Who Should Get Money? Estimating Welfare Preferences in the U.S.

Pre-registration

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1 Introduction

In this project, we run a large-scale experiment to understand how the general population of the U.S. assigns "social marginal welfare weights" to other individuals in the society. These weights are general enough to capture many different fairness concerns that people may have.

In our experiment, participants assigned to the role of "Social Architects" are sampled from the general population of the U.S. Their task in the experiment is to assign social marginal welfare weights to seven "Recipients" with different after-tax incomes.

Our project has several goals. First, we provide the first estimate of welfare weights using a general population sample of the U.S. Second, we explore the heterogeneity in the weights by running a k-means clustering algorithm. Third, we administer a number of treatments to check the robustness of the welfare weights estimation. Fourth, we validate the weights by testing if Social Architects' weights correlate with their policy views. Fifth, we explore whether Social Architects' demographics and political affiliation correlate with their assigned weights. Sixth, we compare the weights obtained from our sample to the weights implied by policies. Seventh, we compare the weights obtained from our sample to common functional forms used in the literature. Finally, we explore the aggregation of weights.

2 Design

2.1 Recruitment of Social Architects

We recruit the participants in the role of Social Architects from the data service provider Lucid. We program the experiment using Qualtrics. The data service provider distributes the survey link to participants.

In the initial section of the survey, Social Architects are asked (i) their consent to participate in the experiment, (ii) their demographic information and political affiliation, and (iii) a question that tests their attention. If participants do not consent to participate in the survey, fall into one of the demographic quotas that are full, state that they do not reside in

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the U.S., or fail the attention check, they exit the survey and do not fill the rest of the survey. We define demographic quotas on the basis of age, income, education, gender, and region. Participants that do fit into one of the quotas proceed with the survey, and are subsequently randomly assigned into treatments. Table 1 provides the target quotas.

Table 1: Quotas for the full sample

	Number	Share
Annual Individual Income		
Less than $29,999	52	1061
$30,000 to $59,999	24	490
$60,000 to $99,999	13	265
$100,00 to $149,999	5	102
$150,000 and above	4	82
Age		
18-34	29	598
35 - 44	16	330
45 - 54	16	330
55 - 64	16	330
65 and above	20	412
Education		
Up to Highschool	51	1020
Some college	18	360
Bachelor or Associate	22	440
Masters or above	9	180
Region		
Region: West	24	487
Region: North-east	17	345
Region: South	37	751
Region: Mid-west	20.5	417
Sex		
Male	48	960
Female	52	1040

After being assigned to treatments, participants view the instructions. We include a comprehension check question at the end of the instructions. Participants who answer the comprehension check question wrong are dropped from the survey. The full set of instructions can be found in Section 5.

2.2 Design for Social Architects in treatment Loss x Moderate

In the main task, Social Architects face 6 decision screens. In each decision screen, they face a pair of Recipients (Recipient i and Recipient j) and have to decide how to allocate some money between them. Table 2 lists the income levels of the Recipients in each decision screen. To minimize the concern of any order effect, half the participants view the decision screens depicted in the top part of the table while the other half view the the decision screens depicted in the bottom part of the table.

Table 2: Income levels of the recipients

	Decision Screen					
	1	2	3	4	5	6
Recipient i	\$8,000	\$35,000	\$70,000	\$70,000	\$70,000	\$70,000
Recipient j	\$70,000	\$70,000	\$100,000	\$170,000	\$250,000	\$500,000
	Decision Screen: Reverse order					
	1	2	3	4	5	6
Recipient i	\$70,000	\$70,000	\$70,000	\$70,000	\$35,000	\$8,000
Recipient j	\$500,000	\$250,000	\$170,000	\$100,000	\$70,000	\$70,000

In each decision screen, a Social Architect faces a "staircase" with 4 questions. In each question, the Social Architect has to indicate whether she prefers the option on the left or right. The option on the right always takes away \$500 from Recipient j and gives \$500 to the Recipient i. The option on the left involves taking away an amount $-t$ from Recipient j and giving an amount pt to Recipient i. For convenience, we will refer to the option on the right as Constant reform and the option on the left as Variable reform. Note that participants are informed that two Recipients in the end would receive an initial \$1500 bonus.

The first question that Social Architects face is common for all Social Architects. The second, third, and fourth questions that Social Architects face depend on the choices that the Social Architects made in the first, second, and third questions respectively. Section 4 depicts the Variable reform amounts $(pt, -t)$ that would be selected for each Social Architect based on their choices. The order of questions can also be found in Section 5. For example, if a Social Architect chooses (500,-500) in the first question when asked to decide between (500,-500) and (1000,-1000), the second question asks Social Architect to choose between (500,-500) and (1250,-750). Section 4 indicates the mapping from Social Architects' choices to the implied p.[2] We similarly obtain $p_1, ..., p_6$ for each of the six decision screens.

[2]We order the set of 15 possible questions in increasing order of pt, such that it resembles a multiple price list. The Social Architect's choices would indicate that they would choose the Constant reform at the start and switch to Choosing the Variable reform in row i. We then take the mid-point of the Variable reform amounts between row i and row i-1 to identify p.

