds. In each round, you will select an “Assignment,” by which we mean a way of allocating the five tasks among the five workers. We will present you with two to four possible Assignments. Your task will be to select one of the Assignments.

One of these rounds pertains to the five workers we have assigned to you. Your choice of an Assignment for that round is real, and we will actually carry it out (if this part of the experiment has randomly been chosen to be carried out). Your choice in that round will determine which worker will complete which task. However, we are not going to tell you which round involves your real choice.

You should therefore treat every one of these rounds as if it were real, because it could be!

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The pre-selected assignments

Recall that a task assignment simply describes which worker will complete which task. We will refer to each Assignment by an icon like  ,  , or  . These icons have absolutely no meaning, apart from serving as labels to help you visually distinguish between the assignments.

Here’s an example (don’t bother to remember it, it’s just an example)

	Worker 1	Worker 2	Worker 3	Worker 4	Worker 5
Assignment 	Image labeling	Speech transcription	Hate-speech filtering	Apprentice-mentor assignment	Movie review classification
Assignment 	Apprentice-mentor assignment	Movie review classification	Image labeling	Hate-speech filtering	Speech transcription

With Assignment  , worker 1 will label images, worker 2 will transcribe speech, and so on, as you can see in the first row of the table.

With Assignment  , on the other hand, worker 1 completes the apprentice-mentorship assignment, worker 2 classifies movie reviews, and so forth, as you can see in the second row of the table.

One more thing: As in the example above, if you switch from one Assignment to another, then *every* worker will complete a different task. There are no two Assignments in which some worker completes the same task in each of those Assignments.

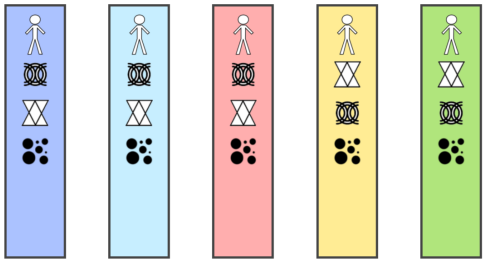
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The workers' preferences

The five workers differ in which tasks they like or dislike.

To help you make your decision, you will see each group member's preferences over the pre-selected Assignments as in the following picture. Each bar (with a stick figure) represents one member of the group of five for whom you are choosing an Assignment.



In this picture, each bar (with a stick figure) represents one worker. Each bar contains all three symbols , , and , that represent the three possible task assignments from which you will get to choose. In each bar, the Assignment on top is the one that the team member prefers most, whereas the Assignment on the bottom is the one he or she prefers least.

Consider the worker on the very left (dark blue), for instance. Of the three tasks he might complete, he most prefers the one he will be given in Assignment . (As you can see in the table below, that would be Task D). His second-most preferred task is the one he will complete in Assignment ; and he least prefers the task he will complete in Assignment . The worker on the very right (green) has different preferences. She most prefers the task she would be given in Assignment , second-most the task she'll get with Assignment , and she least prefers the task she'll have to complete in Assignment .

***Important**: You will only learn the workers' preferences over the pre-selected Assignments. You will not learn who will complete which task in which Assignment.*

	Worker 1	Worker 2	Worker 3	Worker 4	Worker 5
Assignment	Task B	Task A	Task D	Task E	Task C
Assignment	Task A	Task D	Task C	Task B	Task E
Assignment	Task E	Task B	Task A	Task C	Task D

←

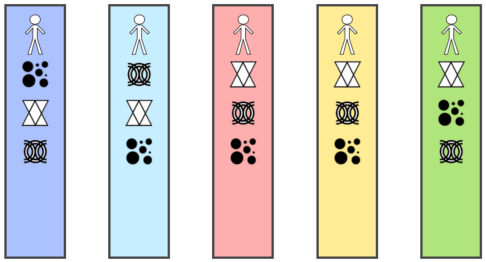
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Comprehension Check 1

To make sure you correctly understand how information about the Workers' preferences is being displayed to you, please answer the questions below. All questions refer to the Assignments below. (These are *different* Assignments than on the previous page. The workers' preference rankings are different, too.)

If you have trouble finding the correct answers, please click the "previous" button below (with the arrow to the left) and study the instructions more carefully.

If you feel you have understood the instructions, but you still cannot continue, please send an email to sandro.ambuehl@econ.uzh.ch



How many workers rank assignment  on top (most preferred)?

0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○

How many workers rank assignment  in the middle?

0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○

How many workers rank assignment  on the bottom (least preferred)?

0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○

Which Assignment does the worker on the very left prefer most?

Assignment  ○ Assignment  ○ Assignment  ○

Which Assignment does the worker on the very left prefer neither most nor least (middle)?

Assignment  ○ Assignment  ○ Assignment  ○

Which Assignment does the worker on the very left prefer least?

Assignment  ○ Assignment  ○ Assignment  ○

Where does the worker on the very right rank Assignment  ?

Top ○ Middle ○ Bottom ○

Where does the worker on the very right rank Assignment  ?

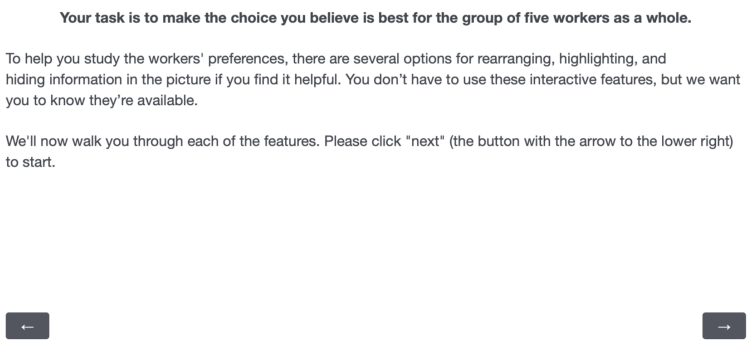
Top ○ Middle ○ Bottom ○

Where does the worker on the very right rank Assignment  ?

Top ○ Middle ○ Bottom ○

One of your answers to the comprehension check questions is incorrect. Please study the image with the preferences carefully. You might also want to double-check the instructions to make sure you understand them.

Close



Subjects see each of the following statements, and complete the requested action before the next statement is shown.

(i) You can drag and drop each worker to a different position. Please give this a try by dragging a worker to a different location.

(ii) Underneath each stick figure representing the worker, you will see a button labeled "Hide". If you click it, that worker's preferences will be hidden. If you click it a second time, that worker's preferences will be displayed again. Please hide, then show, one of the workers.

(iii) At the bottom of the figure, you see two rows of buttons. Buttons in the first row allow you to highlight an assignment. If you click the button a second time, the highlighting will be switched off. Please give this a try.

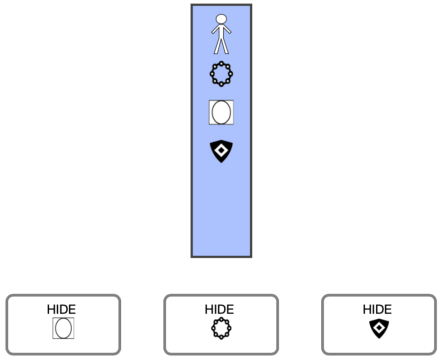
(iv) Buttons in the second row allow you to hide an assignments. If you click such a button a second time, the assignment will be displayed again. Please hide, then show one of the assignments.

(v) Finally, on top of the figure, you see a button labelled "shuffle". That button will shuffle the order of the workers. Please click it.

(vi) Great, that's all the features. Please click "next" to continue.

Hiding Assignments changes the figure. Why and how?

The figure will only show you the Workers' preferences over the options that you are currently displaying. If the figure shows all three Assignments, you will see them stacked in three rows. If you hide one of the Assignments, then you will see the Workers' preferences over the two remaining assignments, so there will only be two rows. For instance, consider the Worker below.

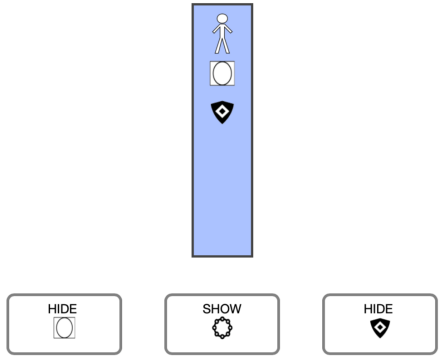


Now, go ahead and hide Assignment .

←

Hiding Assignments changes the figure. Why and how?

The figure will only show you the Workers' preferences over the options that you are currently displaying. If the figure shows all three Assignments, you will see them stacked in three rows. If you hide one of the Assignments, then you will see the Workers' preferences over the two remaining assignments, so there will only be two rows. For instance, consider the Worker below.

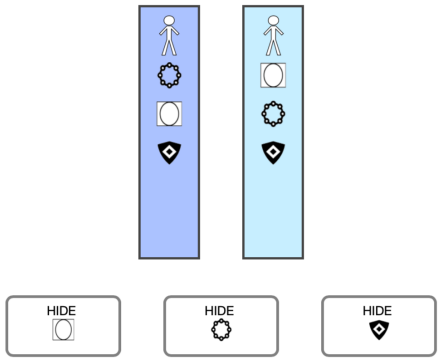


Now, go ahead and hide Assignment .

Assignment is the one the Worker prefers most out of the three Assignments. Once we hide Assignment , there are only two Assignments left. Hence, the figure only shows two rows of Assignments. Out of the two Assignments that are still being displayed, the Worker prefers Assignment most, so that's now placed into the top row. But note that if you display all three options, he would rank that Assignment only in the middle; he likes the non-displayed Assignment better than Assignment !

→

Now, let's look at what happens if there is more than one worker; let's add a second Worker. You can see that Worker's preference ranking over the Assignments below. In this figure, the two workers have different preferences for Assignment ; for one Worker it's the best of the three, but for the other Worker its only the second-best of the three:

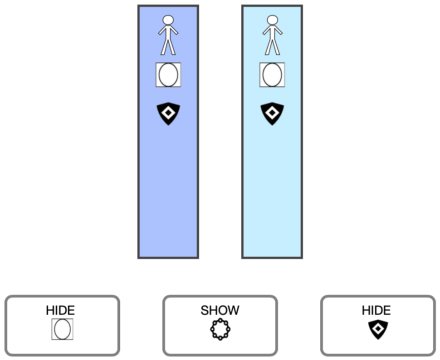


Now, again, hide Assignment .

←

→

Now, let's look at what happens if there is more than one worker; let's add a second Worker. You can see that Worker's preference ranking over the Assignments below. In this figure, the two workers have different preferences for Assignment ; for one Worker it's the best of the three, but for the other Worker its only the second-best of the three:



Now, again, hide Assignment .

As you can see, Assignment is now in the top row for both workers. Why did that happen? The reason is that both Workers like Assignment more than Assignment . How the workers would rank Assignment compared to the hidden option is not visible from this figure (but you can see it by displaying Assignment again).

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Information about the group members' preferences

The group members have already participated in a first part of the experiment, in which they told us their true preference ranking over the tasks.

They have done that for the options in exactly one of the 28 rounds you will see. Your decision for that round *will* be carried out for the group.

We are not going to tell you which of the 28 rounds presents you with your real choice.

Hence, you should make each decision in each round as if it is the one that counts, because it might be!

Click here if you would like to know more about how the group member's preferences were measured.

(Otherwise, scroll down all the way)

In the first part of the study, each worker first saw the same description of each task that you have seen before. Then, each worker sorted the five tasks in the order of their preference.

To make sure workers reported their genuine preferences, each worker faced a 5% chance that their own choice would determine which task they would have to complete. Workers also knew that with the remaining chance, a different procedure would determine the task they will complete (but workers did not learn what that procedure is).

(To make sure workers reported their entire preference ranking genuinely, rather than only their top choice, workers knew that the computer had randomly chosen two tasks in advance. Of those two tasks, they would complete the one they had ranked more highly. Workers did not know which two tasks the computer had pre-selected. Accordingly, it was in the worker's own best interest to truthfully report their preference ranking over all five tasks.)

You are deciding for a group of workers in which *none* of the workers themselves determined the outcome.

←

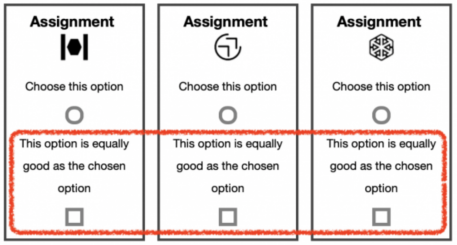
→

What if several Assignments are equally good for the group of five workers?

In some rounds, there might be multiple Assignments that you deem equally good for the group. In other rounds, there might be one single Assignment that you deem best for the group.

