

Does Inequality Change Society? Inequality Externality Beliefs as a Determinant for Redistributive Preferences*

Max Lobeck[†] Morten Nyborg Støstad[‡]

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Abstract

This paper represents the first comprehensive study on citizens' beliefs in inequality externalities, or the belief that inequality changes society itself, and the causal connection from such beliefs to individuals' preferences for redistribution. Using a representative survey of 4,371 U.S. citizens we first map the widespread beliefs in inequality's externality effects and show how they change across various demographics. The belief that inequality changes society is nearly universal – 97% of individuals believe that economic inequality affects society in one way or another – and a large majority also believes that economic inequality has a negative effect on societal factors such as crime, generalized trust, social unrest, and even on economic growth and innovation. We then establish a causal link from such beliefs to individuals' redistributive preferences by using exogeneously provided video information treatments. With this and other methods we estimate the importance of externality beliefs on redistributive preferences to be roughly two-thirds of that of broad fairness preferences; however, inequality externality arguments are potentially less polarizing and more effective across the income distribution.

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[†]University of Konstanz, Universitätsstrasse 10, 78464 Konstanz, Germany, Cluster of Excellence “The Politics of Inequality”, Thurgau Institute of Economics, e-mail: max.lobeck@uni-konstanz.de

[‡]Paris School of Economics, 48 Boulevard Jourdan, 75014 Paris, France. Phone: +33766142152. e-mail: morten.stostad@psemail.eu.

1 Introduction

Why do we care about economic inequalities? Some believe inequalities are unfair; others say the value of a dollar differs across incomes. Yet others think inequalities are implicit to meritocracy or an unfortunate side effect of a tax system that aims at incentivizing economic growth. These motivations and their effect on redistributive preferences have all been extensively studied in the academic literature (reviews in Alesina and Giuliano, 2011; Cappelen et al., 2020). Nonetheless, a key determinant is missing from the above. People might care about economic inequality because they think *economic inequality itself* changes society; say more inequality leads to increasing crime rates, for example, or lower levels of generalized societal trust, or a better or worse society more generally speaking. Individuals’ beliefs about such societal effects of inequality – or *inequality externalities*, as we call them, following Støstad and Cowell (2020) – are largely unstudied, yet they are both intriguing in themselves and potentially strong determinants for redistributive preferences. Following these observations, this paper asks two main questions. First, do U.S. citizens expect economic inequality to change society, and if so, how? And second, do such beliefs impact individual redistributive preferences?

To answer these questions we analyze novel survey responses from 4,371 representative U.S. citizens. In doing so we create the first comprehensive database of individuals’ beliefs about inequality externalities. We find that 97% of individuals believe that economic inequality changes society in some way. 15% believe the net effect is positive, 60% believe the net effect is negative, and 21% believe the positive and negative effects roughly cancel each other out. We also find strong beliefs in specific inequality externalities; 76% think inequality increases crime, for example, 68% think inequality decreases generalized trust, and a majority thinks inequality *decreases* both economic growth and innovation. Respondents believe such inequality externalities could have considerable consequences; 61% of our respondents answer either “Yes, maybe” (46%) or “Yes, definitely” (25%) when asked whether extremely high inequality levels would “significantly increase the chances of a societal collapse”. We present further descriptive results on respondents’ beliefs about inequality’s effects on corruption, social unrest, the quality of democratic institutions, and more. Generally speaking, our results indicate that individuals believe economic inequality is a strong negative externality.

Our study also examines whether these beliefs constitute an important *determinant* for redistributive preferences. We both conclusively show that such beliefs *do* affect redistributive preferences and compare the relative importance of this externality effect to the importance of economic fairness beliefs. We make several novel survey design choices to avoid survey demand and priming effects, and thus to ensure the robustness of these results, including what we call a *secondary survey* and *dual control groups*. Our main method to explore whether inequality externality beliefs are a determinant of redistributive preferences is a set of four exogenous information treatments. We use easily digestible videos to inform respondents of four different empirical relationships; (i) income inequality’s correlation with crime, (ii) income inequality’s correlation with trust, (iii) comprehensive information about income inequality’s correlations with trust and crime, non-correlations with innovation and growth, and general arguments about how inequality could affect society – we call this the *full externality treatment*, and (iv) the decoupling of wages and productivity since roughly 1980 and rising top incomes in the period

after. The first three treatments are designed to exogenously shift various externality beliefs, whereas the last is designed to exogenously shift fairness beliefs as a strong benchmark, due to them being well-known determinants of redistributive preferences in the literature (Alesina and Giuliano, 2011).

The full externality treatment and the fairness treatment are both significant predictors of higher redistributive preferences when compared to our control group ($p < 0.01$). These results are strongly robust to different specifications. The crime and trust externality treatment effects are not statistically significant, but are in the expected direction of increased redistributive preferences. The magnitude of the full externality treatment effect is roughly half that of the fairness treatment. First-stage effects are consistently strong and as expected; externality treatments increase beliefs that inequality affects society, and the fairness treatment increase beliefs that the economic system is unfair. In general the opposite is not true; the externality treatment has small or non-existent effects on fairness beliefs, and the fairness treatment has small or non-existent effects on externality beliefs (indicating limited spillovers). In summary, the main externality information treatment has an effect on redistributive preferences through the intended channel (externality beliefs) that is smaller than the fairness treatment but still on the scale of other preferences for redistribution determinants – the externality treatment effect is similar to the well-known gender difference in redistributive preferences, for example. Given the exogenous nature of the treatment, this shows that inequality externality beliefs are determinants of redistributive preferences. The non-significance of the two other externality treatments indicate that externality information is more convincing when it is of a comprehensive nature rather than focusing on one specific inequality externality (for example inequality’s effect on crime).

We use two other methods to explore the relative importance of inequality externality beliefs and fairness concerns on redistributive preferences. The first of these two is a classical horse-race, comparing the predictive power of similar questions on each topic in estimating redistributive preferences. The second is simply asking respondents what they take into account when thinking about their preferred level of redistribution. Similarly to the information treatment, these approaches find that externality beliefs are between half as important and equally important as fairness views in determining redistributive preferences.

Our results also indicate a significant structural difference in how inequality externality and fairness arguments operate. Fairness arguments require, to some extent, a victim or villain – someone who deserves more, or someone who deserves less – and are thus prone to polarize. Externality arguments are potentially less polarizing, instead focusing on the shared burden of the unintended societal effects of inequality. Strengthening the polarization theory, individuals who saw the fairness video are significantly more likely to report their reaction to the video as *anger*. Their reaction is also split across incomes; bottom income individuals are significantly more swayed than top income individuals. The externality treatment, on the other hand, is less likely to cause anger and relatively equally convincing across the distribution. We thus hypothesize that there is a trade-off between fairness arguments and externality arguments when pushing for more redistribution; fairness arguments are more effective near the bottom of the distribution, but cause more polarization across income levels. The efficacy of externality

arguments is more evenly distributed, thus being less effective near the bottom, but are also less polarizing.

Beyond their effects on redistributive preferences, such inequality externality beliefs are also intriguing to study due to their influence on economic theory. Individualist utility theory implicitly assumes that inequality is not an externality, as agents are individually indifferent to living in equal and unequal societies (keeping their own income constant). If economic inequality externalities exist, even rational and selfish individuals might have such preferences; in a world in which inequality increases crime, for example, rational agents would prefer more equal societies *ceteris paribus*. As discussed in Thurow (1971) and Støstad and Cowell (2020), this observation has large ramifications for individualist economic theory, but only if economic inequality actually is an externality. The lack of exogenous variation in economic inequality makes that proposition difficult to prove, despite strong indicative evidence (see e.g. Fajnzylber et al., 2002; Gallego, 2016). This paper, in summarizing the widespread public beliefs in such effects, presents strong indicative evidence that utilitarian theory has to seriously confront the issues posed by considering inequality as an externality.

The theoretical ramifications go beyond utilitarianism. When economic inequality is an externality, the core problem of economics becomes not just to maximize income efficiently but also to find the correct trade-off between more income and less inequality – to chart a steady path forward while preserving and improving society as we know it. What amount of resource inequality is safe and sustainable? Should we limit top incomes entirely? These questions are relevant questions when inequality is an externality and go beyond simple egalitarianism. Accepting inequality externalities as real and serious presents trade-offs that are more complex than those posed in the existing literature around redistributive preferences.

Contribution to the existing literature This paper primarily adds to two existing literatures. The first is the existing literature on the motives behind preferences over redistribution and the origins of the heterogeneity in redistributive preference. Past work asks whether fairness ideals and efficiency costs of redistribution are important motives behind inequality acceptance (Cappelen et al., 2007; Almås et al., 2020), whether beliefs about one’s relevant position affects redistributive preferences (Cruces et al., 2013; Karadja et al., 2017), whether redistributive preferences are elastic to information about inequality (Kuziemko et al., 2015), and whether beliefs about social mobility affect redistributive preferences (Alesina et al., 2018; Gärtner et al., 2019). Surprisingly, given its intuitive nature and important implications, citizens’ concerns about inequality’s damaging effects has not been studied by this literature, even though it has been proposed as a possible motive behind redistributive preferences in the prior literature (Alesina and Giuliano, 2011). One exception is work by Rueda and Stegmueller (2016) who present correlational evidence of an association between fear of crime and preferences for redistribution and linking the two through an externality-based argument in their theoretical framework. Thus, by studying inequality externality concerns as a possible motive behind preferences for redistribution, we allow for a more complete characterization of preferences over redistribution.