After the task of assigning weights, Social Architects face a second task where we elicit their policy views. The first question asks them whether they would like to increase the tax on millionaires and the second question asks them if they would like the government to increase redistribution. The order of the policy views questions is counterbalanced across participants.

2.3 Treatments

The design described above is for treatment Loss x Moderate in the study. We implement several other treatments.

Social Architects in treatment Loss x High go through the same steps as the Architects in treatment Loss x Moderate, with the exception that the Recipients in each decision screen are different. Table 3 presents the incomes of the Recipients in each decision screen in treatment Loss x High. As is the case in treatment Loss x Moderate, participants in treatment Loss x High are randomly assigned to two version of the survey, each of which presents the order of the Recipients differently.

Table 3: Income levels of the recipients in treatment conditions Loss x High and Gain x High

	Decision Screen					
	1	2	3	4	5	6
Recipient i	\$8,000	\$35,000	\$70,000	\$100,000	\$170,000	\$250,000
Recipient j	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
	Decision Screen: Reverse order					
	1	2	3	4	5	6
Recipient i	\$250,000	\$170,000	\$100,000	\$70,000	\$35,000	\$8,000
Recipient j	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000

In Treatment Gain x Moderate we change the framing of the Reform. In contrast to Treatment Loss x Moderate, Social Architects in Treatment Gain x Moderate are not told about the initial \$1500 bonus given to Recipients. Instead, the \$1500 is reflected in the Reform amounts they face in the questions. Everything else remains the same between Treatment Loss x Moderate and Treatment Gain x Moderate.

Finally, in Treatment Gain x High, Social Architects face the same decisions screens as Social Architects in Treatment Loss x High, indicated in Table 3. Furthermore, these Architects face the same questions (gain framing) as those in Treatment Gain x Moderate.

2.4 Implementation

At the end of the study, we will randomly select one Social Architect. For the randomly selected Social Architect, one of the six decision screens will be randomly selected, and one of the four questions within the selected decision screen will be randomly selected and implemented. The randomly selected question will involve two Recipients. We will recruit these two Recipients from a survey panel. The final bonus payments of the two Recipients will depend on the choices of the randomly selected Social Architect.

Note that we will only select one Social Architect across treatments in this wave of data collection as well as in other future waves of this study.

3 Analysis

3.1 Sample

The sample of completed responses includes all Social Architects who have consented to the study, who have passed the attention check, who have passed the comprehension question, and who have reached the final page of the study.

We drop participants in each treatment whose response time is less than 3 standard deviations from the mean response time in their treatment.

3.2 Estimating welfare weights

We construct the weights assigned by Social Architects in Treatment Loss x Moderate to the seven Recipients as follows. First, we set the raw weight assigned to Recipient 3 (earning \$70,000) as 1. The raw weights assigned to Recipients 1 through 7 (excluding Recipient 3) is given by $1/p_1, 1/p_2, p_3, p_4, p_5, p_6$[3]. The re-normalized weights assigned by a Social Architect to the 7 Recipients is given by dividing each of the raw weights by Σ, where $\Sigma = 1 + 1/p_1 + 1/p_2 + p_3 + p_4 + p_5 + p_6$.

We follow a similar procedure for participants in other treatments and for those whose order of Recipients is reversed.

3.3 Identifying clusters in the weights

We identify the clusters in the weights seperately in each Treatment by using two iterative methods: k-means and dendogram. We apply these two algorithms to pinpoint the number of clusters in the weights. Both methods establish how many clusters can consistently group

[3]Remember that in each decision screen, p is the weight assigned to the higher income Recipient divided by the weight assigned to the lowe income individual.

the Social Architects' weights. Finally, we will group the weights in clusters. As a robustness check we also identify the clusters in the pooled data.

3.4 Estimating the slope of weights

We identify the slope of the line fit through a Social Architect's weights across Recipients. In particular, we run a regression for each Social Architect in which the dependent variable is the weights assigned to the seven recipients and the independent variable is the vector (-1,-2,-3,-4,-5,-6,-7).[4] We define P_i as the coefficient associated with the vector in the regression. Higher values of the coefficient indicate a higher slope and thereby imply that the Social Architect is more progressive, i.e. assigns higher weights to the lower income individuals.

To test how the slope of the Architects' weights relate to the weights they attach to the seven recipients, we estimate the following regression:

$$P_i = \beta_0 + \sum_j \beta_j g(R_j)_i + \theta T_i + \alpha Order_i + \epsilon_i, \tag{1}$$

where $g(R_j)_i, \forall j \in \{1,2,3,5,6,7\}$ is the weight attached by Social Architect i on Recipient j. In the event that the variables $g(R_j)_i, \forall j \in \{1,2,3,5,6,7\}$ turn our to be highly multicollinear, we will run seven regressions where each of the seven variables $g(R_1)$, $g(R_2)$, $g(R_3)$, $g(R_4)$, $g(R_5)$, $g(R_6)$, $g(R_7)$ enter the regression separately. The dependent variable is the slope of the line fit through a Social Architect's weights across Recipients, as defined above. The vector T_i contains a set of three treatment dummies indicating if a Social Architect is in Treatment Loss x Moderate, Gain x High, or Gain x Moderate, respectively. Treatment Loss x High forms the base category. $Order_i$ is a dummy variable indicating the order of the decisions screens faced by Architect i.