In all rounds, you will have to choose one single Assignment to be carried out.

We will ask you, however, whether there are other alternatives you deem equally good as the one you have chosen, like this:



Please answer those questions truthfully.

The block of text below the button is shown only to subjects who click the button.

What happens if a worker is assigned a task, but does not to complete it?

A worker who does not complete the assigned task will not receive the $10 they would otherwise have received.

Moreover, we will check that each worker completes each task successfully. If not, we will treat them as if they didn't complete the task.

Do the five workers know each other?

No, they do not. We have recruited them at random from a pool of many thousand workers on the Amazon Mechanical Turk online labor platform.

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How will my own payment be determined?

We have been discussing Part A of the study. Your choices in Part A may affect other people, but they will not affect your own payment. Your payment will be determined by one of the choices you will make in Part C of the study. We will explain how once Part C begins.

Please pay attention throughout and make all decisions carefully.
Your choices will have real consequences for a group of five other participants (if this part is randomly selected to be carried out)! The other participants are real people.

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Comprehension Check

Before you start with your decisions, please check all the correct statements below (and only those).

If you have trouble finding the correct answers, please click the "previous" button below (with the arrow to the left) and study the instructions more carefully.

If you feel you have understood the instructions, but you still cannot continue, please raise your hand.

- [ ] The five workers are real. My choice of Assignment will determine the task each group member will complete (if this part is randomly chosen to be carried out).
- [ ] Exactly one round is the "real" one: My decision in that round will determine the work that each of the members of a group of five workers on Amazon Mechanical Turk will complete (if this part is randomly chosen to be carried out).
- [ ] A worker who is assigned to a task can just click through without paying any attention. The quality of work is irrelevant; the worker will receive the $10 in any case
- [ ] Two of the rounds will determine the work that each of the five workers will have to complete (if this part is randomly chosen to be carried out).
- [ ] The five tasks are: hate speech filtering, image labeling, audio transcription, assigning apprentices to mentors, and classifying movie reviews.
- [ ] The five workers are hypothetical, there are no real people affected by my decisions.
- [ ] The five workers have already participated in a first part of the experiment in which they revealed their preferences over the tasks.
- [ ] A Worker will receive $10 for completing the assigned task.
- [ ] Each worker will complete the same task, regardless of what I choose.

← →

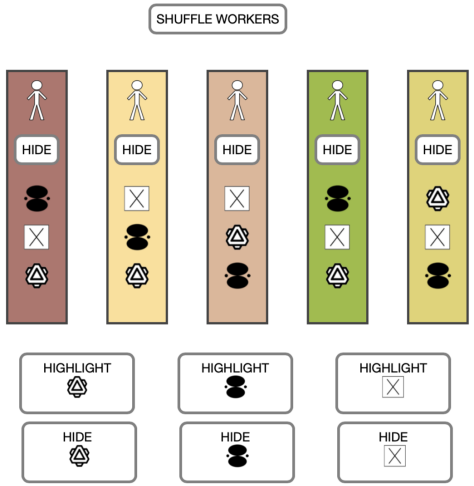
Your decisions begin now.

Please make each decision as if it is the one that counts, because it might be!

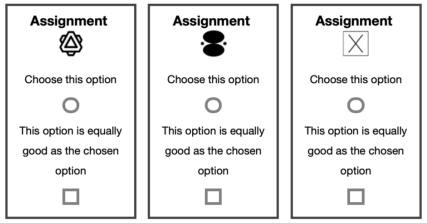
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Round 1 of 28.

Study the workers' preferences, and choose a task assignment.



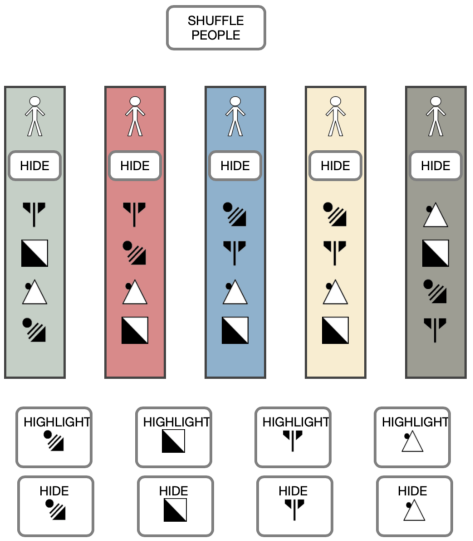
Choose the Assignment to be carried out for the group of five workers.



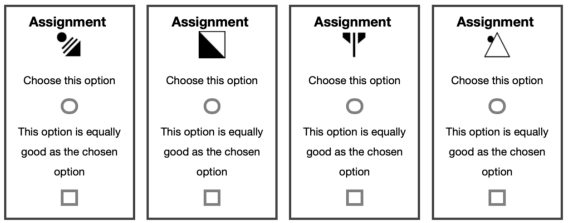
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Round 2 of 28.

Study the workers' preferences, and choose a task assignment.



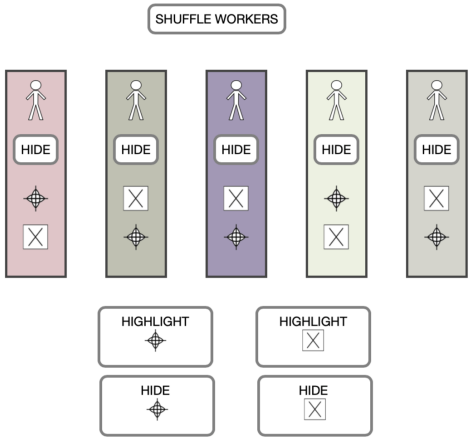
Choose the Assignment to be carried out for the group of five workers.



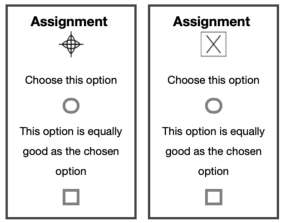
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Round 8 of 28.

Study the workers' preferences, and choose a task assignment.



Choose the Assignment to be carried out for the group of five workers.



Unavailable Assignments

In each of the next three rounds, one of the Assignments will be unavailable. These rounds proceed like all the other rounds, except that you will not be able to choose the unavailable Assignment.

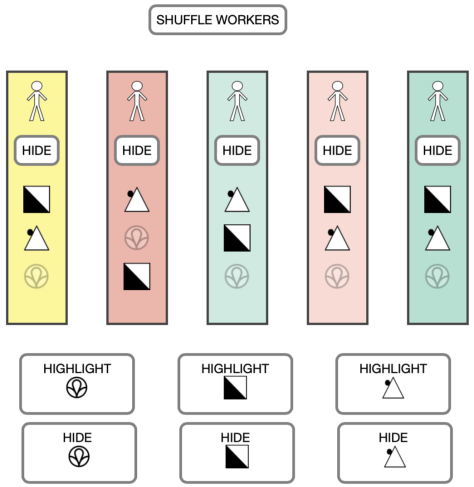
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Round 25 of 28.

Study the workers' preferences, and choose a task assignment.

In this round, Assignment is unavailable. You will not be able to select that Assignment.



Choose the Assignment to be carried out for the group of five workers.

Assignment	**Assignment**	**Assignment**
Option unavailable	Choose this option	Choose this option
	This option is equally good as the chosen option	This option is equally good as the chosen option

Part B

→

A Fr. 30 donation to a political party

In this part of the study, you will make decisions about a Fr. 30 donation to one of the five political parties that have the largest representation in the Swiss National Council. These are the following parties:

- 

FDP / PLR (FDP.The Liberals)
- 

SVP / UDC (Swiss People's Party)
- 

SP / PS (Social Democratic Party)
- 

CVP / PDC (Christian Democratic People's Party)
- 

GPS / Verts (Green Party)

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Your decisions

We have enlisted five Swiss citizens (who are eligible to vote in Switzerland) to participate in a first part of this study. Each of the five citizens ranked the five political parties according to how much or how little he or she likes the respective party to receive the donation of Fr. 30. The donation will go to exactly one of the five parties. You cannot split up the donation.

Your task in this study is to decide to select one of the five political parties based on the preferences of the five citizens assigned to you.

Important

The five Swiss citizens assigned to you are not assigned to any other study participant. Hence, you are the only person who decides based on the preferences of these five citizens.

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Here's how you will make your decision.

In each round of this part, we will present you with three or four parties which are randomly selected from the five largest political parties in Switzerland. In each round, you will choose a party based on the preferences of the five citizens you are seeing in that round.

Important:
We ask you to choose a party based on the group as a whole, taking into account their preferences and disagreements, but ignoring your own political attitudes

That's why we anonymize the parties. We will not refer to the them by their names but by abstract symbols like  ,  , or  . Each symbol represents the donation going to a specific party. For instance, symbol  might indicate that the donation goes to the SVP / UDC, symbol  might indicate that the donation goes to the SP / PS, etc. (Don't bother to remember these symbols, they are just examples. They have absolutely no meaning, apart from serving as labels to help you visually distinguish between the parties).

Moreover, the way we recruited the citizens makes it impossible for you to tell which symbol stands for which party based on the citizens' preferences."

Here's how we did that.

We have recruited a total of 249 Swiss citizens, of which 5 may be assigned to you. We have asked each citizen to rate themselves as left, center, or right. We have collected the sample of 249 citizens such that we have exactly 83 who rate themselves as right, 83 who rate themselves as center, and 83 who rate themselves as left. The 5 citizens assigned to you are randomly drawn from these 249 citizens.

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How will I decide which party receives the donation?

Part B of this study has 12 rounds. One of these rounds pertains to the five Swiss citizens we have assigned to you. Your choice of a party for that round is real, and we will actually carry it out (if this part of the study is randomly chosen to be carried out). Your choice in that round will determine which political party will receive the donation of Fr. 30. However, we are not going to tell you which round involves your real choice.

You should therefore treat every one of these rounds as if it were real, because it could be!

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Comprehension Check

Before you start with your decisions, please check all the correct statements below (and only those).

If you have trouble finding the correct answers, please click the "previous" button below (with the arrow to the left) and study the instructions more carefully.

If you feel you have understood the instructions, but you still cannot continue, please raise your hand.

- ☐ Exactly one round is the "real" one: My decision in that round will determine which political party will receive the donation of Fr. 30 (if this part of the study is randomly chosen to be carried out)
- ☐ Each political party will receive the same amount of money, regardless of what I choose (if this part of the study is randomly chosen to be carried out).
- ☐ The five Swiss citizens are real. My choice of a political party based on their preferences will determine which political party will receive a donation (if this part of the study is randomly chosen to be carried out).
- ☐ If one of my decisions from this part is carried out, one of the five largest Swiss political parties will receive a donation of Fr. 30.
- ☐ The five Swiss citizens have already participated in a first part of the experiment in which they ranked the five biggest Swiss political parties according to how much / how little they would like them to receive the donation of Fr. 30.
- ☐ The five largest Swiss political parties that the five Swiss citizens have ranked are: SVP, FDP, SP, Gruene, CVP (now known as Die Mitte)
- ☐ Two of the rounds will determine which political party will receive the donation (if this part of the study is randomly chosen to be carried out).
- ☐ The five Swiss citizens are hypothetical, and no donation will actually be made to a political party.

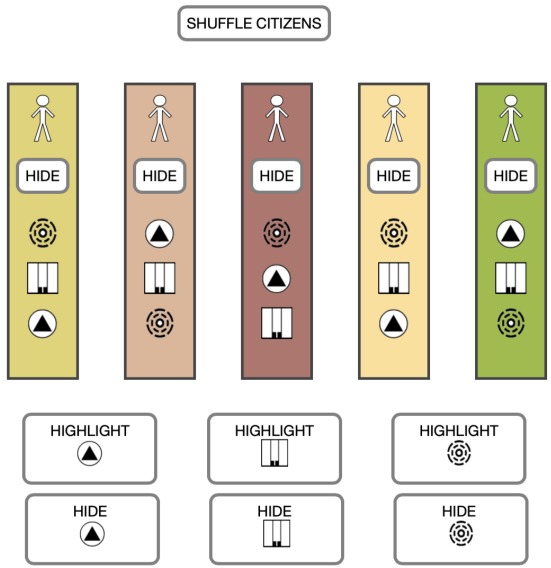
← →

Round 1 of 12 about the donation to a political party.

Five parties' logos here

Study the Swiss citizens' preferences, and choose a party based on the preferences of this group of citizens as a whole.

(For this round, the computer has randomly chosen 3 of the five political parties)



Choose the party to receive the donation of Fr. 30 based on the preferences of the five citizens.