The second is that of inequality’s externality effects. The theoretical strand of this literature began with Thurow (1971), where it was argued that the first welfare theorem fails if the income distribution is a pure public good. Alesina and Giuliano (2011) and Rueda and Stegmueller

(2016) both contribute to both literatures; the former notes that economic inequality can affect individual consumption and thus redistributive preferences, while the latter considers crime as an inequality externality and finds that this has an effect on the preferred redistribution of the rich. Støstad and Cowell (2020) formalizes the framework around inequality as an externality, discusses and creates micro-foundations for non-consumption based inequality externalities, and shows the large influence an income inequality externality can have on optimal taxation policy.

There is also a large empirical literature on inequality externality effects which, in terms of establishing causal connections, is troubled by empirical concerns and insufficient data. Some of these issues are described in Støstad (2019). Despite this, there is a large literature attempting to empirically estimate such effects, particularly on crime and individual health (where data is more easily available). A full examination of this literature is beyond the scope of this paper; summaries for crime and individual health can be found in Rufrancos et al. (2013) and Bergh et al. (2016). In short, there is strong correlational evidence indicating that inequality is an externality in various dimensions. However, convincing causal evidence is unlikely to be forthcoming due to intrinsic empirical issues.

2 Survey-design

The survey is organized into three parts. Part 1 elicits baseline attitudes towards the government and collects most demographic information. Part 2 consists of a randomized information treatment. Part 3 elicits our main outcomes on redistributive preferences, views regarding inequality externalities, and fairness beliefs, as well as collecting the remaining demographic information.

2.1 Part 1: Demographic information and attitudes towards the government

After a set of attention checks to ensure the respondent can answer simple questions correctly, the first part elicits sociodemographic information that is needed to check for representativeness and, importantly, for selective attrition across the treatment groups. In this stage we elicit gender, age, income, wealth, marital status, race, type of college degree, employment status, and political identity. We also elicit respondents' trust in the federal government and beliefs about whether people work less when taxed more. These latter attitudes have shown to be important drivers of redistributive policy preferences that are independent of fairness concerns or externality beliefs. For that reason, we elicit these views *before* the information intervention.

2.2 Part 2: Information intervention

The information intervention in Part 2 is our main treatment variation. Our sample is split into four treatment groups and two control groups. The two control groups (one passive, one active) are together as large as each of the four treatment groups.

All subjects are first asked to answer two questions about economic inequality:

- *How much do you agree with the following statement? Working-class Americans are generally paid [more/less] than their productivity.*

- *How much do you agree with the following statement? Countries with more economic equality usually function [better/worse].*

These questions are used as a lead-in for the information videos. Videos are shown to the subjects in all four treatment groups, as well as one of the two control groups. Subjects in video-treatments are introduced to the video with the following prompt: “*We will now show you some information regarding the last question you answered. Please watch the video below.*” This gives the video a purpose and makes it seem less out-of-context, thus alleviating experimenter demand effects. All videos are animated motion graphics videos that present information in an easily digestible way, thus avoiding survey-fatigue and increasing attention compared to, for example, reading a text about the same topic. While the style of the videos is similar across treatment groups, the content differs and is explained in greater detail below. After watching the video, subjects answer three very simple control questions to ensure that they actually understood the information provided in the video. We require respondents to answer these questions correctly to proceed with the survey.

Secondary survey Upon answering the control questions, we ask subjects a battery of “filler questions” that are directly related to the video the subjects previously watched. All these questions focus on personal experiences related to the video topic. In the crime treatment, an example of one such question is the following: *Have you lived in more than one place in your life? If so, think back – do you think the places with more economic inequality had more crime, generally speaking?* These questions are designed to hide the purpose of the study by being directly related to the videos – thus explaining why the respondents had to watch them – while being unrelated to the true intent of the survey. They thus create the impression that the videos are shown to lead into these filler questions and have no direct link with the rest of the survey. To emphasize this connection we immediately end Part 2 of the survey after the filler questions, notifying respondents of this and the start of Part 3, upon which we continue with several unrelated demographic questions to create the appearance of each survey part being functionally independent. Our true treatment effects are all based on questions in Part 3 (see below). The respondents have thus seen what we call a *secondary survey* – a logical flow of questions that disguise the true purpose of the survey. This should avoid strong experimenter demand effects.

Treatment group 1: Crime as an inequality externality This treatment group receives information on the relationship between crime and inequality. As shown in the screenshot in Figure B1, the video first present subjects with a scatter plot and a fitted line that characterizes the relationship between inequality and homicides. The next graphic characterizes the magnitude of the correlation. It shows that very equal countries have, on average, between one and two homicides per year per 100,000 people, while very unequal countries have, on average, between ten and twenty homicides per year per 100,000 people. The video ends with a statement that states that researchers still argue about whether this means that inequality causes more crime, but most research on this topic confirmed this relationship and find that this relationship holds for other types of crime such as property crime and robberies. The latter question should signal

to the respondents that we present a comprehensive picture of the debate, thereby reducing the impression that our survey has a left-wing bias.

The filler question asks the respondents about whether they experienced or perceived more crime in places they lived or travelled to with higher levels of inequality. It, thus, creates a direct link to the video by asking the subjects whether they themselves experienced this relationship but is not related to preferences for redistribution.

Treatment group 2: Trust as an inequality externality This treatment group receives information on the relationship between trust and inequality. As shown in the screenshot in Figure B2, the video first present subjects with a scatter plot and a fitted line that characterizes the relationship between inequality and generalized trust (the number of individuals that say that most people can be trusted in their country). The next graphic characterizes the magnitude of the correlation. It shows that very equal countries have on average 55 people out of 100 stating that they trust others while is only 15 out of 100 that do so in very unequal countries. The video ends with a statement that states that researchers still argue about whether this means that inequality causes more crime, but most research on this topic confirmed this relationship and find that this relationship holds for other measures of trust, cooperation or how many people return lost wallets. As in the crime treatment, the latter question should signal to the respondents that we present a comprehensive picture of the debate, thereby reducing the impression that our survey has a left-wing bias.

The filler question asks the respondents about whether they experienced this relationship between trust and inequality in their own life. The questions are identically structured as in the crime and inequality treatment, but with the difference that they ask the subjects how they perceive the relationship between trust and inequality.

Treatment group 3: Full externality treatment While treatment groups 1 and 2 tackle different types of externality, treatment group 3 is designed as a comprehensive and all-encompassing externality treatment. It, thus, aims at fully answering the question on whether functions with high economic inequality usually function better or worse. By presenting as much evidence that highlights the *negative* effects of inequality and by, furthermore, showing that the evidence for possible externalities is rather limited, the treatment makes the strongest case for the negative consequences of inequality and should be seen as an upper-bound of a possible treatment effect. As shown in the screenshot in Figure B3, the first part of the video shows the same information that we present in treatments 1 and 2. It then shows that there is no relationship between inequality and economic growth nor between inequality and innovation (measured by the number of patents). Upon stating that researchers have found negative effects of inequality on social unrest, corruption, and political polarization, the video ends with a quote from Amartya Sen that “virtually all the problems in the world come from inequality of one kind or another.”

The reader may now ask herself what we aim at with this treatment compared to the crime and trust treatments introduced above. The full externality treatment is designed to create something of an upper bound for externality treatments. The trust and crime treatments are more precise (and less likely to be seen as biased); however, we are concerned that only informing one type of externality would put a low upper bound on our results. Realistically, redistributive

preferences are composed of fairness concerns, externality beliefs, and other factors. Crime or trust are only one part of each of these externality concerns. If our respondents are rational, even a large shift in the belief in a crime externality might be an overall small shift in their redistributive preferences. The full externality solves this issue by informing subjects about externalities on a broader scale. We intend to compare the single-externality treatments to the full-externality treatment to explore to what extent our results are driven by simply mentioning the concept of externalities; ideally we find treatment effects in each case, with a larger effect for the full externality.¹

Opposed to the filler questions for treatments 1 and 2, treatment 3's ask the respondents whether they generally experienced that more unequal places function better or worse than more equal places. It, thus, asks the subjects about their *general* experiences of inequality externalities, which were also targeted by the treatment video.

Treatment group 4: Fairness treatment The fourth treatment group receives information on how the wage-productivity gap has evolved since 1975, as shown in the screenshot in Figure B4. The stimulus will include information that blue-collar's wages stagnated while their productivity increased since the 1980s. Wages of the top 1% earners, on the other hand, increased sharply, indicating that the economic gains from the increase in productivity went for the most part to the richest American.

The treatment intends to give respondents information about the *fairness* of the economy. We will compare the magnitude of this to the externality treatments. We hypothesize that fairness beliefs are potentially less malleable than externality concerns; if so, we should be able to detect this in the respective magnitudes of treatment effects.²

The filler questions on fairness ask subjects to recall whether they observed in their own surrounding that people were paid closer to what they produced in the 1950s compared to today.