Note that all the standard errors computed in all regressions are robust to heteroskedasticity (HC3).

3.5 The effect of treatments and controls on Architects' weights

Predictors of Architect's progressivity

To estimate the treatment effects, we estimate several regressions of the following form:

[4]The values -1,-2,-3,-4,-5,-6, and -7 are assigned to the Recipients who earn incomes \$8000, \$35,000, \$70,000, \$100,000, \$170,000, \$250,000, and \$500,000 respectively.

$$P_i = \beta_0 + \theta T_i + \alpha Order_i + \gamma X_i + \epsilon_i \tag{2}$$

P_i is the slope of the line fit through a Social Architect's weights across Recipients, as defined in the previous section. The vector T_i contains a set of treatment dummies, as defined in the previous section. The dummy variable $Order_i$ is defined in the previous section. The control variables X_i include the following dummy variables: High Age (=1 if age is above median age), High Education (=1 if education is above median education), Male (=1 if sex is male), and Republican (=1 if political affiliation is Republican). To flexibility control for income, we also include $ln(income)$ and $ln(income)^2$ as controls.

As a robustness check, we estimate Equation (2) without demographic controls. To explore the heterogeneous treatment effects, we run several Causal Forest models (Wager & Athey 2018). We do this separately for each of the three treatments (Loss x Moderate, Gain x High, or Gain x Moderate), comparing each to Treatment Loss x High. The control variables used in the models are defined above.

As a robustness check we will use a quadratic fit as an alternative measure of Social Architect's progressivity. In particular, for each Social Architect, we identify which value of ν corresponding to the function (after-tax income)$^{-\nu}$ fits the social Architect's weights the best. The best fit function is the one with the lowest root mean-squared error (RMSE). We then compare the average ν across treatments.

Predictors of Architect's weights

To understand the effect of the treatments and demographic variables on the weights assigned to each Recipient, we run several regressions of the following form

$$g(R_j)_i = \beta_0 + \theta T_i + \alpha Order_i + \gamma X_i + \epsilon_i \tag{3}$$

We estimate seven such regressions, such that in each regression, the dependent variable is the weight assigned by Architect i to Recipient j, for $j \in 1, ..., 7$. T_i, X_i, and $Order_i$ are defined above.

The effect of own income on assigned weights

To estimate the effect of own income on the assigned weights, we estimate the following fixed-effects model

$$\begin{aligned} g_{ij} =& \beta_0 + \beta_1 1(income\_near\_R_j)_{ij} + \beta_2 lnIncomediff_{ij} + \\ & \beta_3 1(income\_higher\_R_j) + \beta_4 lnIncomediff_{ij} * 1(income\_higher\_R_j) + \nu_i + \epsilon_{ij} \end{aligned} \quad (4)$$

where g_{ij} is the weight assigned by Social Architect i to Recipient j. $1(income\_near\_R_j)_{ij}$ takes a value of 1 if Social Architect i' income is closest to the income of Recipient j (+- 20% of Recipient j's income), and 0 otherwise. lnIncomediff_ij is the log of the income difference between Architect i and Recipient j. $1(income\_higher\_R_j)$ is a dummy variable that takes a value of 1 if the income of Social Architect i is higher than 1.2 times the income of Recipient j, and 0 otherwise. We leverage the variation within individuals by including individual fixed-effects ν_i.

To test if Architects' with similar incomes to a Recipient assign higher weights to that Recipient than do other Architects', we estimate the following fixed-effects model.

$$\begin{aligned} g_{ij} =& \beta_0 + \beta_0 + \beta_1 1(income\_near\_R_j)_{ij} + \beta_2 lnIncomediff_{ij} + \\ & \beta_3 1(income\_higher\_R_j) + \beta_4 lnIncomediff_{ij} * 1(income\_higher\_R_j) + \\ & \theta T_i + \alpha Order_i + \gamma X_i + \nu_j + \epsilon_{ij} \end{aligned} \quad (5)$$

In Equation (5), we include Recipient fixed-effects ν_j, a vector of treatment dummies T_i, dummy indicating the order $Order_i$, and demographic controls X_i.

As a robustness check, we estimate Equations (4) and (5), by changing the bandwidth of nearness to the Recipient's income to 10% and 30%.

3.6 Relation between individual weights and policy views

We estimate several linear regressions that takes the following form:

$$y_i = \beta_0 + \beta_1 P_i + \theta T_i + \alpha Order_i + \beta Order\_policy_i + \gamma X_i + \epsilon_i. \quad (6)$$

$P_i, T_i, Order_i$, and X_i are defined above. $Order\_policy_i$ is a dummy variable indicating the order in which the policy questions were presented to Social Architects. y_i is defined below. As a robustness check, we estimate Equation (6) without controls X_i. Table 4 provides an overview of the regressions estimated in this section.

Preference for redistribution

When we analyze the relationship between people's weights and their preferences for the government to reduce inequality, y_i in Equation (6) takes a value between 1 and 7, where higher values indicate that the Social Architect wants the government to do something to reduce inequality (we reverse code the question asked to participants).