Party	Party	Party
Choose this party	Choose this party	Choose this party
○	○	○
This party reflects the will of the citizens equally well as the chosen party	This party reflects the will of the citizens equally well as the chosen party	This party reflects the will of the citizens equally well as the chosen party
☐	☐	☐

Part C
of this study

This part of the study has 15 rounds. In addition, we will ask some questions about yourself.

Your own payment for this study will be determined by exactly one of the 15 rounds. At the end of this study, the computer will randomly select which round that will be.

Hence, you should make each decision as if it is the one that counts, because it might be!

There are different kinds of decisions in this part. We will explain them as you proceed through the rounds.

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Instructions for the next five rounds

In Part A of this study, you made several decisions concerning how the work tasks will be assigned to five workers recruited from Amazon Mechanical Turk.

In each of the next 5 rounds of part C, we ask you to predict *how much* these workers like or dislike each task assignment.

→

Measuring preference intensity

We have obtained precise measurements of how much each worker likes or dislikes each task. Your task is to predict these measurements.

Specifically, we have measured the least amount of money for which a worker would be willing to complete each task---his *reservation wage* for the task. For instance, if some worker would be willing to complete a task for $1 or more, but would not be willing to complete it for $0.99, then his reservation price is $1. That is the least amount of money for which that worker is willing to complete the task. It is a measure of how bad a worker finds a task – the more he dislikes the task, the more money he must be offered before he will agree to complete it.

As in Part A of this study, we will only tell you a worker's preferences over pre-selected task Assignments. But we will not tell you the specific tasks a worker will complete in those assignments.

Click here if you want to learn more about how we learned about the amounts for which workers are willing to complete each task.

Otherwise scroll to the bottom and click "next".

The screenshot on the right displays the text that is shown only if the subject clicks the button.

Each worker who participated in the first part of this study learned that he faced a five percent chance that his own decisions would determine his payment and the work he would have to complete in the second part of the study.

After ranking the tasks in the order of his preference, each worker completed a list like the following for each of the five tasks.

Complete [task]. In exchange, receive $0.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $1.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $2.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $3.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $4.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $5.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $6.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $7.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $8.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $9.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $10.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $11.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $12.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $13.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $14.	○ ○	Do NOT complete [task], do NOT receive any money.
Complete [task]. In exchange, receive $15.	○ ○	Do NOT complete [task], do NOT receive any money.

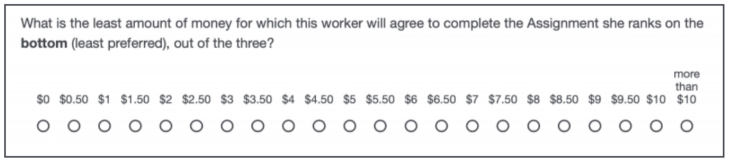
Each worker knew that the computer would randomly pick one of the lines of one of the lists. That line would determine the task the worker had to complete, and the payment he would receive for it.

Moreover, the worker knew that in addition to the payment on the line selected to be carried out, he would receive $4 if he followed through with his decision. If he failed to follow through, he would not only forfeit the payment he would have gotten according to the selected line, but he would also lose the $4 he would have received for following through with his decision.

Hence, it was in each worker's own best interest to choose, on each line, as he genuinely preferred.

Predicting preference intensity

In each round of this part, you will make predictions for questions such as the following:



Our payment system is designed such that it is in your own best interest to think about each decision carefully and answer according to your genuine beliefs.

Here's why. If your own study payment is determined by one of the rounds of this part, the following will happen. Many workers have already participated in the first part of this study, and we measured their true reservation wages for each of the assignments. For the round that ends up determining your payment, we will select one of the questions at random. For that question we will compare your answer to the reservation wages we have measured from the workers.

If your prediction coincides with our measurements, the variable part of your payment for this study will be Fr 30. For every dollar by which your prediction differs from the truth, you will lose Fr 3.

For instance, if the true answer is $4, but you select $6, then you are off by two dollars. In this case, the variable part of your payment for the study would be Fr 30 – (2 * Fr 3) = Fr 24.

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Memory refresher about mTurk workers

You are predicting the choices of mTurk workers who reside in the United States.

Many of the tasks will take workers **around half an hour** to complete, on average.

A reasonable rule of thumb is that one US-Dollar buys a bit less than one-and-a half times as much in the United States as one Swiss Franc buys in Zurich. At the same time, many workers in the United States also earn substantially less than the average resident of Zurich.

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Memory refresher about the tasks

To help you refresh your memory about the five tasks, we will reproduce each of them on the next five pages. Solve one example of each task, then click Next (except for Assigning Apprentices to Mentors, which you do not need to complete).

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Subjects proceed through an example of each of the five tasks again.

Memory refresher: Task Assignments

In each round of this part, we are asking you to predict the Workers' reservation wages over three pre-determined task assignments, rather than over each of the five individual tasks. Each of the three Assignments assigns a different task to the worker. You will not learn which tasks are included in the three Assignments for any of the Workers.

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Predicting reservation prices
(Round 1 of 5)

In this round, you predictions concern the reservation wages of a worker in a city called **Kalamazoo in the state of Michigan**.

What is the least amount of money for which this worker will agree to complete the Assignment he ranks on **top** (most preferred), out of the three?

$0	$0.50	$1	$1.50	$2	$2.50	$3	$3.50	$4	$4.50	$5	$5.50	$6	$6.50	$7	$7.50	$8	$8.50	$9	$9.50	$10	more than $10
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

What is the least amount of money for which this worker will agree to complete the Assignment he ranks in the **middle** (neither least nor most preferred), out of the three?

$0	$0.50	$1	$1.50	$2	$2.50	$3	$3.50	$4	$4.50	$5	$5.50	$6	$6.50	$7	$7.50	$8	$8.50	$9	$9.50	$10	more than $10
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

What is the least amount of money for which this worker will agree to complete the Assignment he ranks on the **bottom** (least preferred), out of the three?

$0	$0.50	$1	$1.50	$2	$2.50	$3	$3.50	$4	$4.50	$5	$5.50	$6	$6.50	$7	$7.50	$8	$8.50	$9	$9.50	$10	more than $10
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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Your own opinion of the tasks

What is the least amount of money for which **you** would be willing to complete each of the tasks yourself?

(The questions on this page will not affect your payment, and you will not have to complete the tasks. Please answer truthfully.)

Image Labeling. What is the least amount of money for which you would be willing to complete the Image Labeling Task (label **400 images**)?



Fr. 0	Fr. 2	Fr. 4	Fr. 6	Fr. 8	Fr. 10	Fr. 12	Fr. 14	Fr. 16	Fr. 18	Fr. 20	Fr. 22	Fr. 24	Fr. 26	Fr. 28	Fr. 30	More than Fr. 30
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Hate Speech Filtering. What is the least amount of money for which you would be willing to complete the Hate Speech Filtering Task (classify **400 tweets**)?



Fr. 0	Fr. 2	Fr. 4	Fr. 6	Fr. 8	Fr. 10	Fr. 12	Fr. 14	Fr. 16	Fr. 18	Fr. 20	Fr. 22	Fr. 24	Fr. 26	Fr. 28	Fr. 30	More than Fr. 30
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Movie Review Classification. What is the least amount of money for which you would be willing to complete the Movie Review Classification Task (classify **400 reviews**)?



Movie Review Classification Task (classify **400 reviews**)?



Fr. 0	Fr. 2	Fr. 4	Fr. 6	Fr. 8	Fr. 10	Fr. 12	Fr. 14	Fr. 16	Fr. 18	Fr. 20	Fr. 22	Fr. 24	Fr. 26	Fr. 28	Fr. 30	More than Fr. 30
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Assigning Apprentices to Mentors. What is the least amount of money for which you would be willing to complete the Assigning Apprentices to Mentors Task (find assignments for **5 companies**)?



Fr. 0	Fr. 2	Fr. 4	Fr. 6	Fr. 8	Fr. 10	Fr. 12	Fr. 14	Fr. 16	Fr. 18	Fr. 20	Fr. 22	Fr. 24	Fr. 26	Fr. 28	Fr. 30	More than Fr. 30
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Audio Transcription. What is the least amount of money for which you would be willing to complete the Audio Transcription Task (transcribe **400 words**)?



Fr. 0	Fr. 2	Fr. 4	Fr. 6	Fr. 8	Fr. 10	Fr. 12	Fr. 14	Fr. 16	Fr. 18	Fr. 20	Fr. 22	Fr. 24	Fr. 26	Fr. 28	Fr. 30	More than Fr. 30
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

← →

Instructions for the next six rounds

In Part B of this study, you made several decisions concerning a donation of CHF30 to one of the five biggest Swiss political parties, based on the preferences of Swiss citizens recruited for this study.

In the 5 rounds that follow these instructions, we ask you to predict *how much* these citizens like or dislike the donation going to each of the parties.

Recall the five biggest political parties:

- 

SP / PS (Social Democratic Party)
- 

GPS / Verts (Green Party)
- 

CVP / PDC (Christian Democratic People's Party)
- 

SVP / UDC (Swiss People's Party)
- 

FDP / PLR (FDP.The Liberals)

←

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Predicting preference intensity

We have obtained precise measurements of how much each of the citizens in our sample likes or dislikes the donation going to each of the parties.

Your task is to predict these measurements.

Here's how we have made the measurements.

We have elicited each citizen's willingness to pay to trigger or to prevent a donation of Fr. 30 for each of the parties. Each citizen received Fr. 20 for participation in the study. Citizens could use this money to trigger or prevent the donation of Fr. 30.

Specifically, for each party, each citizen made decisions such as this one:

[Party] will receive Fr. 30 and my payment will be reduced by CHF 2
OR
[Party] will receive nothing and my payment will not be reduced.

The amount Fr. 2 is just an example. That amount will vary across your decisions.

Somebody who wishes the party had more money and is willing to pay Fr. 2 to increase the party's budget by Fr. 30 will select the first option. Somebody who does not like the party or who does not want to give up Fr. 2 to increase the party's budget by Fr. 30 will select the second option.

Each citizen also made decisions like this one:

[Party] will receive nothing and my payment will be reduced by CHF 2
OR
[Party] will receive Fr. 30 and my payment will not be reduced.

The amount Fr. 2 is just an example. That amount will vary across your decisions.

Somebody who wishes the party had less money and is willing to pay Fr. 2 to prevent the donation of Fr. 30 to the party will select the first option. Somebody who likes the party or who does not want to give up Fr. 2 to prevent the donation Fr. 30 to the party will select the second option.

Hence, we know, for each citizen, how much money they are willing to pay to trigger or prevent the donation of Fr. 30

Your task

Your task is to predict, for five randomly chosen voters, how much they are willing to pay to trigger or prevent the donation of Fr. 30 to each of three of the five parties, selected at random. You will only know whether your prediction concerns the citizen's most-preferred, middle, or least-preferred party amongst the random selection of three parties, but you will not know which party the citizen has ranked in which place. Neither will you know which parties are in the randomly selected set of three parties. You will make your prediction like this:

How much is this citizen willing to pay to trigger or prevent a donation of Fr. 30 to the party she ranks in **the middle** (neither most nor least preferred), out of the three?

- ○ more than CHF 15 to trigger the donation
- ○ up to CHF 15 to trigger the donation
- ○ up to CHF 10 to trigger the donation
- ○ up to CHF 7.50 to trigger the donation
- ○ up to CHF 5 to trigger the donation
- ○ up to CHF 4 to trigger the donation
- ○ up to CHF 3 to trigger the donation
- ○ up to CHF 2 to trigger the donation
- ○ up to CHF 1 to trigger the donation
- ○ up to CHF 1 to prevent the donation
- ○ up to CHF 2 to prevent the donation
- ○ up to CHF 3 to prevent the donation
- ○ up to CHF 4 to prevent the donation
- ○ up to CHF 5 to prevent the donation
- ○ up to CHF 7.50 to prevent the donation
- ○ up to CHF 10 to prevent the donation
- ○ up to CHF 15 to prevent the donation
- ○ more than CHF 15 to prevent the donation

Our payment system is designed such that it is in your own best interest to think about each decision carefully and answer according to your genuine beliefs.

Here's why. If your own study payment is determined by one of the rounds of this part, the following will happen. Many citizens have already participated in the first part of this study, and we measured their willingness to pay to trigger or prevent the donation to each of the five parties. For the round that ends up determining your payment, we will select one of the questions at random. For that question, we will compare your answer to the measurement we have obtained from the citizen whose willingness to pay you are predicting.

If your prediction coincides with our measurements, the variable part of your payment for this study will be Fr 30. For every Franc by which your prediction differs from the truth, you will lose Fr 1.