Control group 1: Active control The active control group receives a video that is structured in a very similar way as the one on trust and crime. The information communicated through the video, however, informs the subjects about how to measure inequality by informing the subjects about the difference between measuring inequality through the Gini index or the Top 10% income share, as shown in the screenshot in Figure B5. It, thus, does not contain any information that is relevant for their preferences for redistribution but gives individuals a stimulus about inequality itself. This implies that subjects are primed to think about inequality without revealing any information about inequality externalities or the fairness of the prevailing income distribution. The comparison across the two group, thus, seeks to isolate the role of information. Filler questions to this treatment ask subjects to reflect whether they (a) have already thought about the measurement of inequality and (b) whether they have encountered

¹Only using a full externality treatment would leave us open to (justified) criticism that our main result is driven by a biased information treatment that could induce significant demand effects. While we overall believe such demand effects are unlikely to drive results, we want to keep the specific externality treatments to have more robust results.

²This could be the case even if the absolute importance of fairness and externalities are equal, which we will explore later (100 points question).

the measures we previously explained in their everyday life.

Control group 2: Passive control Our study also has a passive control group that receives no stimuli at all.

Dual control groups There are benefits and drawbacks to both a passive control group, where respondents see nothing, and an active control group, where respondents see information on a similar but unrelated topic. A passive control does not require as much attention from respondents which could bias subsequent results, changes the survey flow, and could create attrition problems if some respondents drop out from the video treatment.

While the active control constitutes a somewhat cleaner control group, the passive control group has the benefit of collecting more extensive descriptive data on externalities at the baseline. We will compare the main outcomes across these two variables and in case that there is no significant difference across those groups, we will pool them and subsequently treat them as one large control group. Both control groups receive a larger set of questions about inequality externalities in the final part of the survey (after all other relevant questions).

Summary of the variation induced through the treatments Treatment groups 1 to 3 shape respondents' beliefs about externalities without referring to anything related to fairness. Comparing redistributive preferences of these groups to the baseline, thus gives us insights into the effect of (different) information on the consequences of inequality on preferences for redistribution. Treatment group 4, on the other side, informs subjects about the fairness of existing inequality but makes no reference to the consequences of inequality. Comparing the redistributive preferences of this group to the baseline allows identifying how information on the distributive fairness shapes preferences for redistribution. Comparing the magnitude of the treatment effects allows inferring what type of information has a larger effect in affecting preferences for redistribution.

It should be noted that all our treatments are designed in a way that it has a weakly positive effect on beliefs, in the sense that the induced variation in beliefs should always lead to a weakly larger demand for redistribution. This feature is implemented by design because it enables us to form clear hypotheses for a potential treatment effect.³

2.3 Part 3: Outcome variables

Preferences for redistribution

Our main outcome variables are various measures of preferences for redistribution. We elicit redistributive preferences on a general level, as well as more specifically and policy oriented, with a special focus on preferences for taxing the rich. More specifically, we have one question that asks respondents using a Likert scale to choose the level of redistribution that they prefer, from no redistribution to full redistribution. This very general question is complemented by a question

³We do not implement a design that only talks about potential positive externalities (growth, innovation) because the existing evidence on this topic is much more mixed than that of negative externalities. Furthermore, such externalities are easily confused with labor supply effects (i.e. lower taxes lead to a high labor supply) which would complicate our design significantly.

that asks whether the respondent believes that inequality is a very serious issue in the US. To assess whether our results do not only apply to attitudes towards economic inequality generally speaking but also to a preference for redistributive preferences, we ask subjects whether they prefer the government to take measures to reduce inequality (the same as used by the European Social Survey) and their preferred average tax rate for the so called “Top 10%”. The former, thus, elicits a preference for government intervention generally speaking, while the latter captures demand for one of the most effective policy tools to reduce income inequality by taxing high incomes (source).

To better understand the motives behind the elicited demand for redistribution, we ask subjects to state in their own words why they want the level of redistribution they just revealed. This gives us a qualitative measure on the motives behind their preferred level of redistribution. To have a more quantitative assessment of the motives behind the preferred level of redistribution, we ask them to rank their subjective importance of several motives behind inequality by allocating 100 points across several motives (fairness, externality concerns, selfishness, etc.).

Externality beliefs

The next battery of questions elicit respondents’ externality beliefs. The first question elicits externality beliefs in a very general way by asking whether inequality changes society for the better, for the worse, or does not change inequality at all. This question, thus, provides our main *first stage* that allows us to assess whether the treatment was successful in actually shaping externality beliefs generally speaking.

To get a better understanding of what type of externalities individuals view as being affected by inequality, we introduce a survey module that asks subjects whether they view certain specific societal outcomes to be affected from inequality. We selected those that have previously appeared in public and academic discussion about inequality’s societal effects. These include the ones that were specifically targeted in some information treatments (trust, crime, growth, innovation), as well as other factors such as institutions, quality of local public goods such as infrastructure, overall quality of life, political polarization, as well as corruption. We see this module as a valuable descriptive assessment that characterizes American’s externality beliefs on a more detailed level compared to the more general question outlined above.

Fairness views

The final module of the survey elicits subjects’ fairness views using two questions. The first asks whether the current distribution of income and wealth in the US is fair because everybody gets what they are entitled to or whether some get much more than what they are entitled to, while others get too little. Note that this question is deliberately asked in a way that relates directly to our fairness treatment. It, thus, serves as a first-stage outcome for our fairness treatment. We supplement this question with a more classical question that elicits subjects’ perception of whether one gets rich through hard work or luck.

3 Data Collection and Methodology

Representativity Data were collected between December 6 and December 24. Respondents were recruited through the survey provider Lucid, which is commonly used by economic researchers (see e.g. Haaland and Roth, 2021). To ensure sufficient data quality, respondents have to pass a series of attention checks before entering the actual survey.

3.1 Data quality checks

5007 subjects completed the survey. To ensure sufficient data quality, we took the following measures: First, we drop 5% of the fastest respondents as a rule of thumb, as is often done in the literature and survey companies.⁴ Second, we pre-specified the exclusion of subjects that spend less time on the screen with the video than the duration of the video, as well as those that claim to not have watched the video. Third, we deleted respondents that dropped out of the survey in the middle and then retook the survey, who we identify due to identical IP-addresses. Fourth, we drop subjects that were flagged due to providing “nonsense” answers to text-based questions and other signals that indicate that the respondent tried to click through the survey as fast as possible.⁵ Fifth, our survey contains several attention checks and subjects can only start the survey after passing the first attention check and passing two of the next three attention check. These attention checks are relatively easy and designed to sieve out individuals that do not read the question at all. Overall, this leaves a final sample of 4,371 respondents.

3.2 Respondent characteristics

We used quotas to aim for representativity along age, gender, geographical region and political affiliation (Democrat and Republican). The table below shows the main observable characteristics along these lines.

Table 1 displays the observable characteristics of our sample. As mentioned above we quota-sampled based on political affiliation, gender, broad age group, geographical region. To elicit political preferences, we used the same question that is used by Gallup to monitor political preferences in America.⁶ The final distribution mirrors the one of the November Gallup quite closely (31% Republican, 27% Democrat, 41% Independent) even though we slightly oversample Democrats and undersample independents.⁷ Our sample is completely balanced on gender, meaning that men are slightly over-represented compared to the overall population. Our sample matches the age-group distribution of the overall population (17%, 16%, 15%, 16%, 16%, 16%) reasonably well and all age-groups are significantly represented. Furthermore, we match the population distribution of census region (38%, 24%, 17%, 21%) indicating that we have broad regional representation within our sample.

⁴Since different treatment groups watch different videos, we drop the 5% fastest subjects within each treatment group.

⁵While the last two measures were not pre-specified, we do believe that they are crucial to guarantee for decent data quality. Note, that our main results hold even after including these subjects.

⁶“In politics, as of today, do you consider yourself a Republican, a Democrat or an independent?”

⁷Note that there is quite a lot of fluctuation in this distribution on a month-to-month basis (c.f. <https://news.gallup.com/poll/15370/party-affiliation.aspx>).

Table 1: Observable characteristics

	Total	Share	SD	Min	Max
Republican	1,385	0.32	0.47	0	1
Democrat	1,293	0.30	0.46	0	1
Independent	1,685	0.39	0.49	0	1
Male	2,164	0.50	0.50	0	1
Female	2,183	0.50	0.50	0	1
White	3,350	0.77	0.42	0	1
Black	411	0.09	0.29	0	1
Neither black or white	610	0.14	0.35	0	1
Income: 0-25k	970	0.22	0.42	0	1
Income: 25-50k	1,260	0.29	0.45	0	1
Income: 50-100k	1,331	0.30	0.46	0	1
Income: 100k and more	810	0.19	0.39	0	1
Age 18-29	611	0.14	0.35	0	1
Age 30-39	726	0.17	0.37	0	1
Age 40-49	748	0.17	0.38	0	1
Age 50-59	621	0.14	0.35	0	1
Age 60-69	761	0.17	0.38	0	1
Age 70 and above	904	0.21	0.41	0	1
4-year college degree or more	2,179	0.50	0.50	0	1
Employed	2,064	0.47	0.50	0	1
Unemployed	413	0.09	0.29	0	1
Outside the labor force	1,894	0.43	0.50	0	1
South	1,679	0.38	0.49	0	1
West	1,067	0.24	0.43	0	1
North-East	698	0.16	0.37	0	1
Midwest	927	0.21	0.41	0	1

Though we did not explicitly target these dimensions, we are also interested in having diverse socio-economic representation. While we have significant variation in household income, we have a somewhat smaller share of high-income (\$100k+) households – 33% for the overall population versus 19% in our sample – and a higher share of low- (0-\$25k) and lower middle-income households (\$25k-\$50k) – 18% and 20% in the overall population versus 22% and 29% in our sample.⁸ Our sample is less representative on racial dimensions by oversampling white Americans, which constitute 60% of the overall population. Hispanics and Latinos are underrepresented in our study (18.5% in the overall population versus 5.6% in our sample), and to a lesser degree so are Black Americans (13.4% in the overall population versus 9.4% in our sample). We have a somewhat larger share of individuals that are outside the labor force or unemployed rather than employed or self-employed compared to the overall population.⁹ Similar to other studies using similar access-panels, our sample is slightly more educated than the average American, as half of the respondents have at least a college degree versus 36% in the overall population.