As a robustness check we estimate an ordered probit model in which the dependent variable is people's preferences for redistribution.

Taxation of millionaires

When we analyze the relationship between people's weights and their preferences to increase the tax on millionaires, y_i in Equation (6) takes a value between 1 and 7, where higher values indicate that the Social Architect wants the government to increase the top-taxes (we reverse code the question asked to participants).

As a robustness check we estimate an ordered probit model in which the dependent variable is people's preferences for increasing the top-taxes.

In addition to estimating Equation (6) for the top-tax question, we also estimate several regressions that take the following form.

$$y_i = \beta_0 + \sum_{j}^{1,2,3,5,6,7} \beta_j g(R_j)_i + \theta T_i + \alpha Order_i + \beta Order\_policy_i + \gamma X_i + \epsilon_i. \tag{7}$$

where $g(R_j)_i$ is the weight attached by Social Architect i on Recipient j and y_i takes values between 1 and 7 indicating people's preferences to increase the taxes on millionaires. We include the weight assigned by Architects on Recipients 1 through 7, excluding Recipient 4, in the regression. In the event that the variables $g(R_1), ...g(R_7)$ turn out to be highly multicollinear, we will run seven regressions where each of the seven variables $g(R_1)$, $g(R_2)$, $g(R_3)$, $g(R_4)$, $g(R_5)$, $g(R_6)$, $g(R_7)$ enter the regression separately.

3.7 Applications

For the additional exercises carried out in the paper e.g., comparing our weights to the weights implied by policies, we take the simple average of the weights of all participants across all treatments. As a robustness check, we take the simple average of the weights across all treatments involving a gain-framing and take the simple average of the weights across treatments involving a loss-framing. As a final robustness check, we estimate the

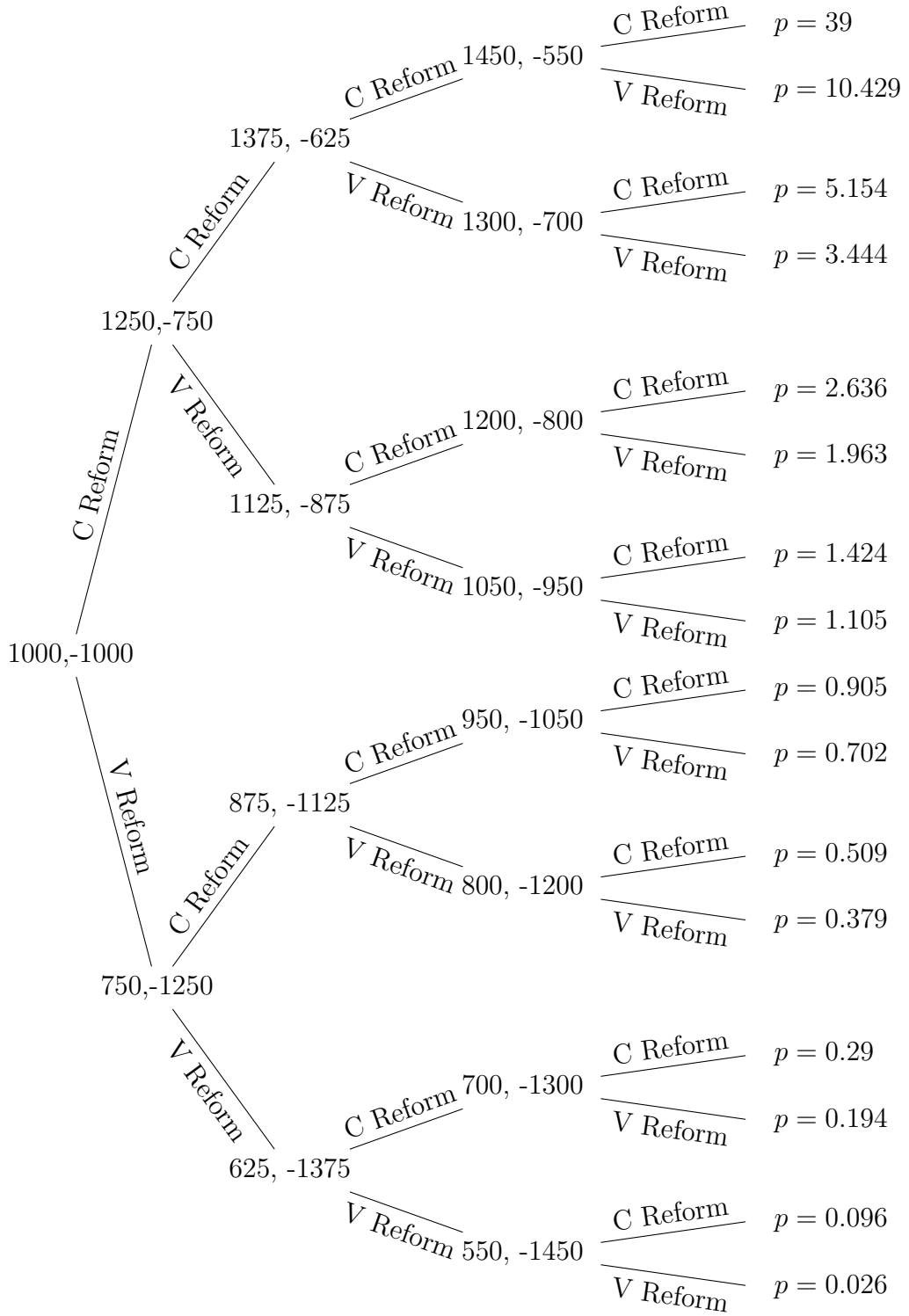
Table 4: Overview of regressions estimated to understand Architects' policy views