For instance, if the true answer is that the citizen is willing to pay Fr. 4 to *trigger* the donation, but you think the citizen is willing to pay Fr. 10 to *prevent* the donation, then you are off by Fr. 14. In this case, the variable part of your payment for the study would be Fr 30 – (14 * Fr 1) = Fr 16.

Predicting Swiss citizens' preferences
(Round 1 of 5)

In this round, you predictions concern the preferences of a Swiss citizen whose first name is

Seraina.



We have randomly selected three of the five parties above.

How much is this citizen willing to pay to trigger or prevent a donation of Fr. 30 to the party she ranks **on top** (most preferred), out of the three?

- ○ more than CHF 15 to trigger the donation
- ○ up to CHF 15 to trigger the donation
- ○ up to CHF 13 to trigger the donation
- ○ up to CHF 11 to trigger the donation
- ○ up to CHF 9 to trigger the donation
- ○ up to CHF 7 to trigger the donation
- ○ up to CHF 5 to trigger the donation
- ○ up to CHF 3 to trigger the donation
- ○ up to CHF 1 to trigger the donation
- ○ up to CHF 1 to prevent the donation
- ○ up to CHF 3 to prevent the donation
- ○ up to CHF 5 to prevent the donation
- ○ up to CHF 7 to prevent the donation
- ○ up to CHF 9 to prevent the donation
- ○ up to CHF 11 to prevent the donation
- ○ up to CHF 13 to prevent the donation
- ○ up to CHF 15 to prevent the donation
- ○ more than CHF 15 to prevent the donation

On the same page, the subject also answers the following two questions:

- *How much is this citizen willing to pay to trigger or prevent a donation of Fr. 30 to the party she ranks in the middle (neither most nor least preferred), out of the three?*
- *How much is this citizen willing to pay to trigger or prevent a donation of Fr. 30 to the party she ranks on the bottom (least preferred), out of the three?*

The subject answers the same three questions for another (real) four Swiss citizens, all with common Swiss first names. A random half of subjects see the above three questions in reverse order, i.e. starting with the citizen's bottom preference.

Round 12 of 15 in part C

Your own opinion of the parties

What is the largest amount of money that **you** would be willing to pay to trigger or prevent a donation to each of the five political parties?

*(The questions on this page are hypothetical. They will **not** affect your payment, and will not trigger or prevent a donation. Please answer truthfully.)*

Are you eligible to vote in Switzerland?

- ○ Yes

How much are you willing to pay to trigger or prevent a donation of Fr. 30 to the FDP / PLR (FDP.The Liberals)



I would be willing to pay ...

- ○ more than CHF 15 to trigger the donation
- ○ up to CHF 15 to trigger the donation
- ○ up to CHF 10 to trigger the donation
- ○ up to CHF 7.50 to trigger the donation
- ○ up to CHF 5 to trigger the donation
- ○ up to CHF 4 to trigger the donation
- ○ up to CHF 3 to trigger the donation
- ○ up to CHF 2 to trigger the donation
- ○ up to CHF 1 to trigger the donation
- ○ up to CHF 1 to prevent the donation
- ○ up to CHF 2 to prevent the donation
- ○ up to CHF 3 to prevent the donation
- ○ up to CHF 4 to prevent the donation
- ○ up to CHF 5 to prevent the donation
- ○ up to CHF 7.50 to prevent the donation
- ○ up to CHF 10 to prevent the donation
- ○ up to CHF 15 to prevent the donation
- ○ more than CHF 15 to prevent the donation

On the same page, the subject answers the same question for each of the remaining four parties (parties presented in random order).

In each of the next 2 rounds, you will see a list of lotteries like this one:

On each line, chose the option you genuinely prefer.

Receive 18 Fr. with 0% chance or 12 Fr. with 100% chance.	○ ○	Receive 30 Fr. with 0% chance or 3 Fr. with 100% chance.
Receive 18 Fr. with 10% chance or 12 Fr. with 90% chance.	○ ○	Receive 30 Fr. with 10% chance or 3 Fr. with 90% chance.
Receive 18 Fr. with 20% chance or 12 Fr. with 80% chance.	○ ○	Receive 30 Fr. with 20% chance or 3 Fr. with 80% chance.
Receive 18 Fr. with 30% chance or 12 Fr. with 70% chance.	○ ○	Receive 30 Fr. with 30% chance or 3 Fr. with 70% chance.
Receive 18 Fr. with 40% chance or 12 Fr. with 60% chance.	○ ○	Receive 30 Fr. with 40% chance or 3 Fr. with 60% chance.
Receive 18 Fr. with 50% chance or 12 Fr. with 50% chance.	○ ○	Receive 30 Fr. with 50% chance or 3 Fr. with 50% chance.
Receive 18 Fr. with 60% chance or 12 Fr. with 40% chance.	○ ○	Receive 30 Fr. with 60% chance or 3 Fr. with 40% chance.
Receive 18 Fr. with 70% chance or 12 Fr. with 30% chance.	○ ○	Receive 30 Fr. with 70% chance or 3 Fr. with 30% chance.
Receive 18 Fr. with 80% chance or 12 Fr. with 20% chance.	○ ○	Receive 30 Fr. with 80% chance or 3 Fr. with 20% chance.
Receive 18 Fr. with 90% chance or 12 Fr. with 10% chance.	○ ○	Receive 30 Fr. with 90% chance or 3 Fr. with 10% chance.
Receive 18 Fr. with 100% chance or 12 Fr. with 0% chance.	○ ○	Receive 30 Fr. with 100% chance or 3 Fr. with 0% chance.

If one of these rounds determines the payment you will receive for this study, here's what will happen. The computer will randomly draw one of lines from the list in that round. The computer will then play out the lottery you selected on that line. That lottery will determine the variable part of the payment you receive for this study.

Hence, you should make each decision on each line as if it is the one that counts, because it might be!

→

Choice between lotteries.

On each line, chose the option you genuinely prefer.

Receive 20 Fr with 0% chance or 13 Fr with 100% chance.	○ ○	Receive 34 Fr with 0% chance or 5 Fr with 100% chance.
Receive 20 Fr with 10% chance or 13 Fr with 90% chance.	○ ○	Receive 34 Fr with 10% chance or 5 Fr with 90% chance.
Receive 20 Fr with 20% chance or 13 Fr with 80% chance.	○ ○	Receive 34 Fr with 20% chance or 5 Fr with 80% chance.
Receive 20 Fr with 30% chance or 13 Fr with 70% chance.	○ ○	Receive 34 Fr with 30% chance or 5 Fr with 70% chance.
Receive 20 Fr with 40% chance or 13 Fr with 60% chance.	○ ○	Receive 34 Fr with 40% chance or 5 Fr with 60% chance.
Receive 20 Fr with 50% chance or 13 Fr with 50% chance.	○ ○	Receive 34 Fr with 50% chance or 5 Fr with 50% chance.
Receive 20 Fr with 60% chance or 13 Fr with 40% chance.	○ ○	Receive 34 Fr with 60% chance or 5 Fr with 40% chance.
Receive 20 Fr with 70% chance or 13 Fr with 30% chance.	○ ○	Receive 34 Fr with 70% chance or 5 Fr with 30% chance.
Receive 20 Fr with 80% chance or 13 Fr with 20% chance.	○ ○	Receive 34 Fr with 80% chance or 5 Fr with 20% chance.
Receive 20 Fr with 90% chance or 13 Fr with 10% chance.	○ ○	Receive 34 Fr with 90% chance or 5 Fr with 10% chance.
Receive 20 Fr with 100% chance or 13 Fr with 0% chance.	○ ○	Receive 34 Fr with 100% chance or 5 Fr with 0% chance.

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Choice between lotteries.

On each line, chose the option you genuinely prefer.

Receive 23 Fr with 0% chance or 15 Fr with 100% chance.	○ ○	Receive 38 Fr with 0% chance or 3 Fr with 100% chance.
Receive 23 Fr with 10% chance or 15 Fr with 90% chance.	○ ○	Receive 38 Fr with 10% chance or 3 Fr with 90% chance.
Receive 23 Fr with 20% chance or 15 Fr with 80% chance.	○ ○	Receive 38 Fr with 20% chance or 3 Fr with 80% chance.
Receive 23 Fr with 30% chance or 15 Fr with 70% chance.	○ ○	Receive 38 Fr with 30% chance or 3 Fr with 70% chance.
Receive 23 Fr with 40% chance or 15 Fr with 60% chance.	○ ○	Receive 38 Fr with 40% chance or 3 Fr with 60% chance.
Receive 23 Fr with 50% chance or 15 Fr with 50% chance.	○ ○	Receive 38 Fr with 50% chance or 3 Fr with 50% chance.
Receive 23 Fr with 60% chance or 15 Fr with 40% chance.	○ ○	Receive 38 Fr with 60% chance or 3 Fr with 40% chance.
Receive 23 Fr with 70% chance or 15 Fr with 30% chance.	○ ○	Receive 38 Fr with 70% chance or 3 Fr with 30% chance.
Receive 23 Fr with 80% chance or 15 Fr with 20% chance.	○ ○	Receive 38 Fr with 80% chance or 3 Fr with 20% chance.
Receive 23 Fr with 90% chance or 15 Fr with 10% chance.	○ ○	Receive 38 Fr with 90% chance or 3 Fr with 10% chance.
Receive 23 Fr with 100% chance or 15 Fr with 0% chance.	○ ○	Receive 38 Fr with 100% chance or 3 Fr with 0% chance.

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Instructions for the next two rounds

In each of the next two rounds, you decide whether the five workers will receive additional payments (independently of the task assignment you have decided about in Part A).

Your task is to select the options you genuinely prefer on each line of a list such as the one below.

On each line, you decide whether to increase each of the five workers' payments by some amount at a cost to yourself.

Increase each of the five workers' payoffs by $2. Leave my own study payment unchanged.	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **CHF 1**	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **CHF 2**	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **CHF 3**	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **CHF 4**	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **CHF 6**	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **CHF 8**	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **CHF 10**	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **CHF 12**	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **CHF 14**	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **CHF 16**	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **CHF 18**	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **CHF 20**	○ ○	Do not increase the group members' payoffs. Leave my own study payment unchanged.

If one of these two parts is randomly selected to determine your study payment, the variable part of your payment will be Fr. 30 minus whatever you choose to give up to effect an increase in the Workers' payments. (In addition, you will receive the fixed payment of Fr. 30.)

Specifically, at the end of the study, the computer will randomly select exactly one of these lines. Whatever you have selected on that line will be carried out. If, on the chosen line, you select the option on the right, you will receive CHF 30, and the five MTurk workers assigned to you will not receive any additional payment other than what they expect to receive for completing the tasks assigned to them. If, on the chosen line, you select the option on the left, we will pay each of the five MTurk workers assigned to you the specified additional amount of money, and we will discount the amount mentioned on the selected line from the Fr. 30 you would otherwise have received.

Hence, you should make each decision on each line as if it is the one that counts, because it might be!

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On each line, select the option you genuinely prefer

(At the current exchange rate, USD 1 = Fr. 0.90.)

Increase each of the five workers' payoffs by $2. Leave my own study payment unchanged.	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **Fr. 1**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **Fr. 2**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **Fr. 3**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **Fr. 4**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **Fr. 6**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **Fr. 8**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **Fr. 10**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **Fr. 12**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **Fr. 14**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **Fr. 16**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **Fr. 18**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by $2. Decrease my own study payment by **Fr. 20**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.

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On each line, select the option you genuinely prefer

(At the current exchange rate, USD 1 = Fr. 0.90.)

Increase each of the five workers' payoffs by **Fr. 0.20** (exchanged to USD). Decrease my own study payment by **Fr. 1**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by **Fr. 0.40** (exchanged to USD). Decrease my own study payment by **Fr. 2**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by **Fr. 0.60** (exchanged to USD). Decrease my own study payment by **Fr. 3**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by **Fr. 0.80** (exchanged to USD). Decrease my own study payment by **Fr. 4**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by **Fr. 1** (exchanged to USD). Decrease my own study payment by **Fr. 5**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by **Fr. 1.20** (exchanged to USD). Decrease my own study payment by **Fr. 6**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by **Fr. 1.40** (exchanged to USD). Decrease my own study payment by **Fr. 7**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by **Fr. 1.60** (exchanged to USD). Decrease my own study payment by **Fr. 8**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by **Fr. 1.80** (exchanged to USD). Decrease my own study payment by **Fr. 9**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.
Increase each of the five workers' payoffs by **Fr. 2** (exchanged to USD). Decrease my own study payment by **Fr. 10**	○ ○	Do not increase the five workers' payoffs. Leave my own study payment unchanged.

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Finally, we would like to ask you some questions about yourself.

Please answer truthfully.

What is your gender?

- ○ Male
- ○ Female
- ○ Other (e.g. genderqueer)

What is your age?