Despite not being perfectly representative along all observable characteristics, we believe it is reasonable approximation of U.S. society as a whole. This is particularly true as we have a fully representative range of political views, which are the most statistically significant determinant for inequality externality beliefs among our observables (see Section 4).

3.3 Comparison across treatment groups

Next, we compare the respondents’ characteristics across treatment groups. First, we compare active and passive control groups with each other. We pre-specified to merge these to groups conditional on being similar enough. To that end, we pre-specified the following decision rule:

“If the active and passive control group are sufficiently similar, we will merge them for the main analysis. This decision will be made upon not reaching all the three following criteria.

- There is no 1% statistical difference in the index outcome variable between the active and passive control.
- There is not a 5% statistical difference in at least three of the four redistribution dummy variables listed above.
- There is not a 5% statistical difference in at least three of the four externality dummy variables listed above.

If one of these criteria are reached, we will present regressions with both control groups as separate categories.”

⁸Note that this disparities is typical for access-panels as the one used by us (e.g. Stantcheva, 2021).

⁹The labor force participation rate was 61.8% in November 2021 (<https://www.bls.gov/news.release/empsit.nr0.htm>); in our sample this number is 46%.

Table 2: Balance table for redistributive preferences

Variable	(1) Passive Control	(2) Active Control	(3) Difference
RP Index	-0.111 (0.965)	-0.045 (0.984)	0.067 (0.065)
Wants redistribution	0.370 (0.483)	0.360 (0.481)	-0.009 (0.032)
Increase top taxes	0.537 (0.499)	0.622 (0.486)	0.085*** (0.033)
Gov. reduce ineq.	0.480 (0.500)	0.508 (0.501)	0.028 (0.033)
Ineq. is serious issue	0.515 (0.500)	0.508 (0.501)	-0.007 (0.033)
Observations	538	394	932

Note. This table represent mean (standard deviations) for redistributive preference measures of respondents in the active (column 1) and passive (column 2) control groups. Column (3) characterizes the difference across the two. *Significance levels:* *10%, **5%, ***1%.

As shown in Table 2 the index is not significantly different across the two groups. From the redistributive preference variables, only the variable on top tax-rates is significantly different across the two groups.¹⁰ The other variables are not significantly different between control groups; the differences are also relatively small and in opposing directions. As pre-specified, we will thus merge the two groups.

One can also ask how the two groups differ across first-stage outcomes. As shown in Table A1 there is no significant difference across the two groups across these dimensions. This indicates that the difference for the top tax rate is likely to be spurious, as other strong predictors of redistributive preferences such as fairness views are balanced across the two groups.

While the previous table compared the two groups *after* the treatment, one can also ask whether the two groups are balanced on pre-treatment fairness views or other values. As shown in Table A2, there are no significant differences between the two groups on any of these dimensions.

Finally, we can also compare socio-demographic characteristics across the two groups. Table A3 compares the two groups along various socio-demographic characteristics. We find that the two groups are mostly balanced apart from a few exceptions. Subjects in the active control group are less likely to be neither black or white, and are somewhat differently allocated into the three income groups. Note that these differences are not large and including them as control variables does not affect the differences in redistributive preferences or first-stage outcomes. Beyond that, passive control group subjects are not more or less likely to pass all three attention checks build into the survey than active control groups. Neither are they more or less likely to pass an attention check that was administered *after* the treatment.

Overall, the results show that the two groups are sufficiently similar to be merged and can be treated as one control group. While there are few idiosyncratic differences across the two groups, they are non-systematic and likely to be spurious, reflecting the fact that we are testing many hypotheses at once. We thus remain consistent with our pre-analysis plan and merge the

¹⁰This is most likely statistical noise; it is also possible that mentioning the top 10% income share shifted individuals' top tax rate preferences.

two groups.

Next, we compare the treatment groups with the control groups across observable characteristics. As shown in Table A4, the two groups are balanced on nearly every dimension. There is, however, an important exception. Subjects in the crime treatment group have significantly higher perceptions that unequal countries usually function worse.

Table A5 compares observable characteristics across the Trust and Control groups. The two groups are completely balanced on observables.

Table A6 compares observable characteristics across Full externality and Control group. The full externality group has somewhat fewer individuals high income households but more individuals from middle-income households. They are also slightly more likely to believe that working-class Americans are paid less than their productivity.

Table A7 compares observables across Fairness and Control group. The two groups are balanced on all covariates with the exception of gender (slightly more en in the Fairness group) and the number of individuals from middle-income households (slightly more in the Fairness group).

Overall, the groups are, as expected from our research design, well-balanced. Though there are small differences in observables, these seem fairly spurious and do not reveal any systematic changes across treatment groups. Note that our regressions control for observable characteristics. Including or excluding these regressors does not change the results, underlining the that they do not mirror relevant variation across treatment groups.

4 Results

4.1 Descriptive analyses of externality beliefs

We first characterize externality beliefs within our sample.

The first externality-based question in the sample asks whether subjects generally agree that inequality has societal effects. This is also our most general externality question. The question reads “Generally speaking, do you think **more economic inequality** changes society **for the better** or **for the worse**?” Subjects could then choose between 5 options ranging from “A lot to the better” over “Neither / no change” to “A lot for the worse.” If subjects chose “Neither / no change”, we ask them a follow-up question of whether they chose this option because they believe that inequality has no effect on society or because they think the good and bad effects cancel each other out.

Table 3 illustrates the distribution of answers to this question. The first thing to remark is that only a small minority of roughly 15 percent states that inequality has positive societal effects, i.e. constitutes a positive externality. This stands in stark contrast with the 60 percent of subjects that state that inequality changes society somewhat or a lot for the worse. In other words, a majority of subjects believe that inequality has negative societal beliefs.

The neutral option, that inequality does not change society, was chosen by 25% of our sample. There are two possible rationales for this answer; (1) the respondent does not believe that inequality affects society in any particular way at all, or (2) the respondent believes that

Table 3: General externality beliefs at the baseline

	Freq.	Percent
A lot for the better	38	4.08
Somewhat for the better	102	10.94
Neither / No change	237	25.43
Somewhat for the worse	324	34.76
A lot for the worse	231	24.79
Total	932	100

Note. Only data from control group shown. Question text: “*Generally speaking, do you think more economic inequality changes society for the better or for the worse?*”

inequality has positive as well as negative societal effects and that the two cancel each other out.¹¹ Of the 237 respondents in the control group who chose the neutral option, 194 (82%) responded that good and bad effects cancel each other out, while only 30 (13%) responded that inequality has absolutely no effects. Of the overall sample, then, only 3.3% (30/920) answer that inequality has no societal effects at all.¹² The belief that inequality affects society in one way or the other is shared nearly unanimously.

Our main battery of inequality externality questions asks how respondents think inequality affects different aspects of society. Not all respondents were asked every question (to prevent question exhaustion). In total, respondents were asked whether inequality affects crime, corruption, political polarization, unemployment, innovation, economic growth, the quality of local public goods such as schools or libraries, people’s overall quality of life (comparing people with the same income in more or less unequal societies), the quality of democratic institutions, and generalized trust. The standard question asks: “*How does more economic inequality change the [amount of crime / overall level of trust / ...] in a country?*”. Note that the question is symmetric; we give respondents no indication of which variables should be affected in which direction.¹³ In certain cases, when the variable in question was difficult to accurately define in a few words, we also added a short definition before the question. See Table A8 for these definitions and the full wording of each variable.

To ensure that the phrasing of the question did not significantly impact answers, we presented one-third of respondents per question with the phrasing “*How do larger differences in income and wealth within the population...*” instead of “*How does more economic inequality...*”. This has a small but non-negligible effect on results. In most questions it shifts the frequency of answers by roughly 2-4 percentage points.¹⁴ We merge the two phrasings for the main descriptive analysis.

¹¹There is also a third possibility in that the subjects misunderstood the question. We accounted for that by adding this as an option to the follow-up question. This was, however, only chosen by 5% of those that clicked “Neither / No change” in the original question.