Dependent variable	Main explanatory variable	Demographic controls?
Reduce inequality	Slope of the weights	No
Reduce inequality	Slope of the weights	Yes
Tax on millionaires	Slope of the weights	No
Tax on millionaires	Slope of the weights	Yes
Tax on millionaires	g(R1), g(R2), g(R3) g(R5), g(R6), g(R7)	No
Tax on millionaires	g(R1), g(R2), g(R3) g(R5), g(R6), g(R7)	Yes

Notes: All regressions include treatment dummies, question order dummy, and policy order dummy.

weights excluding those who choose Constant Reform in every question and every decision screen.

4 Variable Reform ("V Reform") Amounts Selected by the Staircase Procedure in Treatments Loss x High and Loss x Moderate. Constant Reform Amounts are always (500,-500)



References

Wager, S. & Athey, S. (2018), 'Estimation and inference of heterogeneous treatment effects using random forests', *Journal of the American Statistical Association* **113**(523), 1228–1242.
URL: *https://doi.org/10.1080/01621459.2017.1319839*

5 Instructions

Bold text, underlining, tables, etc. appear as in the original screen.

5.1 Treatment Loss x Moderate

[Consent screen]

Introduction

Welcome to this research study. We appreciate your participation. We are a non-partisan group of researchers from University of Zurich and Erasmus University Rotterdam. This study contains real choices and questions regarding your demographic characteristics. No matter what your political views are, by completing this survey you are contributing to our knowledge as a society.

Time required

Approximately **10 minutes.**

Requirements

You must be a U.S. resident to participate in this study. You must also be above the age of 18.

Confidentiality

All data obtained from you will be used for research purposes only. Data will be anonymized immediately after collection. Researchers will at no point have access to any information that could be used to personally identify you.

Voluntary participation

It is voluntary to participate in the project, and you can at any time choose to withdraw your consent without stating any reason.

Questions about the Survey

If you have questions about this study or your rights, please get in touch with us at kr-

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Consent

I have received the above information about the project and am willing to participate.

- Yes
- No

page break

[If participant did not provide consent]

End of survey

You did not give your consent to continue with the study.

Thank you for your time.

Please click the following link to finish the survey:

[link]

page break

[Demographics screen]

What is your sex?

- Male
- Female

How old are you?

- 18 years old - 34 years old
- 35 years old - 44 years old
- 45 years old - 54 years old

- 55 years old - 64 years old
- 65 years old or above

In which state do you currently reside?

- Northeast (ME, NH, VT, MA, CT, RI, NY, PA, NJ)
- Midwest (OH, MI, IN, WI, IL, MN, IA, MO, ND, SD, NE, KS)
- South (DE, MD, DC, VA, WV, NC, SC, GA, FL, KY, TN, AL, MS, AR, LA, OK, TX)
- Pacific (MT, WY, CO, NM, ID, UT, AZ, NV, WA, OR, CA, AK, HI)
- I do not reside in the U.S.

What is the highest level of education you have completed?

- Less than High School
- High School/GED
- Some College
- Associate's Degree
- Bachelor's degree
- Master's degree
- Doctoral or Profession Degree (PhD, ED.D, JD, DVM, DO, MD, DDS, or similar)

As of today, do you consider yourself a Republican, a Democrat, or an Independent?

- Democrat
- Republican
- Independent

The next question is about your **total individual income in 2020 before taxes**. This figure should include income from all sources, including salaries, wages, pensions, Social Security, dividends, interest, and all other income. What was your total individual income (USD) in 2020?

- $29,999 and below
- $30,000 to $59,999
- $60,000 to $99,999
- $100,000 to $149,999
- $150,00 and above

[Displayed if $29,999 and below is chosen]

You have reported that your total individual income in 2020 before taxes was $29,999 and below.

Could you provide your best guess of what your **total individual income** was?

[Displayed if $30,000 to $59,999 is chosen]

You have reported that your total individual income in 2020 before taxes was $30,000 to $59,999.

Could you provide your best guess of what your **total individual income** was?

[Displayed if $60,000 to $99,999 is chosen]

You have reported that your total individual income in 2020 before taxes was $60,000 to $99,999.

Could you provide your best guess of what your **total individual income** was?

[Displayed if $100,000 to $149,999 is chosen]

You have reported that your total individual income in 2020 before taxes was $100,000 to $149,999.

Could you provide your best guess of what your **total individual income** was?

[Displayed if $150,000 and above is chosen]

You have reported that your total individual income in 2020 before taxes was $150,000 and above.

Could you provide your best guess of what your **total individual income** was?

page break

[If quotas are full]

End of survey

Unfortunately, we already have the number of participants needed for this study.

Thank you for your time.