At which institution / faculty is your main field of study?

- ○ UZH Theological faculty
- ○ UZH Law
- ○ UZH Business, economics, and informatics
- ○ UZH Medicine
- ○ UZH Vetsuisse
- ○ UZH Philosophical faculty
- ○ UZH Mathematics and sciences
- ○ ETH Architecture and civil engineering
- ○ ETH Engineering sciences
- ○ ETH Natural sciences and mathematics
- ○ ETH Systems-oriented natural sciences
- ○ ETH Management and social sciences
- ○ ZHAW Linguistics, psychology, or social work
- ○ ZHAW Architecture, Design and Civil Engineering
- ○ ZHAW Engineering
- ○ ZHAW Health Professions
- ○ ZHAW Life Sciences and Facility Management
- ○ ZHAW Management and Law
- ○ ZHDK
- ○ Other

What degree level are you currently working towards

- ◯ Bachelor
- ◯ Master
- ◯ Doctorate
- ◯ Postdoc
- ◯ I am not currently working towards a degree

What was your final grade in your Maturität in Mathematics?

- ◯ 6
- ◯ 5.5
- ◯ 5
- ◯ 4.5
- ◯ 4
- ◯ 3.5
- ◯ 3
- ◯ 2.5
- ◯ 2
- ◯ 1.5
- ◯ 1
- ◯ I do not have a Swiss high school degree (Maturität)

What was your final grade in your Maturität in your main language (German / French / Italian)?

- ◯ 6
- ◯ 5.5
- ◯ 5
- ◯ 4.5
- ◯ 4
- ◯ 3.5
- ◯ 3
- ◯ 2.5
- ◯ 2
- ◯ 1.5
- ◯ 1
- ◯ I do not have a Swiss high school degree (Maturität)

What is your native language?

- ◯ German
- ◯ French
- ◯ Italian
- ◯ Rumansch
- ◯ English
- ◯ Other. Please indicate.

In which canton did you obtain your Maturität?

- ◯ AG
- ◯ AI
- ◯ AR
- ◯ BE
- ◯ BL
- ◯ BS
- ◯ FR
- ◯ GE
- ◯ GL
- ◯ GR
- ◯ JU
- ◯ LU
- ◯ NE
- ◯ NW
- ◯ OW
- ◯ SG
- ◯ SH
- ◯ SO
- ◯ SZ
- ◯ TG
- ◯ TI
- ◯ UR
- ◯ VD
- ◯ VS
- ◯ ZG
- ◯ ZH
- ◯ I do not have a Swiss high school degree (Maturität)

Do you currently live with your parents?

- ◯ Yes
- ◯ No

How many siblings do you have?

- ◯ None
- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ more than 4

How much money do you spend per month, on average? (Including food, rent, clothing, entertainment. If your spending has changed during the Covid19-crisis, please indicate your spending from *before* the crisis.)

- ◯ CHF500 or less
- ◯ Between CHF500 and CHF1000
- ◯ Between CHF1000 and CHF1500
- ◯ Between CHF1500 and CHF2000
- ◯ Between CHF2000 and CHF2500
- ◯ Between CHF2500 and CHF3000
- ◯ Between CHF3000 and CHF4000
- ◯ Between CHF4000 and CHF5000
- ◯ Between CHF 5000 and CHF7500
- ◯ Between CHF7500 and CHF10000
- ◯ CHF10000 or more

← →

How religious are you?

- ◯ I am deeply religious
- ◯ I am somewhat religious
- ◯ I am not very religious
- ◯ I am not religious at all

If you have one, what is your religion?

- ◯ Christian (protestant)
- ◯ Christian (catholic)
- ◯ Muslim
- ◯ Judaist
- ◯ Hindu, Buddist, or Sikh
- ◯ Agnostic or atheist

Where do you stand politically?

- ◯ Far right
- ◯ Right
- ◯ Right of center
- ◯ Center
- ◯ Left of center
- ◯ Left
- ◯ Far left

If you are Swiss, which political party have you voted for in the last election of the Nationalrat / Conseil national / Consiglio nazionale / Cussegl naziunal? (If you have not voted but you are eligible to vote, please indicate the party you would vote for in the next election.)

- ◯ Lega dei Ticinesi
- ◯ EDU / UDF
- ◯ Grüne / Verts
- ◯ solidaritéS
- ◯ SP / PS
- ◯ GLP / vertliberaux
- ◯ BDP / PBD
- ◯ FDP / PLR
- ◯ SVP / UDC
- ◯ PdA / PST
- ◯ CVP / PDC
- ◯ Other
- ◯ I am not eligible to vote in Switzerland
- ◯ EVP / PEV

← →

If you're running a race and you pass the person in second place, what place are you in?

- ◯ First
- ◯ Second
- ◯ Third

A farmer had 15 sheep and all but 8 died. How many are left?

Emily's father has three daughters. The first two are named April and May. What is the third daughter's name?

How many cubic feet of dirt are there in a hole that is 3' deep, 3' wide, and 3' long?

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The following table illustrates one of the most famous paradoxes of voting theory. If you know the name of the paradox, please enter it below:

Voter	First preference	Second preference	Third preference
Voter 1	A	B	C
Voter 2	B	C	A
Voter 3	C	A	B

The following is a description of a well-known voting rule. If you know its name, please enter it below:

The winner of an election is determined by giving each candidate, for each ballot, a number of points corresponding to the number of candidates ranked lower. Once all votes have been counted, the option or candidate with the most points is the winner.

The following is an informal statement of one of the foundational theorems in the theory of social choice. If you know it's name, please enter it below:

If there are at least 3 alternatives, there is no social choice function that simultaneously satisfies (i) unrestricted domain, (ii) unanimity, (iii) independence of irrelevant alternatives, and (iv) non-dictatorship.

Have you ever taken a class that covered the theory of social choice?

- ◯ Yes
- ◯ No

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This is the end of this study.

Your payment for participating in this study consists of the fixed payment of **CHF 30** plus the variable payment of **CHF 34** for a total of

CHF 64.

The variable part of your payment has been determined by one of your choices between lotteries. From the choices you have made, one line was selected at random, and the corresponding lottery was played out, exactly as described in the instructions.

Please click the NEXT button to be redirected to the payment form.

E.2 Cardinal outcomes experiment

WELCOME

This is a research study run by the Department of Economics at the University of Zurich.

This study will take about **45-60 minutes** to complete, though some participants might take longer. The average participant will earn Fr. 30 for completing this study. This consists of a base payment of Fr. 20 that you will receive with certainty, and a variable payment of up to Fr. 30 that depends on your decisions and on luck.

You will receive payment in cash at the end of this study.

This study has been approved by the ethics review board of the department of economics in protocol OEC IRB # 2020-035.

By clicking the "continue" button below, you consent to participating in this decision making study.

Instructions

Please read the instructions carefully.

There will be two comprehension checks. You will be able to continue with the study only if you correctly answer all questions in both comprehension checks.

This study has two parts.

In **part A**, you will make decisions that may determine the payment that each of a group of three other study participants will get.

In **part B**, you will make decisions that determine your own payoff.

Consequences of your decisions in part A

There is a 1 in 10 chance that one of your choices in Part A will determine the payments of three other study participants that are assigned to you.

If you are matched to a group of three other participants, you are the only person who is matched to them.

The three other participants are US-individuals who take part in this study online.

Consequences of your decisions in part B

Your compensation for completing this study consists of a fixed payment of Fr. 20 and a variable payment ranging between Fr. 0 and Fr. 30. The average participant such as yourself can expect a payment of around Fr. 30. The variable payment will be determined by part B of the study. It will depend on your decisions and on luck.

On behalf of the Economics Department at UZH, we guarantee that we carry out all aspects of the study exactly as we describe to you. The rules governing our research do not permit us to deceive our participants in any way.

Part A

Your decisions

We have enlisted three other participants to this study. Let's call them A, B, and C. Each of them will receive a fixed amount of money in exchange for their participation. Your task is to decide who receives how much.

You will make that decision by choosing between different *distributions* of payments. For instance, one distribution might specify that other participant A will receive $5, other participant B will receive $10, and other participant C will receive $8. Another might specify that A will receive $9, B will receive $4 and C will receive $11. We refer to each distribution by a symbol like , , or . Each symbol represents a specific distribution. For instance, symbol might indicate that A receives $5, B receives $10, and so forth. (Don't bother to remember these numbers or symbols, they are just examples. The symbols have absolutely no meaning, apart from serving as labels to help you visually distinguish between the distributions).

Rounds in part A

Part A of this study has 20 rounds. In each round, we will present you with three new payment distributions. Your task in each round is to select one of the three distributions of money.

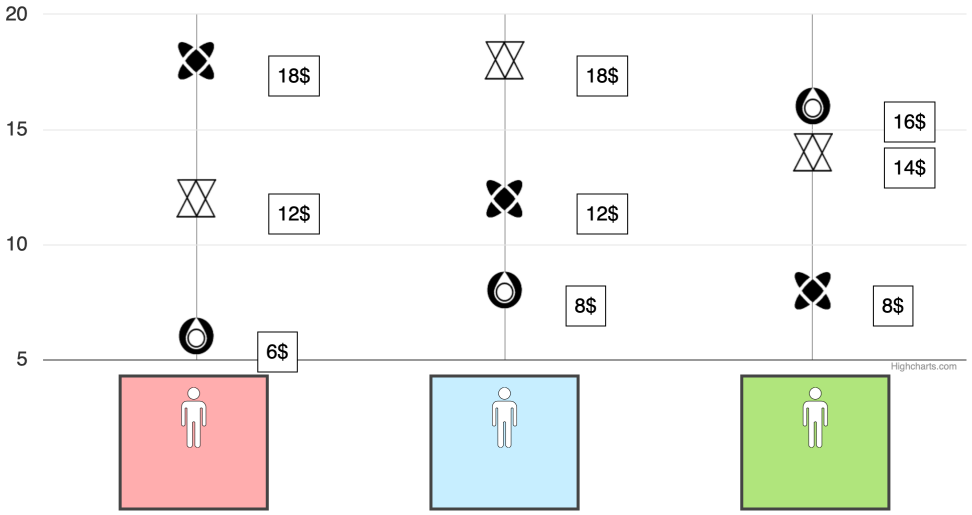
One of these rounds pertains to the three participants we have assigned to you. Your choice for that round is real, and we will actually carry it out. It determines the payment each participant receives. However, we are not going to tell you which round involves your real choice.

You should therefore treat every one of these rounds as if it were real, because it could be!

Visual presentation of payment distributions

To help you decide which distribution of payments to select, we will present them as in the following picture.

At the bottom of the picture, you will see three stick figures ( ). Each stick figure stands for a participant. Information about the payments that participant might receive appears above their stick figure. Each payment appears next to a symbol, and each symbol stands for a distribution of payments among the three participants.



In this picture, each column (with a stick figure) represents one of the three other participants assigned to you. Each bar contains all three symbols , , and , that represent the distributions from which you may choose. In each bar the vertical location of a symbol tells you how much money the participant gets if you choose that distribution.

Consider the distribution represented by the symbol , for instance. If you choose it, the participant on the left (red) will receive $18, the participant in the middle (blue) will receive $12, and the participant on the right (green) will receive $8.

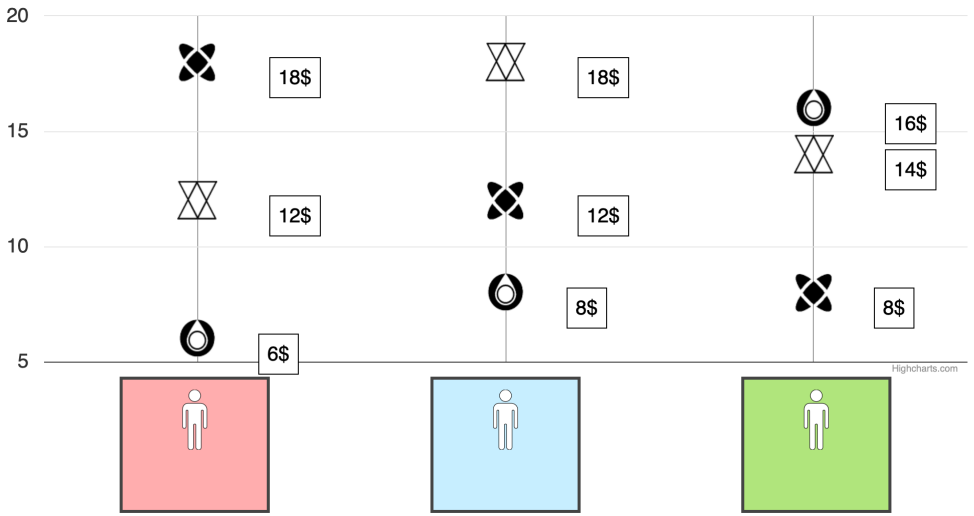
If you choose distribution instead, the participant on the left will receive $6, the one in the middle will get $8, and the one on the right will get $16.