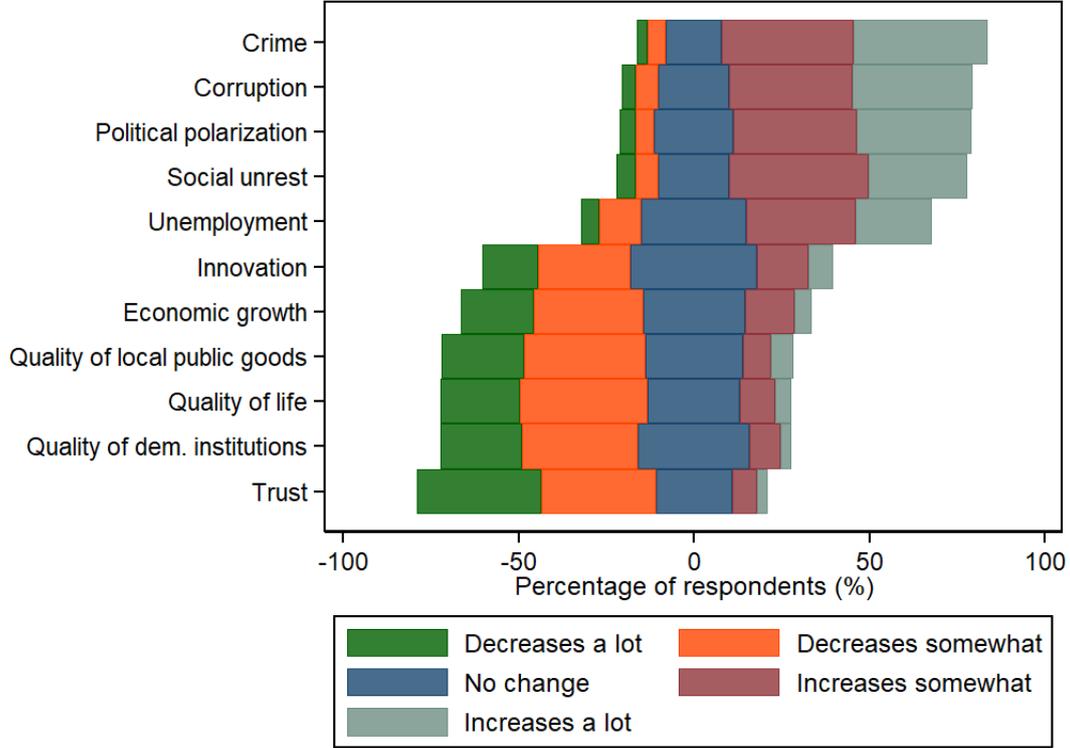
¹²Discarding the 12 who answered that they did not understand the question in the follow-up.

¹³To ensure that respondents understood the direction of their answer each answer option re-iterated the causal channel, as for example “More inequality → a lot more crime”. To ensure symmetry the answer order was also randomly flipped.

¹⁴The largest phrasing effect is for economic growth, where about 8% of individuals shift their response away

Figure 1 characterizes respondents’ answers to these questions. The bars on the right side of "0" indicates the share of respondents that believe that inequality increases this societal variable, while the bars on the left-hand-side indicate the opposite. The bars centered around zero indicate the share of subjects that answered that inequality does not affect this factor.

Figure 1: Distribution of Externality Beliefs in Control Group



Note. Questions are ordered according to which portion of respondents believe that inequality increases the variable. Full question example: “How does more economic inequality change the amount of crime in a country?” Answer option example: “More inequality → a lot more crime”. $n \in \{628, 932\}$.

Table 4: Distribution of Externality Beliefs in Control Group

	Crime	Corruption	Pol. polar.	Social unrest	Unemployment	Innovation	Econ. growth	Public goods	Quality of life	Dem. inst.	Trust
Increases	76%	69%	68%	68%	53%	22%	19%	14%	14%	12%	10%
No change	16%	20%	23%	20%	30%	36%	29%	28%	26%	32%	22%
Decreases	8%	11%	10%	12%	17%	42%	52%	58%	59%	56%	68%

Note. The corresponding table to Figure 1. Shows the distribution of specific externality beliefs. “Increase” is the share of respondents that state that inequality “increases a lot” or “increases somewhat” the societal factor of interest. “No change” is the share of respondents that state that inequality does not induce a change on the factor of interest. “Decrease” is the share of respondents that state that inequality “decreases a lot” or “decreases somewhat” the societal factor of interest.

Before we discuss any one specific inequality externality, we note that the answers imply that respondents overall believe that inequality has a negative societal impact through every single variable we included in the survey. This finding is more convincing given the fact that from inequality decreasing growth under the “larger differences” phrasing (55% to 47%).

the "positive direction" of the variables change. More trust is a positive outcome, for example, whereas more crime is a negative outcome. Accordingly, a clear majority of respondents reply that inequality decreases trust and increases crime. All questions are perfectly symmetric, yet the data in Figure 1 neatly splits on this axis.

We will now discuss the specific inequality externalities. First, there is a strong belief that economic inequality increases crime, which is a canonical inequality externality studied in previous research (Fajnzylber et al., 2002). Only 8 % of baseline respondents believe inequality decreases crime; 16% believe inequality does not affect crime, whereas a large 77% believe inequality increases crime. This is the most agreement we find in inequality's effect on a specific variable across all variables. Similar but somewhat smaller figures are found for the percentage of respondents believing inequality increases the negative outcomes of corruption (69%) and social unrest (68%). These variables are both conceptually related to crime; a majority of respondents seem to believe that more unequal societies are less stable and law-abiding in general. Political polarization (68%) is also largely believed to increase with inequality. This latter result may be influenced by the recent rise in both economic inequality and political polarization in the U.S. (see Bonica et al. (2013), among others).

We also ask how individuals believe that inequality affects positive outcomes such as generalized trust or the quality of democratic institutions. Generalized trust presents the most agreement; 68% believe inequality decreases the overall level of trust in a country. Then follows quality of life, where we specifically ask respondents to compare between people with the same income in more equal or unequal societies. Under this definition, 59% believe inequality worsens quality of life generally speaking – more strong evidence that individuals believe inequality itself is an economic externality. A clear majority believes inequality deteriorates the functioning of the collective parts of society, as observed through the number of respondents who believe inequality decreases the quality of local public goods (58%) and the quality of democratic institutions (56%).

The three last outcomes we present in this battery are on inequality's effect on economic growth, innovation, and unemployment. Inequality's effects on economic performance is more ambiguous than the other variables we survey.¹⁵ On one hand, one could argue that inequality promotes growth by strengthening incentives. This has been a traditional argument for maintaining high inequality levels, as this Boris Johnson quote from 2013 exemplifies:

"I stress – I don't believe that economic equality is possible; indeed some measure of inequality is essential for the spirit of envy and keeping up with the Joneses that is, like greed, a valuable spur to economic activity."

On the other hand, one could argue that inequality reduces economic performance through aggregate demand, poverty traps, or the many potential negative effects we already discussed – on trust, criminal activity, democratic institutions, and so on. Martin Wolf, the chief economics commentator of the *Financial Times*, wrote such an argument in 2019:

¹⁵While one could conceivably argue that inequality has a positive effect through outcomes such as crime or trust – say that inequality decreases crime through gated communities, for instance – the academic literature has typically highlighted inequality's negative effects (see e.g. Wilkinson and Pickett, 2011).

“[Inequality] makes politics far more fractious, undermines social mobility; weakens aggregate demand and slows economic growth.”

Between these two arguments, Americans’ beliefs clearly point towards the latter. A majority of respondents believe that inequality generally increases unemployment (53%) and reduces growth (52%). Somewhat less than a majority also believe that inequality decreases innovation (42%). The converse for these three figures – that inequality decreases unemployment and increases growth and innovation – is only believed by 17%, 19% and 22% respectively. As far as we know this represents the first systematic exploration of these beliefs in the American public.

We next explore which type of individuals believe in these inequality externalities. Tables A9-A11 regresses different externality beliefs on sociodemographic variables, trust in government, and general fairness views for our full sample.¹⁶ The results show that individuals who identify as or lean Republican are significantly less likely to believe in negative externalities (that inequality reduces trust, increases crime, etc.) than individuals who identify as or lean Democrat. Furthermore, we find that individuals who believe that the current economic system is unfair (because people do not have the same opportunities to succeed) are much more likely to believe in negative externalities. Respondents who trust the government are also somewhat more likely to believe in negative externalities.

Gender does not have a large correlation with externality beliefs, although it is at times significant; men are significantly less likely to think inequality reduces economic growth and significantly more likely to think inequality can lead to social unrest. Respondents who self-identify as black, however, are significantly less likely to believe most inequality externalities. It is difficult to say why this is; we hypothesize that racial inequalities and their associated externalities may partly supplant the economic dimension for these individuals.

Although only sometimes significant, higher-income respondents generally believe less in inequality externalities. This is particularly noticeable for innovation, where the magnitude of the shift is clearly largest – moving from the lowest (\$0-\$25k) to the highest (\$100,000+) income-bracket decreases the likelihood of thinking inequality reduces innovation by 12 percentage points. This can be founded at least partly by appealing to self-serving beliefs. How respondents believe inequality changes innovation is likely determined at least partly by who the respondent thinks is responsible for more innovation. If the drivers of innovation are the rich, more inequality is unlikely to reduce – and might even increase – innovation. If every citizen is equally likely to innovate, however, high inequality would instead lead to fewer entrepreneurial chances among the poor and thus less innovation overall. If the rich think the rich are more capable innovators, and the poor do not agree in this assessment, it stands to reason that these two groups would have different beliefs about whether inequality affects innovation.

College-educated individuals are consistently more likely to believe in negative externalities. And although not a fully consistent finding, older people generally believe in more inequality externalities. The region of the respondent does not seem to have a significant effect on their beliefs.

¹⁶Note that the set of controls we use was specified in our pre-analysis plan. Here we have also included dummies for each treatment group (not shown) to allow the use of the full sample. The demographic correlations do not change notably if excluding the fairness and government trust variables.