Please click the following link to finish the survey:

[link]

page break

[If participant does not reside in the U.S]

End of survey

Unfortunately, you do not fulfil the requirements of this study since you do not reside in the U.S.

Thank you for your time.

Please click the following link to finish the survey:

[link]

page break

[Attention check screen]

There is always a big competition for our attention. Researchers have studied how long people continuously pay attention. The results suggest that the maximum time an average person continuously pays attention is about seven minutes. There is, however, large variation

and it is not uncommon for people to have a maximal attention span of less than five minutes or more than nine minutes. We want to make sure that we have your full level of attention and that you read all the instructions provided. We therefore would like you to answer the following question.

According to research, what is the maximum time an average person continuously pays attention?

- 5 minutes
- 6 minutes
- 7 minutes
- 9 minutes

page break

[If participant failed the attention check]

End of survey

Sorry, you failed the attention check. The correct answer was 7 minutes.

You cannot continue with the study.

Thank you for your time.

Please click the following link to finish the survey:

[link]

page break

[Instructions screen]

Instructions

In this study, you will make several choices involving **seven real people**. These people will be selected at random from a survey panel and will not participate in the same survey as you. These people are above the age of 18 and are U.S. citizens. The incomes of the seven people are as follows:

Person	After-tax Annual income
Person A	$8000
Person B	$35,000
Person C	$70,000
Person D	$100,000
Person E	$170,000
Person F	$250,000
Person G	$500,000

Here is an example of a question that you will see in the survey:

	Person C	Person G
After-tax annual income	**$70,000**	**$500,000**

Question 2/4: Please choose your preferred alternative

Person C: +$750 Person G: -$1250	Person C: +$500 Person G: -$500

In this question, if you choose the option on the left, then $1250 will be taken away from Person G and $750 will be given to Person C. If you choose the option on the right, then $500 will be taken away from Person G and $500 will be given to Person C.

If you choose the option on the left, the final incomes of the two people **(including an initial $1500 bonus)** will be Person C: $72,250 and Person G: $500,250. If you choose the option on the right, the final incomes of the two people (including an initial $1500 bonus) will be Person C: $72,000 and Person G: $501,000.

You will face four questions like the one you saw above in each "decision screen." **Overall, you will face six decision screens with four questions in each.** In each question, you will see a different amount in the option on the left. In each decision screen, you will see a different pair of people.

There is a chance that you may be randomly selected in this study. If you are randomly selected, your choice on one randomly selected question on one randomly selected decision

screen will be implemented. **This means that if you are randomly selected, one of your choices will have real consequences for two other people.** The final bonus of these two people will be transferred to them at the end of the study.

Please answer the following question to demonstrate that you have understood the instructions.

If you are randomly selected, which question(s) will be implemented?

- One randomly selected question in one randomly selected decision screen
- All four questions within one randomly selected decision screen
- All four questions in all seven decision screens

(You will be allowed to move to the next screen in 30 seconds)

page break

Decision Screen 1:

[D1Q1: shown to all participants]

Decision Screen 1/6

Please consider each question carefully because if you are selected, one of your choices will have real consequences for two other persons.

	Person A	Person G
After-tax annual income	**$8,000**	**$500,000**

Question 1/4: Please choose your preferred alternative

Person A: +$1000 Person G: -$1000	Person A: +$500 Person G: -$500

page break

[All questions hereafter in Decision Screen 1 look like D1Q1]

[D1Q2.1: If (500,-500) chosen in D1Q1, Architect chooses between (1250,-750) and (500,-500)]

page break

[D1Q2.2: If (1000, -1000) chosen in D1Q1, Architect chooses between (750,-1250) and (500,-500)]

page break

[D1Q3.1: If (500,-500) chosen in D1Q2.1, Architect chooses between (1375,-625) and (500,-500)]

page break

[D1Q3.2: If (1250,-750) chosen in D1Q2.1, Architect chooses between (1125,-875) and (500,-500)]

page break

[D1Q3.3: If (500,-500) chosen in D1Q2.2, Architect chooses between (875,-1125) and (500,-500)]

page break

[D1Q3.4: If (750,-1250) chosen in D1Q2.2, Architect chooses between (625,-1375) and (500,-500)]

page break

[D1Q4.1: If (500,-500) chosen in D1Q3.1, Architect chooses between (1450,-550) and (500,-500)]

page break

[D1Q4.2: If (1375,-625) chosen in D1Q3.1, Architect chooses between (1300,-700) and (500,-500)]

page break

[D1Q4.3: If (500,-500) chosen in D1Q3.2, Architect chooses between (1200,-800) and (500,-500)]

page break

[D1Q4.4: If (1125,-875) chosen in D1Q3.2, Architect chooses between (1050,-950) and (500,-500)]

page break

[D1Q4.5: If (500,-500) chosen in D1Q3.3, Architect chooses between (950,-1050) and (500,-500)]

page break

[D1Q4.6: If (875,-1125) chosen in D1Q3.3, Architect chooses between (800,-1200) and (500,-500)]

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[D1Q4.7: If (500,-500) chosen in D1Q3.4, Architect chooses between (700,-1300) and (500,-500)]

page break

[D1Q4.8: If (625,-1375) chosen in D1Q3.4, Architect chooses between (550,-1450) and (500,-500)]

page break

[Decision Screen 2 is identical to Decision Screen 1, except that the incomes of the two recipients are B: $35,000 and C: $70,000]