Comprehension Check 1

To make sure you correctly understand how information about the three participants' payments is being displayed to you, please answer the questions below. (This page shows *different* payment distributions than those displayed on the previous page.)

If you have trouble finding the correct answers, please click the "previous" button below (with the arrow to the left) and study the instructions more carefully.

If you feel you have understood the instructions, but you still cannot continue, please raise your hand.



For how many participants is distribution ✡ the one that gives them the highest payment (compared to what they would get if you chose a different distribution)?

0 ○ 1 ○ 2 ○ 3 ○

For how many participants is distribution ✡ the one that gives them the lowest payment (compared to what they would get if you chose a different distribution)?

0 ○ 1 ○ 2 ○ 3 ○

For how many participants is distribution ✡ that gives them neither their lowest nor their highest payment?

0 ○ 1 ○ 2 ○ 3 ○

Which distribution gives the participant on the very left the highest payment?

Distribution ✱ ○ Distribution ◉ ○ Distribution ✡ ○

Which distribution gives the participant on the very left the lowest payment?

Distribution ✱ ○ Distribution ◉ ○ Distribution ✡ ○

Which distribution gives the participant on the very left neither the highest nor the lowest payment?

Distribution ✱ ○ Distribution ◉ ○ Distribution ✡ ○

Does distribution  give the participant on the very right the highest, lowest, or a middle payment, compared to other distributions?

Highest	Middle	Lowest
○	○	○

Does distribution  give the participant on the very right the highest, lowest, or a middle payment, compared to other distributions?

Highest	Middle	Lowest
○	○	○

Does distribution  give the participant on the very right the highest, lowest, or a middle payment, compared to other distributions?

Highest	Middle	Lowest
○	○	○

Tools

To help you study the payoff distributions, there are several options for rearranging, highlighting, and hiding information in the picture if you find it helpful. You don't have to use these interactive features, but we want you to know they're available.

We'll now walk you through each of the features. Please click "next" (the button with the arrow to the lower right) to start.

Here, subjects proceed through an interactive instruction that explains each screen element and asks them to manipulate it. Display version 1 proceeds through the following steps:

- You can drag and drop each participant to a different position. Please give this a try by dragging a participant to a different location.
- Underneath each stick figure representing the participant, you will see a button labeled "Hide". If you click it, that participant's payouts will be hidden. If you click it a second time, that participant's payouts will be displayed again. Please hide, then show, one of the participants
- At the top of the figure, you see two rows of buttons. Buttons in the first row allow you to highlight a distribution. If you click the button a second time, the highlighting will be switched off. Please give this a try.
- Buttons in the second row allow you to hide a distribution. If you click such a button a second time, the distribution will be displayed again Please hide, then show one of the distributions.
- Underneath the symbols representing the distributions you see a button labelled "shuffle". That button will shuffle the order of the participants Please click it.
- Once you have decided which distribution you would like to be carried out, select it at the bottom of the screen. Please click on one of the distributions
- In case you think that multiple distributions are equally good, please let us know. You do so by clicking the buttons underneath the choice buttons.
- Great, that's all the features. Please click "next" to continue.

What if several distributions of payoffs are equally good?

In some rounds, there might be multiple payoff distributions that you consider equally good. In other rounds, there might be one single distribution that you think is best.

In all rounds, you will have to choose one single distribution to be carried out.

However, as you saw on the previous screen, we will also ask you to indicate if there are other distributions you believe are equally good as the one you have chosen.

Please answer those questions truthfully.

(next page)

How will my own payment be determined?

We have been discussing Part A of the study. Your choices in Part A will affect other people, but they will not affect your own payment. Your payment will be determined by one of the choices you will make in Part B of the study. Once Part B begins, we will explain how.

Please pay attention throughout and make all decisions carefully.

Your choices will have real consequences for a group of three other participants! The other participants are real people.

(next page)

Comprehension Check

Before you start with your decisions, please check all the correct statements below (and only those).

If you have trouble finding the correct answers, please click the "previous" button below (with the arrow to the left) and study the instructions more carefully.

If you feel you have understood the instructions, but you still cannot continue, please raise your hand.

- ☐ Exactly one round is the "real" one: My decision in that round will determine the payments of the three other participants (if I am matched to a group of such participants).
- ☐ With a 1 in 10 chance I am matched to three other participants. These participants are real, and they participate online. If I am matched to them, one of my choices will determine their payments.
- ☐ Each of the three other participants will receive the same amount of money, regardless of what I choose.
- ☐ Two of the rounds will determine the payments of the three other participants
- ☐ The three other participants are definitely hypothetical, and no payments will be made to them

(next page)

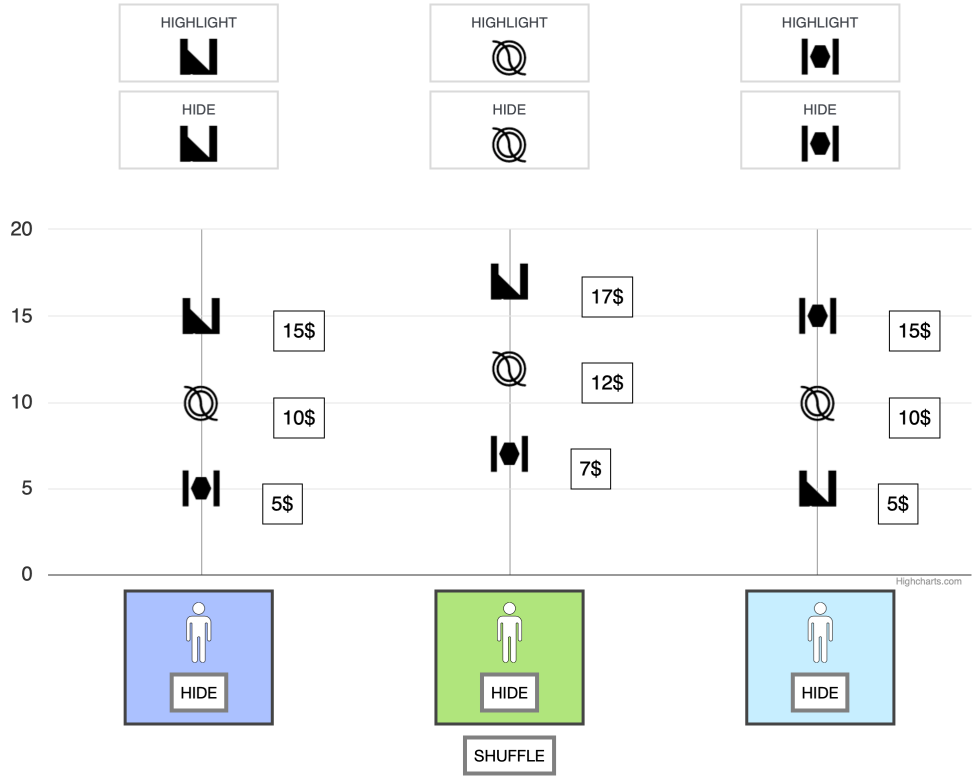
Your decisions begin now.

Please make each decision as if it is the one that counts, because it might be!

→

Round 1 of 20

Study the payoff distributions and choose one of them.



Choose the distribution to be carried out for the group of three other participants.

Distribution	Distribution	Distribution
Choose this option	Choose this option	Choose this option
This option is equally good as the chosen option	This option is equally good as the chosen option	This option is equally good as the chosen option

(The experiment then proceeds through all the rounds, elicits subjects' risk preferences and demographic information, and concludes)

E.3 General population experiment

Technical Check

To test whether your computer can display the study correctly, please copy the following number into the field below

19

→

WELCOME

This is a research study run by the Departments of Economics at Stanford University and at the University of Zurich.

This study will take **20-30 minutes** to complete.

By clicking the "continue" button below, you consent to participating in this decision making study.

DESCRIPTION: You are invited to participate in a research study about how people make choices for others. We will show you some information about other peoples' prefererences, and then we will ask you to make decisions for them. (Principal Investigators: Sandro Ambuehl, University of Zurich and B. Douglas Bernheim, Stanford University)

SENSITIVE QUESTIONS: We will ask you about your political attitudes.

TIME INVOLVEMENT: The survey will take 20-30 minutes

RISKS AND BENEFITS: There are no risks associated with this study. We cannot and do not guarantee or promise that you will receive any benefits from this study.

DATA USAGE: Your data is anonymous. The data will be analyzed for scientific purposes and will be made available to other researchers through platforms such as the Harvard Dataverse.

COMPENSATION: You will receive the standard panel compensation for completing this survey.

PARTICIPANT'S RIGHTS: If you have read this form and have decided to participate in this project, please understand your participation is voluntary and you have the right to withdraw your consent or discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. The alternative is not to participate. You have the right to refuse to answer particular questions. The results of this research study may be presented at scientific or professional meetings or published in scientific journals. Your individual privacy will be maintained in all published and written data resulting from the study.

CONTACT INFORMATION:

Independent Contact: If you are not satisfied with how this study is being conducted, or if you have any concerns, complaints, or general questions about the research or your rights as a participant, please contact the Stanford Institutional Review Board (IRB) to speak to someone independent of the research team at (650)-723-2480 or toll free at 1-866-680-2906, or email at IRB2-Manager@lists.stanford.edu. You can also write to the Stanford IRB, Stanford University, 1705 El Camino Real, Palo Alto, CA 94306.

I AGREE to participate ○

I do NOT agree to participate ○

What is your age

- ◯ 18-25
- ◯ 26-35
- ◯ 36-45
- ◯ 46-55
- ◯ 56-65
- ◯ 66-75
- ◯ 76-85
- ◯ 85 or older

What is your gender

- ◯ Female
- ◯ Male
- ◯ Other (e.g. non-binary)

What is your primary ethnicity?

- ◯ Black or African American
- ◯ Native Hawaiian or Pacific Islander
- ◯ White (non-hispanic)
- ◯ American Indian or Alaska Native
- ◯ White (hispanic)
- ◯ Asian
- ◯ Other

In which state do you currently reside?

Are you a US citizen?

- ◯ Yes
- ◯ No

Where do you stand politically?

Clearly left	Slightly left	Center	Slightly right	Clearly right
◯	◯	◯	◯	◯

Which of the following political parties is closest to your own views and values?

- ◯ Democratic Party
- ◯ Republican Party
- ◯ Constitution Party
- ◯ Libertarian Party
- ◯ American Solidarity Party
- ◯ Green Party

What is the highest level of education you have completed?

- ◯ Some high school
- ◯ High school diploma or GED
- ◯ Some college, but no degree
- ◯ Associates degree
- ◯ Bachelor's degree
- ◯ Master's degree
- ◯ PhD or professional doctorate (such as MD, JD, etc.)

What is your marital status?

- ◯ Married
- ◯ Widowed
- ◯ Divorced
- ◯ Separated
- ◯ Never married

What is your annual income?

- ◯ Less than $10,000
- ◯ $10,000 - $19,999
- ◯ $20,000 - $29,999
- ◯ $30,000 - $39,999
- ◯ $40,000 - $49,999
- ◯ $50,000 - $59,999
- ◯ $60,000 - $69,999
- ◯ $70,000 - $79,999
- ◯ $80,000 - $89,999
- ◯ $90,000 - $99,999
- ◯ $100,000 - $149,999
- ◯ More than $150,000

What is your employment status?

- ◯ Employed full time
- ◯ Employed part time
- ◯ Unemployed looking for work
- ◯ Unemployed not looking for work
- ◯ Retired
- ◯ Student
- ◯ Disabled

Instructions

Please read the instructions carefully.

In this study, you will make decisions about a $20 donation to one of the following charitable organizations:

- Unicef logo here **UN International Children's Emergency Fund** is an agency that provides aid to children worldwide. It works to save children's lives, to defend their rights, and to help them fulfil their potential, from early childhood through adolescence.
- IFAW logo here **The International Fund for Animal Welfare** is one of the largest animal welfare and conservation charities in the world. The organization works to rescue individual animals, safeguard populations, preserve habitat, and advocate for greater protections.
- Oxfam logo here **Oxfam** is an international organization (NGO) that works to alleviate global poverty. It aims to help people build better lives for themselves, and for others
- Doctors Without Borders logo here **Doctors Without Borders** is an international organization (NGO) that provides lifesaving medical humanitarian care in conflict zones and in countries affected by endemic diseases.