4.2 Information treatment and redistributive preferences

We now turn to the analysis of the information treatments' effect on redistributive preferences.

Table 5: Treatment effects with controls

	(1)	(2)	(3)	(4)	(5)
	RP Index	Wants redistribution	Increase top taxes	Gov. reduce ineq.	Ineq. is serious issue
	b/se	b/se	b/se	b/se	b/se
Crime Ext. Tr.	0.037 (0.036)	0.031 (0.020)	-0.005 (0.021)	0.007 (0.020)	0.020 (0.019)
Trust Ext. Tr.	0.043 (0.037)	0.006 (0.021)	0.004 (0.022)	0.036* (0.020)	0.017 (0.020)
Full Ext. Tr.	0.107*** (0.037)	0.050** (0.021)	-0.012 (0.022)	0.048** (0.020)	0.069*** (0.020)
Fairness Tr.	0.208*** (0.037)	0.052** (0.021)	0.065*** (0.021)	0.067*** (0.020)	0.115*** (0.019)
Leans Republican	-0.635*** (0.030)	-0.190*** (0.017)	-0.210*** (0.016)	-0.264*** (0.016)	-0.249*** (0.016)
Prior belief unfair	0.707*** (0.027)	0.146*** (0.015)	0.260*** (0.015)	0.260*** (0.014)	0.350*** (0.015)
Male	-0.138*** (0.026)	-0.056*** (0.015)	-0.061*** (0.015)	-0.036*** (0.014)	-0.046*** (0.013)
Controls	Yes	Yes	Yes	Yes	Yes
R2	0.391	0.169	0.170	0.293	0.313
Observations	4371.000	4371.000	4371.000	4371.000	4371.000

Note. This table reports results from a regression of different redistributive preference outcomes and the treatment dummies, as well as socio-economic control variables. Controls not listed in the table include trust in government, race, income-group, age-group, education, employment status, geographic region. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

Table 5 shows the effect of the different treatments. While the Crime and Trust externality treatments have only weak and mostly insignificant effects on redistributive preferences, the Full externality treatment has a significant and, for this kind of study, reasonably large effect for three of our four measures of redistributive preferences. The effect on the aggregate redistributive preference index is also significant, showing that the index increases by 11 percent of a standard deviation in response to the treatment.

The results from the externality treatments show that informing individuals about negative effects of inequality can prove persuasive to increase support for redistributive preferences. However, the information is more convincing when it is comprehensive and not insular; in other words, discussing the widespread effects inequality could have on society is more impactful than focusing on any single type of externality.

We do not find any effect of any externality treatments on preferences for top-income taxation. As our other externality treatment effects are strongly robust (to different specifications, various data exclusions, and so on¹⁷), this is somewhat surprising. We hypothesize that respondents may not fully internalize the connection between higher top tax rates and lower inequality. Alternatively, as the active control showed a surprisingly high treatment effect for this variable (see Section 3.3), the non-result from the externality treatments could also be driven by this anomaly.

The fairness treatment shows strong and significant shifts on all measures of redistributive preferences. The effect on the redistributive preference index is approximately two times larger

¹⁷Note in particular that the main treatment effects are robust to the exclusion of the controls. Table A12 replicates the regressions but excludes all control variables. The point-estimates are nearly identical to the ones shown in 5, indicating that it is unlikely that unobservable heterogeneity affects the results in any form.

than that of the full externality treatment (1.94 times the size). This represents our first indication of the relative strength of the fairness and externality arguments. However, caution should be employed in interpreting these numbers directly. Their relative magnitude is determined not only by the intrinsic importance of these arguments in shaping redistributive beliefs, but also by the malleability of these views in respondents and video design choices. We re-visit this topic in Section 4.4.

Related to our previous point, it is notable that we find a strong and significant effect of our fairness treatment on respondents' preferred top tax rate. Comparing this to the insignificant effect of the full-externality treatment, it indicates that explicit information about the evolution of top-incomes can be more effective in gathering support for increasing top taxation than informing about inequality externality effects. If the goal is instead to change broader views on inequality or redistribution, inequality externality arguments may approach the same level of efficacy as fairness arguments.

We also compare the treatment effects with the correlation between redistributive preferences and other variables such as political leaning, gender, or fairness views. As shown in Table ??, we find—as expected—large correlations with political leaning and prior fairness views. Republican-leaning subjects, for example, are 20 percentage points less likely to want the government to redistribute as compared to democratically leaning subjects. The largest treatment effects correspond to about a third of this difference between Republican- and Democrat-leaning subjects, and about a fourth of the difference between those who think the economic system is fair or unfair. One other effect that is often cited is the correlation between gender and redistributive preferences – we replicate the frequent finding (e.g. Alesina and Giuliano, 2011) that men favor less redistribution than women. The effect of our externality treatment is similar in magnitude to this correlation.

4.3 Mechanism

Information treatment and beliefs The externality information treatments were designed to shift subjects' beliefs about inequality's societal effects. In this part, we study whether beliefs were actually moved by our treatment.

Table 6: First-stage effects of treatments

	(1) General neg. ext. b/se	(2) Ineq. incr. crime b/se	(3) Ineq. red. trust b/se	(4) Ineq. red. growth b/se	(5) Society unfair (post) b/se	(6) Rich b/c hard work b/se
Crime Ext. Tr.	0.088*** (0.021)	0.093*** (0.018)	0.059*** (0.020)	0.086*** (0.022)	0.012 (0.020)	-0.018 (0.020)
Trust Ext. Tr.	0.050** (0.021)	0.048** (0.019)	0.096*** (0.020)	0.076*** (0.023)	0.025 (0.020)	-0.028 (0.020)
Full Ext. Tr.	0.085*** (0.021)	0.084*** (0.019)	0.097*** (0.020)	0.062*** (0.023)	0.016 (0.020)	-0.030 (0.020)
Fairness Tr.	0.075*** (0.021)	0.017 (0.019)	0.037* (0.021)	0.033 (0.022)	0.079*** (0.020)	-0.079*** (0.020)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.159	0.084	0.093	0.102	0.239	0.241
Observations	4371.000	4371.000	4371.000	4371.000	4371.000	4371.000

Note. This table reports results from a regression of different externality beliefs and fairness views on the treatment dummies, as well as socio-economic control variables. Controls not listed in the table include political leaning, gender, trust in government, race, income-group, age-group, education, employment status, geographic region. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

Table 6 characterizes the treatment effects on different beliefs. The first column shows the result for the most general externality beliefs (discussed in Section 4.1). All our externality treatments have a significant effect on this outcome, indicating that our treatment was generally successful in shaping subjects' perception that inequalities have negative consequences for society. This is also the case for subjects in the fairness treatment, indicating some limited spillover effects.

We now focus on the specific externality beliefs in columns (2), (3), and (4). Column (2) characterizes the effect of our treatments on the belief that inequality increases crime. The crime video has the strongest positive effect on this belief, which is no surprise. The full externality treatment, which also shows a half-sized version of the same crime data, has almost the same impact. The trust treatment has a marginally positive effect on this belief, indicating a spillover between trust and crime externality beliefs. The fairness video has no significant effect, indicating that the spillovers mentioned above do not come through crime-externality beliefs.

For the trust externality beliefs we find a strong and significant effect for the trust and full externality treatment and a significant but weaker effect for the crime externality treatment. The latter indicates, again, that there is a spillover between crime and trust externality beliefs. The fairness treatment also has a positive but insignificant effect on trust externality beliefs. The growth externality beliefs also follow a similar pattern; the externality treatments impact the respondents' answers, indicating intra-externality spillovers, whereas the fairness treatment does not.¹⁸

Let's turn to the effect of the treatments on fairness views. As shown in columns (5) and (6), the fairness treatment has a significant and strong effect on the view that the distribution of income is unfair and luck-effort beliefs. These treatment effects are similar in magnitude to the first-stage externality treatment effects discussed above. The externality treatments have no effect on fairness views, again indicating that our treatments largely succeeded in preventing spillovers between the two concepts. Indeed, this presents some evidence that the two concepts are relatively independent.

Overall, the first stage treatment effects are strong. Each video increases beliefs in the intended direction by roughly 10 percentage points. These are sizable effects, given that the control means of crime- and trust-externality beliefs are already at 75% and 67% respectively. To put it differently, the treatments help to raise beliefs to near-consensus levels on these matters.

The next question that we can ask is whether our reduced-form treatment effect is mediated through a shift in the first stage beliefs.¹⁹ Our treatment is designed to induce a shift in externality beliefs and fairness views which yields a change in preferences for redistribution. Thus, the magnitude of the treatment effects should be reduced after controlling for externality and fairness views elicited *after* the treatment.

Table A14 in the appendix characterizes the results of such a regression. Compared to the treatment effect of a regression without post-treatment beliefs, the coefficients of the treatment dummies decreased for the treatments that significantly affected redistributive preferences, i.e.

¹⁸We only give specific information about economic growth for the full externality treatment, where we show the cross-country non-correlation between inequality and growth.