[Decision Screen 3 is identical to Decision Screen 1, except that the incomes of the two recipients are C: $70,000 and D: $100,000]

[Decision Screen 4 is identical to Decision Screen 1, except that the incomes of the two recipients are C: $70,000 and E: $170,000]

[Decision Screen 5 is identical to Decision Screen 1, except that the incomes of the two recipients are C: $70,000 and F: $250,000]

[Decision Screen 6 is identical to Decision Screen 1, except that the incomes of the two recipients are C: $70,000 and G: $500,000]

[For half the participants the order of the Decision Screens is reversed. The pair of recipients they views is as follows: Decision Screen 1 (C: $70,000 and G: $500,000), Decision Screen 2 (C: $70,000 and F: $250,000), Decision Screen 3 (C: $70,000 and E: $170,000), Decision Screen 4 (C: $70,000 and D: $100,000), Decision Screen 5 (B: $35,000 and C: $70,000), Decision Screen 6 (A: $8,000 and C: $70,000).]

page break

[Policy views screen]

[The order of the two questions is counterbalanced across participants in each treatment.]

We have some final questions. It is important for us that you answer them carefully.

The top income tax category in 2020 includes those with an annual individual income of over $518,400. Do you think that income taxes levied on these people in the top income category should be increased, stay the same, or decreased?

- 1 - Increased a lot
- ...
- 4 - Stay the same
- ...
- 7 - Decreased a lot

Some people think that the government in Washington ought to reduce the income differences between the rich and the poor, perhaps by raising the taxes of wealthy families or by giving income assistance to the poor. Others think that the government should not concern itself with reducing this income difference between the rich and the poor.

Here is a scale from 1 to 7. Think of a score of 1 as meaning that the government ought to reduce the income differences between rich and poor, and a score of 7 meaning that the government should not concern itself with reducing income differences. What score between 1 and 7 comes closest to the way you feel?

- 1 - Government should do something to reduce income differences between rich and poor

- ...
- 7 - Government should not concern itself with income differences

page break

End of survey

Thank you for your time!

Please click the following link to finish the survey:

[link]

5.2 Treatment Loss x High

[The Consent screen, Demographics screen, Attention check screen, Instruction Screen and Policy Views screen are identical to the corresponding screens in Treatment Loss x Moderate]

[Decision Screen 1 is identical to Decision Screen 1 from Treatment Loss x Moderate, except that the incomes of the two recipients are A: $8,000 and G: $500,000]

[Decision Screen 2 is identical to Decision Screen 1, except that the incomes of the two recipients are B: $35,000 and G: $500,000]

[Decision Screen 3 is identical to Decision Screen 1, except that the incomes of the two recipients are C: $70,000 and G: $500,000]

[Decision Screen 4 is identical to Decision Screen 1, except that the incomes of the two recipients are D: $100,000 and G: $500,000]

[Decision Screen 5 is identical to Decision Screen 1, except that the incomes of the two recipients are E: $170,000 and G: $500,000]

[Decision Screen 6 is identical to Decision Screen 1, except that the incomes of the two recipients are F: $250,000 and G: $500,000]

[For half the participants the order of the Decision Screens is reversed. The pair of recipients they views is as follows: Decision Screen 1 (F: $250,000 and G: $500,000), Decision Screen 2 (E: $170,000 and G: $500,000), Decision Screen 3 (D: $100,000 and G: $500,000), Decision

Screen 4 (C: $70,000 and G: $500,000), Decision Screen 5 (B: $35,000 and G: $500,000), Decision Screen 6 (A: $8,000 and G: $500,000).]

5.3 Treatment Gain x Moderate

[The Consent screen, Demographics screen, Attention check screen, and Policy views screen are identical to the corresponding screens in Treatment Loss x Moderate.]

[Instructions screen]

Instructions

In this study, you will make several choices involving **seven real people**. These people will be selected at random from a survey panel and will not participate in the same survey as you. These people are above the age of 18 and are U.S. citizens. The incomes of the seven people are as follows:

Person	**After-tax Annual income**
Person A	$8000
Person B	$35,000
Person C	$70,000
Person D	$100,000
Person E	$170,000
Person F	$250,000
Person G	$500,000

Here is an example of a question that you will see in the survey:

	Person C	**Person G**
After-tax annual income	**$70,000**	**$500,000**

Question 2/4: Please choose your preferred alternative

Person C: +$2250 Person G: +$250	Person C: +$2000 Person G: +$1000

In this question, if you choose the option on the left, then $250 will be given to Person G and $2250 will be given to Person C. If you choose the option on the right, then $1000 will be given to Person G and $2000 will be given to person C.

If you choose the option on the left, the final incomes of the two people will be Person C: $72,250 and Person G: $500,250. If you choose the option on the right, the final incomes of the two people will be Person C: $72,000 and Person G: $501,000.

You will face four questions like the one you saw above in each "decision screen." **Overall, you will face six decision screens with four questions in each.** In each question, you will see a different amount in the option on the left. In each decision screen, you will see a different pair of people.