→

Your decisions

We have enlisted five US citizens to participate in a first part of this study. Each of the five citizens ranked the charitable organizations according to how much or how little he or she would like that charity to receive the donation of $20.

Your task in this study is to select one of the charitable organizations based on the preferences of the five citizens assigned to you. The donation will go to exactly one of the charitable organizations. You cannot split up the donation.

The five US citizens assigned to you are not assigned to any other study participant. Hence, you are the only person who decides based on the preferences of these five citizens.

There is a one in ten chance that your choices will determine which charitable organization will receive the money.

Hence, please make every decision as if will be carried out -- it might be!

On behalf of the Economics Departments at Stanford University and at the University of Zurich, we guarantee that we carry out all aspects of the study exactly as we describe to you. The rules governing our research do not permit us to deceive our participants in any way.

← →

The 12 rounds

You make decisions in 12 rounds. In one of these rounds, you will see the preferences of the five US citizens assigned to you. Your choice of a charity for that round is real, and we will carry it out with a 1 in 10 chance. However, we are not going to tell you which round involves your real choice. Please treat every one of these rounds as if it were real -- it could be!

We ask you to decide based on the will of the group as a whole, taking into account their preferences and disagreements, but ignoring your own preferences concerning the charitable organizations.

That's why we anonymize the charities. We will not refer to the them by their names but by abstract symbols like , , or . Each symbol represents the donation going to a specific organization. For instance, symbol might indicate that the donation goes to Doctors Without Borders, symbol might indicate that the donation goes to UNICEF, etc. (Don't bother to remember these symbols, they are just examples. They have absolutely no meaning, apart from serving as labels to help you visually distinguish between the charities).

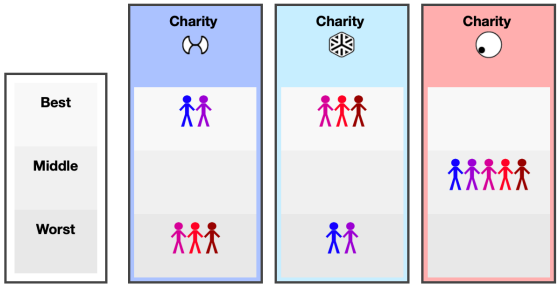
←

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The US citizens' preferences

To help you decide which organization will receive the donation of $20, you will see the preferences of each of the five US citizens over the organizations in a picture such as this one:

Each bar represents one of the charitable organizations you can choose.



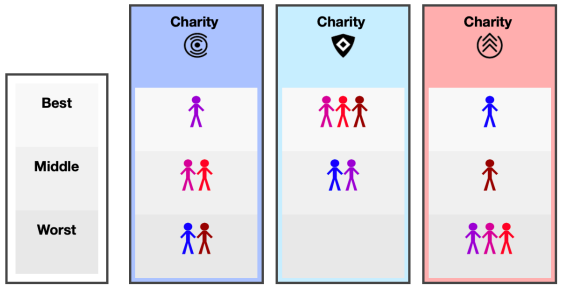
Each bar contains five stick figures ( ) which represent the five US citizens to whom you are assigned. Within each bar, each citizen is placed into one of three cells labeled "Best", "Middle" and "Worst", depending on how much he likes or dislikes the corresponding charitable organization to receive the donation of $20. Consider the bar on the very left (the charity represented by symbol), for instance. Within this bar, two citizens (and) are in the cell labeled "Best". Another three citizens (, , and) are in the cell labeled "Worst". Hence, charity is the one that citizen most prefers to receive the donation of $20, from amongst the three charities in this picture. Similarly, the charity represented by symbol is the one that citizen most prefers to receive the donation.

However, charity is the one that citizen least prefers to receive the donation amount, from amongst the three charities in this picture. It is also the one that tcitizens and prefer least.

Now look at the bar on the very right (the charity represented by symbol). In that bar, all citizen symbols are in the cell labeled "middle". Charity is the one that citizen , for instance, ranks in the middle, out of the three charities in this picture. It is also the charity each remaining citizen ranks in the middle.

Comprehension Check 1

To make sure you correctly understand the information about the five US citizens' preferences, please answer the questions below. (This page shows *different* preferences than those displayed on the previous page.)



How many citizens rank charity on top (most preferred)?

0 1 2 3 4 5

Which Charity does prefer least?

Charity Charity Charity

Where does rank Charity ?

Top Middle Bottom

←

→

Your task is to make the choice you believe is best for the group as a whole in light of its members' preferences.

To help you study the citizens' preferences, there are several options for rearranging, highlighting, and hiding information in the picture if you find it helpful. You don't have to use these interactive features, but we want you to know they're available.

We'll now walk you through each of the features. Please click "next" (the button with the arrow to the lower right) to start.

←

→

Subjects see each of the following statements, and complete the requested action before the next statement is shown.

(i) You can drag and drop each charity to a different position. Please give this a try by dragging one charity to a different location.

(ii) On each bar, just above the stick figures representing the citizens, you see a button labeled 'hide.' If you click it, the citizen's preferences about that charity will be hidden. If you click it again, they will be shown again. Please hide, then show, citizen's preferences about one of the charities.

(iii) If you hide one of the charities, only two charities remain. The picture then places the citizens into the cells according to which of the **two** charities they find better. The picture is still showing the same preference information by the same citizens! To see this, please again hide, then show, one of the charities.

(iv) At the bottom of the figure, you see two rows of buttons. Buttons in the top row let you hide and show individual citizens. Please hide, then show, one of the citizens.

(v) At the bottom of the figure, you see two rows of buttons. Buttons in the top row let you hide and show individual citizens. Please hide, then show, one of the citizens.

(vi) Buttons in the bottom row let you highlight individual citizens. Please highlight, then un-highlight one of the citizens.

(vii) Finally, at the top of the picture you see a button labeled 'Shuffle charities.' That button will shuffle the order in which the charities are displayed. Please click it.

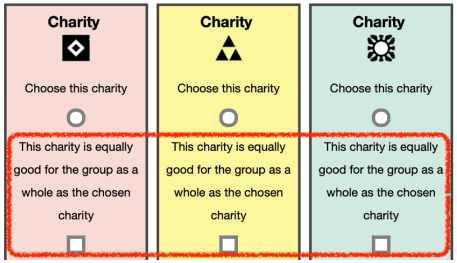
(viii) Great, that's all the features. Please click "next" to continue.

What if I think several charities are equally good for the group as a whole in light of its members' preferences?

In some rounds, there might be multiple charities that you believe represent the preferences of the five citizens equally well. In other rounds, there might be one single charity that you think best represents the preferences of the five citizens.

In all rounds, you will have to choose one single charity to receive the donation.

We ask you to indicate, however, if there are charities you believe represent the preference of the five citizens equally well as the one you have chosen, like this:



Please answer those questions truthfully.

←

→

In some rounds, only three of the four charities will be available. If so, your decision concerns the following three charities:

(They were randomly selected by the computer at the beginning of this survey.)

- Unicef logo here **UN International Children's Emergency Fund** is an agency that provides aid to children worldwide. It works to save children's lives, to defend their rights, and to help them fulfil their potential, from early childhood through adolescence.
- Oxfam logo here **Oxfam** is an international organization (NGO) that works to alleviate global poverty. It aims to help people build better lives for themselves, and for others
- Doctors Without Borders logo here **Doctors Without Borders** is an international organization (NGO) that provides lifesaving medical humanitarian care in conflict zones and in countries affected by endemic diseases.

←

→

Comprehension Check

Before you start with your decisions, please check all the correct statements below (and only those).

- ☐ The five US citizens have already participated in a first part of the experiment in which they ranked the four charities according to how much / how little they would like them to receive the donation of $20.
- ☐ Exactly one round is the "real" one: In that round I see the true preferences of the five US citizens. With a 1 in 10 chance, my decision in that round will determine which charitable organization will receive the donation of $20.
- ☐ The five US citizens are real. My choice of a charitable organization based on their preferences will determine which charitable organization will receive a donation (if this part of the study is randomly chosen to be carried out).
- ☐ The five US citizens are hypothetical, and no donation will actually be made to a charitable organization.

←

→

Your decisions begin now.

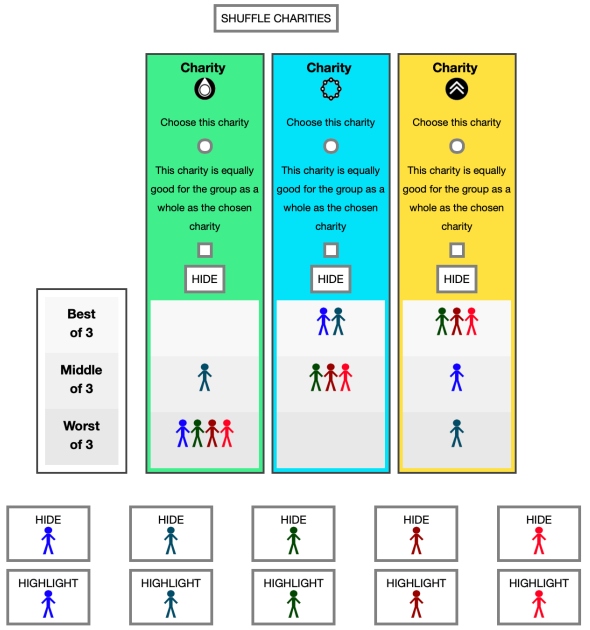
Please make each decision as if it is the one that counts, because it might be!

→

Round 1 of 12.

Oxfam logo here	Unicef logo here	Doctors Without Borders logo here

Study the US citizens' preferences, and choose a charity based on the preferences of this group of citizens as a whole.



*The terms "Best", "Middle", "Worst", etc. indicate citizens' preferences amongst the **currently displayed** charities, not amongst all charities.*

Questions

Finally, we would like to ask you a few questions about yourself and about the charities. Please answer truthfully.

How familiar are you with the charitable organizations?

	I have never heard of this charity before	I have heard about this charity in the past	I know this charity well
Oxfam logo here **Oxfam**	○	○	○
Doctors Without Borders logo here **Doctors without Borders**	○	○	○
IFAW logo here **International Fund for Animal Welfare**	○	○	○
Unicef logo here **UN International Children's Emergency Fund**	○	○	○

→

What do you think the average American thinks of each of the four charities?

The average American thinks that the work of the charity on the left is ...

	... much less important than that of the other three charities	... a bit less important than that of the other three charities	... just as important as that of the other three charities	... a bit more important than that of the other three charities	... a lot more important than that of the other three charities
IFAW logo here **International Fund for Animal Welfare**	○	○	○	○	○
Doctors Without Borders logo here **Doctors without Borders**	○	○	○	○	○
Oxfam logo here **Oxfam**	○	○	○	○	○
Unicef logo here **UN International Children's Emergency Fund**	○	○	○	○	○

← →

Consider two possible candidates for political leadership of the nation.

- Candidate 1 is compromising. While he is nobody's greatest favorite, most citizens would be ok with candidate 1. If he were elected, nobody would be exhilarated, nobody would be devastated.
- Candidate 2 is polarizing. Most citizens either love him or hate him. There is hardly anyone who does not have a strong opinion. If candidate 2 were elected, some citizens would be exhilarated, many others would be devastated, and nobody would be indifferent.

Which candidate better represents the will of the citizens of the nation?

Candidate 1	Candidate 2
○	○

←

→

Please indicate your level of agreement with both of the following statements

The political system should strive for compromise solutions that everyone can live with even if the result is nobody's absolute favorite.

Strongly disagree	Disagree	Agree	Strongly agree
○	○	○	○

What the majority wants is right for a country, even if that makes some citizens suffer.

Strongly disagree	Disagree	Agree	Strongly agree
○	○	○	○

←

→

How do you see yourself: are you a person who is generally willing to take risks, or do you try to avoid taking risks?

- ◯ Very willing to take risk
- ◯ Somewhat willing to take risks
- ◯ Somewhat unwilling to take risks
- ◯ Very unwilling to take risks

How well does the following statement describe you as a person? As long as I am not convinced otherwise, I assume that people have only the best intentions.

- ◯ Does not describe me at all
- ◯ Does not describe me very well
- ◯ Describes me somewhat well
- ◯ Describes me very well

How do you assess your willingness to share with others without expecting anything in return when it comes to charity?

- ◯ Completely unwilling to share
- ◯ Somewhat unwilling to share
- ◯ Somewhat willing to share
- ◯ Very willing to share

Do you work in a job in which you routinely make decisions that affect groups of people (e.g. manager)?

- ◯ Yes
- ◯ No

← →

← →

This is the end of this study.

We very much appreciate your participation!