¹⁹Note that we did not include this analysis in our pre-analysis plan. Nonetheless, we believe it is of interest for the reader.

the full externality treatment and the fairness treatment. More concretely, the treatment effect of the full-externality treatment on our redistributive preference index was 15 percent of a standard deviation if we do not control for post-treatment externality beliefs and decreases to 7.8 percent of a standard deviation once we control for post-treatment externality beliefs. This implies a reduction in the magnitude of the treatment effect of nearly 50% ($p = 0.002$, t-test). The reduction in the magnitude of the fairness-treatment’s treatment effect is similarly large. Before controlling for beliefs, the magnitude of the Fairness treatment was 29.8 percent of a standard deviation and then decreased to 17.5 percent of a standard deviation ($p=0.000$, t-test). Similar reductions in the treatment effect can be observed for the other redistributive preference. This provides evidence that our reduced form treatment effect is mediated through a shift in beliefs, as intended by the treatment itself.²⁰

Emotional reactions Emotional reactions to the presented video also differ across treatments. At the end of the survey we ask respondents to recall which emotion they felt after watching the video they were shown; respondents were able to answer (potentially several of) anger, interest, surprise, indifference, confusion, or concern. The most striking finding is on anger. Respondents who are shown the fairness video are significantly more likely to respond anger than those who have seen any other video. While the absolute percentage of such respondents is relatively small (11.7%), the increase from the control video (2.8%) is almost two times as large ($p=0.000$, t-test) as for any other video²¹. Subjects in the fairness treatment group are also significantly more likely to respond with *anger* compared to those in the full externality group ($p= 0.001$, t-test). This asymmetry is not carried over for other emotions; the equivalent differences between the fairness and full externality videos are not statistically significant for *concern*, *surprise*, *indifference* and *confusion*.²² This leads us to hypothesize that part of the difference in efficacy between these two videos come from the extent to which they invoke anger in respondents. This will be discussed further in Section 5.

Interaction effects Which individuals reacted particularly strongly to the information treatments? To explore this we pre-specified certain interactions between our treatment dummies and a battery of baseline characteristics. For brevity, most of these pre-specified interactions are discussed in the Appendix. Below we discuss two interactions we deem to be of particular importance.

²⁰A complete disappearance of the treatment effect is unlikely given that beliefs are generally measured with noise and that our first-stage belief measurements are bounded. An example of this would be an individual who already thought inequality increases crime before the survey; after watching the full externality video she becomes increasingly convinced of the importance of this causal channel, which shifts her redistributive preferences. Her response to the first-stage crime question is the same, however: inequality increases crime a lot.

²¹The second-highest video is the full externality video (7.8%); third-highest is the crime video (6.1%); fourth-highest, roughly equal to the control, is the trust video (2.9%).

²²*Interest* is significant at the 5% level. Due to the high levels of *interest* in the active control and trust treatments, where other emotions were less frequently reported, we suspect that this option is to some extent used as a "neutral answer" by respondents who did not have a strong emotional reaction to the video (and thus did not know which other emotion to respond). While respondents were not required to enter any emotion, this is not explicitly stated, and most respondents seem to have thought at least one emotion was required – only 27/3833 (1%) respondents left the question blank. The average number of emotions per respondent is also very similar in all videos (between 1.09 and 1.15). The difference in *interest*, then, most likely follows from a zero-sum effect as the fairness video provokes more emotions overall (specifically anger).

Table 7: Emotional reactions to treatments

	(1) Active control	(2) Crime	(3) Trust	(4) Full externality	(5) Fairness
Anger	2.8%	6.2%	2.9%	7.8%	11.8%
Concern	19.5%	37.2%	28.2%	32.0%	32.9%
Surprise	10.8%	13.9%	12.5%	13.0%	12.9%
Interest	41.5%	37.1%	42.2%	37.8%	34.0%
Indifference	17.7%	17.7%	19.2%	17.5%	17.9%
Confusion	16.9%	4.2%	6.0%	5.8%	4.5%
Observations	390	927	822	806	867

The first compelling heterogeneous treatment effect is through income.²³ While low-income agents ($> \$25k$) react very strongly to the fairness treatment ($\beta = 0.312$, compared to $\beta = 0.208$ in the full sample), they do not react at all to the full externality treatment ($\beta = 0.001$, compared to $\beta = 0.107$ in the full sample). This effect is reversed for top-income individuals ($> \$100k$), who react more strongly to the externality treatment ($\beta = 0.188$) than to the fairness treatment ($\beta = 0.143$). The two treatment effects are essentially equal above $\$50k$;²⁴ the larger size of the fairness treatment effect is driven entirely by individuals with incomes below $\$50k$. This has intriguing consequences for the efficacy of each argument for different income groups; this is further discussed in Section 5.

The second compelling heterogeneous treatment effect is through the self-reported variable that indicates whether subjects learned something new. This is conceptually linked to the preceding discussion of the mechanism; the intuition is that subjects who learned something new are also more likely to adjust their beliefs conditional on receiving the information. Table A17 displays the results of such a regression. As expected, subjects that indicate to have learned something new in the video have significantly higher treatment effects for the redistributive index than those that did not learn something new in the crime, full externality, or fairness treatment groups. This corroborates the findings from the previous section that our reduced form effects can be explained through a shift in actual beliefs.

4.4 Comparing the importance of externality beliefs and fairness views as determinants of redistributive preferences

In the preceding section, we showed that both fairness views and inequality externality beliefs are causal determinants of preferences over redistribution. To benchmark the relevance of externality beliefs in redistributive preferences, we compare the two motives to each other. To that end, we pre-specified three different approaches.

²³Note that we did not pre-specify this interaction; as it is robust and of particular interest we decide to include it.

²⁴In this sample $\beta = 0.111$ for the full externality treatment and $\beta = 0.117$ for the fairness treatment.

Comparing the effects of our information treatment First, as we have already discussed, we can compare the treatment effects of our information treatments characterized by Table 5. The fairness video has about twice the effect on our pre-specified index of redistributive preferences as the full externality video. We can reject equality of the two coefficients at the 5% significance level ($p = 0.012$, t-test).

There are certain issues with considering this as a test for the relative strength of these arguments as a whole. Either fairness or externality beliefs could be less susceptible to change with new information, for example. Alternatively, the specific arguments presented in the videos could be poorly representative of the fairness or externality argument as a whole. To expand and strengthen this comparison we use two additional methods.

Predictive power of externality beliefs, political leaning, and fairness views In the second method we explore the predictive power of each type of belief on redistributive preferences. We run descriptive regressions that include fairness views, externality beliefs, political preferences, and "economist determinants" as regressors, and we compare the explanatory power of these models using the adjusted R^2 . These regressions were pre-specified; in the rare case when they were not this is noted explicitly.

Table 8: Predictive power of various beliefs

	(1)	(2)	(3)	(4)	(5)	(6)
	RP Index	RP Index	RP Index	RP Index	RP Index	RP Index
	b/se	b/se	b/se	b/se	b/se	b/se
Rich because of luck		0.624*** (0.060)				0.401*** (0.057)
Society is unfair		0.620*** (0.059)				0.416*** (0.056)
Belief uneq. countr. worse			0.434*** (0.058)			0.269*** (0.050)
Neg. externality belief			0.640*** (0.058)			0.272*** (0.054)
Leans Republican				-0.429*** (0.084)		-0.245*** (0.072)
Sanders/Harris supporter				0.533*** (0.085)		0.260*** (0.075)
Trusts the government					0.436*** (0.066)	0.131** (0.054)
Taxation reduces work					-0.115* (0.061)	-0.004 (0.048)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R2	0.104	0.382	0.297	0.296	0.148	0.494
Observations	932.000	932.000	932.000	932.000	932.000	932.000

Note. This table reports results from a regression of different redistributive preference outcomes on fairness views, political views, externality beliefs and attitudes towards the government, as well as socio-economic control variables. Controls not listed include gender, race, income-group, age-group, education, employment status, geographic region. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

Table 8 displays the results of these regressions. Note that all regressions only include observations from the baseline control group. Column (1) characterizes a regression that only includes the control vector; Column (2) includes our two main fairness variables: the belief that society is unfair because some get much more than they are entitled to and some get too little,

and the belief that one gets rich due to luck rather than hard work; Column (3) includes our two main externality variables, the belief that unequal countries generally function worse, and the belief that inequality generally affects society in a negative way; Column (4) characterizes a regression that includes the strict political variables of whether the respondent leans Republican, and whether the respondent supports Kamala Harris and Bernie Sanders (rather than Mitt Romney or Donald Trump); Column (5) characterizes a regression that includes two variables economists often consider as potential determinants for redistributive preferences, namely whether the respondent generally trusts the government to do the right thing and whether the respondent agrees that higher taxes make people work much less; Column (6) displays the results of a regression that includes all variables from regressions (1) through (5).

The controls include groupings for gender, age, income, employment status, education and region, which explains only about 12% of variation in the redistributive preference index. All models explain more variation than the only-control regression, as expected. Focusing on the adjusted R^2 , it becomes clear that the fairness variables have the most predictive power for preferences for redistribution with an $R_{adj}^2 = 0.395$. This is followed by the externality beliefs and political views, which are equally predictive at $R_{adj}^2 = 0.311$. Last is the "economist" regression, with a relatively low predictive power of $R_{adj}^2 = 0.166$.

The first three of these models all have relatively strong predictive power. Including two simple fairness, externality or political dummies leads to a 20-30 percentage point increase in explaining variation in redistributive preferences. This is a sizable increase. The fairness module is clearly strongest; the externality or political modules explain about two thirds of the variation the fairness module does. However, it is also clear that the externality module itself explains a sizable portion of variation.