There is a chance that you may be randomly selected in this study. If you are randomly selected, your choice on one randomly selected question on one randomly selected decision screen will be implemented. **This means that if you are randomly selected, one of your choices will have real consequences for two other people.** The final bonus of these two people will be transferred to them at the end of the study.

Please answer the following question to demonstrate that you have understood the instructions.

If you are randomly selected, which question(s) will be implemented?

- One randomly selected question in one randomly selected decision screen
- All four questions within one randomly selected decision screen
- All four questions in all seven decision screens

(You will be allowed to move to the next screen in 30 seconds)

page break

[Decision screen 1]

[D1Q1: Architect chooses between (2500,500) and (2000,1000)]

page break

[D1Q2.1: If (2000,1000) chosen in D1Q1, Architect chooses between (2750,750) and (2000,1000)]

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[D1Q2.2: If (2500, 500) chosen in D1Q1, Architect chooses between (2250,250) and (2000,1000)]

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[D1Q3.1: If (2000,1000) chosen in D1Q2.1, Architect chooses between (2875,875) and (2000,1000)]

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[D1Q3.2: If (2750,750) chosen in D1Q2.1, Architect chooses between (2625,625) and (2000,1000)]

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[D1Q3.3: If (2000,1000) chosen in D1Q2.2, Architect chooses between (2375,375) and (2000,1000)]

page break

[D1Q3.4: If (2250,250) chosen in D1Q2.2, Architect chooses between (2125,125) and (2000,1000)]

page break

[D1Q4.1: If (2000,1000) chosen in D1Q3.1, Architect chooses between (2950,950) and (2000,1000)]

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[D1Q4.2: If (2875,875) chosen in D1Q3.1, Architect chooses between (2800,800) and (2000,1000)]

page break

[D1Q4.3: If (2000,1000) chosen in D1Q3.2, Architect chooses between (2700,700) and (2000,1000)]

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[D1Q4.4: If (2625,625) chosen in D1Q3.2, Architect chooses between (2550,550) and (2000,1000)]

page break

[D1Q4.5: If (2000,1000) chosen in D1Q3.3, Architect chooses between (2450,450) and (2000,1000)]

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[D1Q4.6: If (2375,375) chosen in D1Q3.3, Architect chooses between (2300,300) and (2000,1000)]

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[D1Q4.7: If (2000,1000) chosen in D1Q3.4, Architect chooses between (2200,200) and (2000,1000)]

page break

[D1Q4.8: If (2125,125) chosen in D1Q3.4, Architect chooses between (2050,50) and (2000,1000)]

page break

[Decision Screen 2 is identical to Decision Screen 1, except that the incomes of the two recipients are B: $35,000 and C: $70,000]

[Decision Screen 3 is identical to Decision Screen 1, except that the incomes of the two recipients are C: $70,000 and D: $100,000]

[Decision Screen 4 is identical to Decision Screen 1, except that the incomes of the two recipients are C: $70,000 and E: $170,000]

[Decision Screen 5 is identical to Decision Screen 1, except that the incomes of the two recipients are C: $70,000 and F: $250,000]

[Decision Screen 6 is identical to Decision Screen 1, except that the incomes of the two recipients are C: $70,000 and G: $500,000]

[For half the participants the order of the Decision Screens is reversed. The pair of recipients they views is as follows: Decision Screen 1 (C: $70,000 and G: $500,000), Decision Screen 2 (C: $70,000 and F: $250,000), Decision Screen 3 (C: $70,000 and E: $170,000), Decision Screen 4 (C: $70,000 and D: $100,000), Decision Screen 5 (B: $35,000 and C: $70,000), Decision Screen 6 (A: $8,000 and C: $70,000).]

5.4 Treatment Gain x High

[The Consent screen, Demographics screen, Attention check screen, Instruction screen and Policy views screen are identical to the corresponding screens in Treatment Gain x Moderate.]

[Decision Screen 1 is identical to Decision Screen 1 from Treatment Gain x Moderate, except that the incomes of the two recipients are A: $8,000 and G: $500,000]

[Decision Screen 2 is identical to Decision Screen 1, except that the incomes of the two recipients are B: $35,000 and G: $500,000]

[Decision Screen 3 is identical to Decision Screen 1, except that the incomes of the two recipients are C: $70,000 and G: $500,000]

[Decision Screen 4 is identical to Decision Screen 1, except that the incomes of the two recipients are D: $100,000 and G: $500,000]

[Decision Screen 5 is identical to Decision Screen 1, except that the incomes of the two recipients are E: $170,000 and G: $500,000]

[Decision Screen 6 is identical to Decision Screen 1, except that the incomes of the two recipients are F: $250,000 and G: $500,000]

[For half the participants the order of the Decision Screens is reversed. The pair of recipients they views is as follows: Decision Screen 1 (F: $250,000 and G: $500,000), Decision Screen 2 (E: $170,000 and G: $500,000), Decision Screen 3 (D: $100,000 and G: $500,000), Decision Screen 4 (C: $70,000 and G: $500,000), Decision Screen 5 (B: $35,000 and G: $500,000), Decision Screen 6 (A: $8,000 and G: $500,000).]