E.4 Elicitation of mTurk worker Stakeholder preferences

Technical Check

To test whether your computer can display the study correctly, please copy the following number into the field below

189214

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To see if you are eligible to participate, please enter your Mechanical Turk Worker ID into the box below and then click NEXT.

Please see below for where you can find your Worker ID. Your WorkerID starts with the letter A and has 12-14 letters or numbers. It must be all CAPITAL letters and no spaces. It is NOT your email address.

→

WELCOME

This is a research study run by Stanford University and the University of Zurich.

IMPORTANT

This is a two-part study. Please only take this study if you will be able to complete *both* parts. There will be a one to two weeks delay between the first and second part.

The first part will take about 4 minutes to complete. You will earn the HIT payment of $0.50 for completing that part.

Between one and four weeks after finishing the first part, you will receive an invitation to participate in the second part. That part will take up to 45 minutes to complete, but, depending on your decisions and speed, could be much shorter. You will receive an invitation for the second part through a penny-bonus with a link. On average, you will then receive a bonus of $10 for completing the second part.

Informed Consent

PROTOCAL DIRECTORS:

B. Douglas Bernheim and Jonas Anselm Mueller-Gastell, Stanford University, Department of Economics.

DESCRIPTION: You are invited to participate in a research study on decision-making. You will be asked to read instructions on screen and/or on paper in the beginning and throughout the experiment. You will be asked to make several choices (by using a computer terminal) and answer several survey questions. You will also be asked to make other decisions that do not affect your payment.

PAYMENTS: You will receive the HIT payment upon completion of this study.

TIME INVOLVEMENT: Your participation in the first part of this experiment will take around 10 minutes.

YOUR RIGHTS: If you have read this form and have decided to participate in this project, please understand your participation is voluntary and you have the right discontinue participation at any time. If you choose to do so, your payment will be $0. Your individual privacy will be maintained in all published and written data resulting from the study. We will record your Internet Protocal address (IP address) to exclude duplicate survey respondents.

CONFLICT OF INTEREST STATEMENT: None of the researchers involved with this study have any conflict of interest.

CONTACT INFORMATION: If you have any questions, concerns or complaints or if you feel that you have been injured as a result of participating in the study, please contact Matias Cersosimo, Stanford University, Department of Economics, mati_cersosimo@stanford.edu, (650) 387 9919.

INDEPENDENT CONTACT: If you are not satisfied with how this study is being conducted, or if you have any concerns, complaints, or general questions about the research or your rights as a participant, please contact the Stanford University Research Compliance Office, 3000 El Camino Real, Five Palo Alto Square, 4th Floor, Palo Alto, CA 94306, (650)723-2480 to speak to someone independent of the research team.

By clicking the "continue" button below, you consent to participating in this decision making study.

Instructions

Please read carefully.

If you have questions about the instructions, please send an email to sandro.ambuehl@econ.uzh.ch for assistance.

Five different work tasks

In this part of this study, you will make several decisions regarding the task you will complete in part 2 (in one to four weeks from today).

Once we send you the link for part 2, you will have one week to complete that part.

There are five different work tasks, of which you will complete one in part 2. If you do complete the assigned task at that time, you will receive a bonus payment of, on average, $10.

To help you with your decision, on the next five pages, you will see a brief example of each of the five work tasks. For each of the five tasks, the "next" button will appear as soon as you have provided one correct answer.

→

Movie Review Classification (task 1)

In this task, you will classify 400 movie reviews by whether they are positive or negative; that is, by whether the reviewer liked or disliked the movie. This task will take around half an hour, but could take 15 minutes more or less depending on your motivation and speed.

Reviews that have been classified into positive or negative by hand are an important input for training computer algorithms (see, e.g., https://en.wikipedia.org/wiki/Labeled_data).

Please give it a try!
You do NOT need to complete it, just try it for a bit so you know how much / how little you like it)
Once you're done, click the next button.

The counter on top shows you the number of reviews you have classified correctly. For each correctly classified review, the counter increases by 1, but for each mistake you make, the counter decreases by 1.

Reviews classified correctly: 0

```
This film is overblown, predictable,
pretentious, and hollow to its core. The
settings are faithful to the era but self-
conscious in their magnification by prolonged
exposure. The lingering over artifacts stops the
action and cloys almost as much as the empty
dialogue. Tom Hanks seems to be sleepwalking
much as Bruce Willis did in Hart's War. Tom, you
can't give depth to a character simply by making
your face blank! The content did not warrant the
histrionic acting by Paul Newman. This is a dud
wrapped in an atomic bomb casing.
```

POSITIVE NEGATIVE

Spoken Words Transcription (task 2)

In this task, you will hear 400 spoken words. For each of them, you will click a button to indicate what was said. Transcribing spoken words takes few special Workers with experience in audio-transcription will typically require about 15 minutes to transcribe the text, whereas workers with less experience may take a bit longer.

Transcribing spoken text is needed as computers can readily analyze written data, but often have trouble with spoken words.

Please give it a try!
You do NOT need to complete it, just try it for a bit so you know how much / how little you like it)
Once you're done, click the next button.

The counter on top shows you the number of words you have transcribed correctly. For each correctly transcribed word, the counter increases by 1, but for each mistake you make, the counter decreases by 1.

Words transcribed correctly: 1



-0:01

BED CAT DOG DOWN GO HAPPY HOUSE SEVEN UP YES

Image Labeling (task 3)

In this task, you will see a sequence of 400 images. For each image you will click a button to indicate the content of the image. Labeling images does not take any special skills, and can easily be done while listening to music. This task will take about half an hour but could take 15 minutes more or less depending on your speed.

Images whose content has been indicated by hand are an important input for training computer algorithms (see, e.g., https://en.wikipedia.org/wiki/Labeled_data).

Please give it a try!
You do NOT need to complete it, just try it for a bit so you know how much / how little you like it)
Once you're done, click the next button.

The counter on top shows you the number of images you have labeled correctly. For each correctly labeled image, the counter increases by 1, but for each mistake you make, the counter decreases by 1.

Images labeled correctly: 0



Plane Car
Cat Bird
Deer Dog
Frog Ship
Horse Truck

Twitter hate speech sorting (task 4)

In this task, you will sort 400 short messages posted on twitter.com by whether they include hate speech (e.g. racist or sexist statements). This task will take around half an hour, but could take 15 minutes more or less depending on your motivation and speed.

Some workers may find this task emotionally taxing, other workers may not be bothered.

Messages that have been hand-classified into offensive and harmless are an important input for training computer algorithms to automatically detect offensive messages (see, e.g., https://en.wikipedia.org/wiki/Labeled_data).

Please give it a try!
You do NOT need to complete it, just try it for a bit so you know how much / how little you like it)
Once you're done, click the next button.

The counter on top shows you the number of messages you have classified correctly. For each correctly classified message, the counter increases by 1, but for each mistake you make, the counter decreases by 1.

Classified correctly: 0



←

Assigning apprentices to mentors (task 5)

This task requires more thought than the others. If you complete this task, you will repeatedly assign each of five (hypothetical) apprentices at a (hypothetical) company to one of five (hypothetical) mentors at that company.

You will have to create such assignments for 20 companies. This task will take around half an hour, but could take 15 minutes more or less.

You cannot just create any arbitrary assignment. Instead, each of the apprentices have indicated which mentor they would prefer most, second most, and so on. Likewise, each of the mentors have indicated which of the apprentices they would most like to mentor, which they would second-most like to mentor, and so on. You will need to find a way to pair apprentices and mentors to make all apprentices and mentors as happy as possible. (Specifically, you will have to find an assignment in which there are no two people that are not paired with each other, but would prefer each other over their assigned partners.)

You will have to create such assignments for 20 companies.

Some people will find this task more engaging than the less challenging tasks, while others will be put off by it. Some people will be much better at this task than others.

Please give this task a try. (You do NOT need to complete it, just try it for a bit so you know how much / how little you like it)

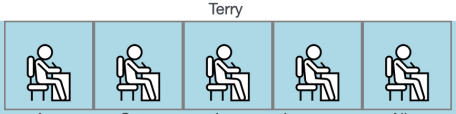
Mentors

Arthur's preferences over apprentices are 1. Lawrence, 2. Alice, 3. Sean, 4. Jean, 5. Ann
Hannah's preferences over apprentices are 1. Ann, 2. Sean, 3. Lawrence, 4. Alice, 5. Jean
Terry's preferences over apprentices are 1. Lawrence, 2. Sean, 3. Alice, 4. Ann, 5. Jean
Jacqueline's preferences over apprentices are 1. Lawrence, 2. Alice, 3. Jean, 4. Ann, 5. Sean
Christian's preferences over apprentices are 1. Lawrence, 2. Jean, 3. Ann, 4. Sean, 5. Alice



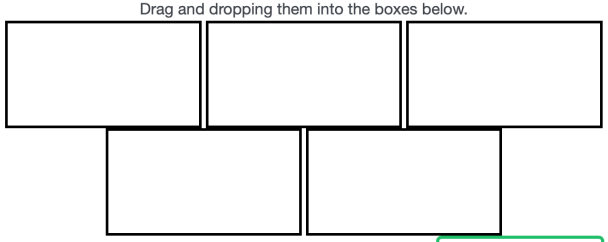
Apprentices

Ann's preferences over mentors are 1. Hannah, 2. Arthur, 3. Terry, 4. Christian, 5. Jacqueline
Sean's preferences over mentors are 1. Christian, 2. Jacqueline, 3. Hannah, 4. Arthur, 5. Terry
Jean's preferences over mentors are 1. Terry, 2. Christian, 3. Arthur, 4. Hannah, 5. Jacqueline
Lawrence's preferences over mentors are 1. Terry, 2. Jacqueline, 3. Arthur, 4. Christian, 5. Hannah
Alice's preferences over mentors are 1. Jacqueline, 2. Hannah, 3. Christian, 4. Arthur, 5. Terry



Pair mentors and apprentices

Drag and dropping them into the boxes below.



CHECK ANSWER

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Your decisions

Today's part of the experiment consists of a single decision.

At the beginning of this study, the computer has randomly selected one of the rounds. There is a 5% chance that your choice in that round will determine which of the tasks you will complete in part 2 of this study according to a procedure we will describe shortly. (With the remaining chance, the task you complete in part 2 will be determined in a different way.)

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Your decisions

Today's part of the experiment consists of a single decision.

Your task is to rank the five work tasks in the order that you genuinely prefer. Put the task you like most on top, the task you like second-most in second place, and so on. The task you like least will be on the bottom.

Our study is designed so that it is in your own best interest to rank the tasks as you genuinely prefer.

Here's why. At the beginning of the study, the computer has selected at random two possible tasks for you out of the five. There is a 5% chance that your choice in that round will determine which of the tasks you will complete in part 2 of this study according to a procedure we will describe shortly. (With the remaining chance, the task you complete in part 2 will be determined in a different way.) If your choice determines the task you will complete in the second part of the study, you will complete the one you have ranked more highly out of these two.

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Your choice

Please rank the five tasks in the order of your preference, as explained on the previous page.

Put the most preferred task on top, and the least preferred on the bottom.

↑
more preferred

Spoken word transcription (400 words)

Movie reviews classification (400 reviews)

Twitter hate-speech filtering (400 tweets)

Assigning apprentices to mentors (20 matchings to be found)

Image labeling (400 images)

less preferred
↓

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What is your gender?

- ○ Male
- ○ Female
- ○ Other (e.g. genderqueer)

What is your age?

- ○ Under 18
- ○ 18 - 24
- ○ 25 - 34
- ○ 35 - 44
- ○ 45 - 54
- ○ 55 - 64
- ○ 65 - 74
- ○ 75 - 84
- ○ 85 or older

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This is the end of the first part this study.

We will invite you for the second part of this study in one to four weeks.

We will send you the link through the text field for a small bonus payment. Hence, please make sure to follow your bonus payments.

Please enter

HFB847IN

as the survey code and submit the HIT.

Thank you for your participation.

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E.5 Elicitation of Swiss citizen Stakeholder preferences

English translation

Q1. Good day! Are you a citizen Of Switzerland? [Yes / No]

Q2. What is your general political attitude? [Clearly right, moderately right, center, moderately left clearly left]

Q3. This study is about a donation of SFr. 30 to one of the five largest Swiss political parties (measured by percentage of seats in the National Council). Your answer, as well as the answer of five other study participants will determine which party receives the donation.

Q4. With a one in forty chance, your answer will completely determine which party receives the donation. With the remaining probability, your answer will partly determine the recipient.

Q5. Please indicate which party you would like the most to receive the donation, and which the least. (Choose “1” for “the most” and “2” for “the least.”) The order of parties below is random. The computer has randomly selected two parties. If your own answer determines the recipient, the party (of the two) that you prefer more will receive the donation.

Original