We can also explore whether externality views provide any *additional* predictive power to a fairness-based model of preferences for redistribution. Model (5) indicates that it may; when including all variables into a single regression, all variables remain strong predictors of redistributive preferences except for the taxation reduces work-variable, which is no longer significant. The point estimates drop for all variables, indicating that while they are to some extent correlated with each other, each still captures *independent* correlation with redistributive preferences. This is further reflected in the increase of the adjusted R^2 of nearly 10 percentage points compared to a model that only includes classical fairness views and socio-demographic control variables. We further this analysis in the Appendix by exploring three-variable versions of the fairness and externality modules (without the other two modules); the findings there confirm that the externality variables are weaker predictors than the fairness variables but capture variation that is not explained by the fairness variables.

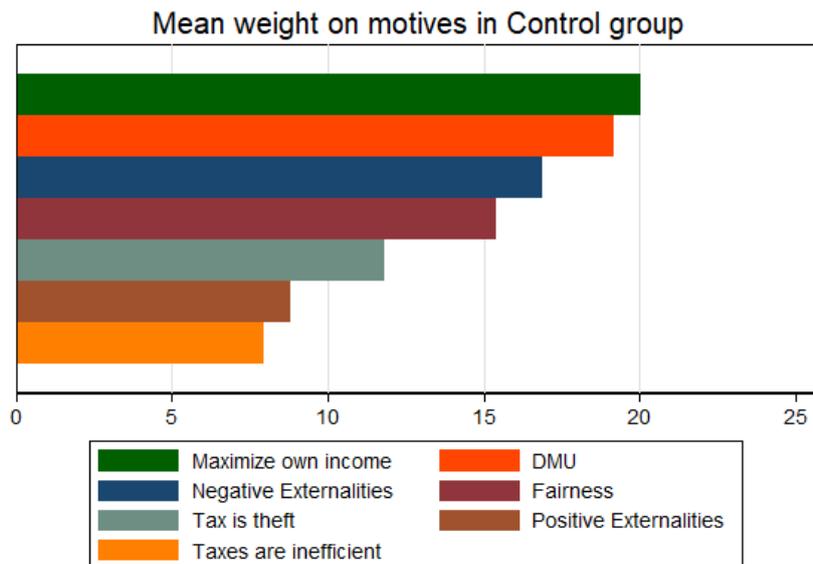
This method on its own does not show that inequality externality beliefs are a determinant for preferences for redistribution. Consider the possibility that externality beliefs are not determinants in themselves but rather simply correlated to redistributive preferences (similar to, for example, being Republican). Intrinsic weaknesses like these are why we explore the topic through different methods, and in particular induce exogeneous variation in our information experiment.

Still, this method allows us to make two separate conclusions. First, externality beliefs are

somewhat weaker predictors of redistributive preferences as compared to classical fairness views in our survey. Second, externality views are similarly important in predicting redistributive preferences as compared to political affiliation. Putting the two together, the horse-race regressions strengthen the conclusion from the experimental analysis; while fairness views are overall stronger determinants of redistributive preferences than externality beliefs, such beliefs remain an important determinant of redistributive preferences.

Ranking motives behind preferences for redistribution Next, we analyze the results from a survey-item conceptualized for this question. In this item subjects were asked to allocate 100 points across different motives behind preferences for redistribution. For example, a respondent who only cares about maximizing her own income should allocate 100 points to “I do not like to give up money”; a respondent who cares equally about inequality’s negative effects on society, the fairness of the post-tax income distribution, and maximizing her own income should allocate 33 points to each motive; etc. The survey-item is particularly useful to assess the relative importance of externality beliefs and fairness views in influencing preferences over redistribution, as it forces the respondents to trade these motives off against each other.

Figure 2: Mean share for each motive behind preferences for redistribution



Question text: *When thinking about your preferred level of redistribution, what matters most to you?*
 Answer option texts: (1) *I don't like to give up my money*, (2) *One dollar is worth more for a poor person than for a rich person*, (3) *Inequality changes society for the worse (more inequality → a worse society through various ways)*, (4) *High inequality is unfair*, (5) *Taxation is theft*, (6) *Inequality changes society for the better (more inequality → a better society through various ways)*, (7) *People work less when they're taxed, so taxation is inefficient*

Figure 2 characterizes the mean weight put on the respective motives. The motive that attains the highest average support is income maximization. This is closely followed by a diminished marginal utility (DMU) argument that a dollar is worth more to the rich than to the poor. Negative externalities (“Inequality changes society for the better (more inequality → a better society through various ways)”) are the third most important motive, attaining an

average of 18 points. A broadly framed fairness motive (“High inequality is unfair”) actually ranks slightly behind the inequality motive and the mean weight is weakly different ($p = 0.08$, t -test). A general aversion against taxation, positive externality concerns, and efficiency concerns attain only weak support from our sample.

What does this tell us about the relative importance of externality concerns and fairness views? First, one should note that inequality externality concerns rank as one of the most important motives within our control group. This is remarkable given that the control group has not faced any other information or questions about inequality externalities before answering this survey module. Second, negative externality concerns are similar in magnitude as broad but explicit fairness views. When adding up positive and negative externality concerns, externality beliefs become the strongest of all motives, even surpassing the selfish motive. If one adds-up the DMU and the fairness motives to one broad other-regarding motive, general externality concerns are between two-thirds and three-quarters as important as other-regarding motives behind redistribution - thus echoing the results from the two methods described above.

This section characterized the relative importance of inequality externality concerns and fairness views on redistributive preferences. We undertake this exercise because fairness views have been identified as a crucial motive behind preferences for redistribution (Almås et al., 2020; Alesina and Giuliano, 2011), thus serving as a useful benchmark. Two consistent patterns emerge from this analysis: (1) Fairness concerns are generally speaking more powerful in predicting preferences for redistribution. This is true when comparing the share of total variation explained by different motives or when studying them at the margin, as we do in our information treatments. (2) Inequality externalities are still strong predictors of redistributive preferences, and they seem to be between half and two-thirds as important as fairness views, broadly speaking. A conservative reading of our 100-points question would argue that their relative importance is higher and should be benchmarked at 70%. This comparison shows that inequality externality beliefs are a relevant and important motive behind redistributive preferences, whose predictive power is comparable to that of political leanings broadly speaking.

5 Further discussion

Preferences for redistribution and polarization There are several structural differences between redistributive arguments based on either (a) fairness concerns or (b) inequality externality concerns. In this section we discuss some implications of these differences. The two most crucial are who is *at fault*, and who is *affected*.

Consider an argument for redistribution based on the unfairness of the income distribution. Whenever one person deserves more of an existing pie, another who already has resources must be deserving of less. Such arguments can be more or less polarized; arguing that the poor deserve more is different from arguing that the rich are rent-seeking, which is again different from assigning blame for the perceived unfair system. However, as many political commentators are prone to point out, any fairness-based argument is founded on opposition and thus polarization. Somewhat stylized, there must be at least always a villain—the rich—or a victim—the poor; often there are both.

Inequality externality concerns are fundamentally different. First, there are fewer traditional villains. Externality arguments are, broadly speaking, about the unintended consequences of economic inequality. These unintended consequences do not have to be the fault of any particular individual, nor do they require “winners and losers” in a traditional sense (though they can have them). If higher inequality leads to less trust, for example, it is undoubtedly unfortunate – but it is difficult to argue that any one portion of society has sole responsibility for such a development. The villain in inequality externality arguments, as far as there is one, is usually *inequality itself*, and the victim is often all of us.

As an example of this difference; arguing that the economic system is unfair can be perceived to discredit those with high incomes. Arguing that higher-inequality societies function worse, on the other hand, is not particularly targeted at anyone.

The importance of this distinction can be summarized in two main points. First, fairness arguments could be more polarizing than externality arguments, creating divisions and fostering anger in a way that externality arguments avoid. Second, these two types of arguments could have different target audiences, with fairness arguments being more effective near the bottom and externality arguments being more broadly applicable.

Our survey results underline these ideas. It is most clearly seen in the likelihood of respondents reporting *anger* after watching the fairness treatment. Some relatively simple information about the evolution of wages and productivity made one out of every eight or nine people report this emotion – significantly higher than for any of our other treatments, even those discussing homicides.²⁵ This indicates the high potential for polarization in fairness arguments. Heterogeneous treatment effects in income also indicate that the externality argument may be more universal. While the fairness treatment was significantly less effective on respondents who earn more than \$50,000 a year, the effect of the full externality treatment was similar across the income distribution – if anything increasing at top incomes.²⁶ General fairness views, such as the view that the economic system is unfair, are also significantly more common among low-income individuals, both in our sample and in other surveys (Valero, 2021). While externality views share this trend to some extent, the correlation is generally much weaker, often insignificant or even reversing.

There are two main points to take from this discussion. The first is that it seems likely that, when arguing for more redistribution, there is a trade-off between maximum efficacy (fairness arguments) and low polarization (externality arguments). Politicians and policy leaders who wish to create more demand for redistribution, yet want to keep polarization low, could do well by using externality arguments instead of fairness arguments. We believe this is a notable finding in an increasingly polarized world. The second is that the audience for these arguments may be different; the efficacy of fairness arguments could be disproportionately localized at the bottom, unlike more widely effective externality arguments.

Welfare-theoretical ramifications Welfare theory is often based on individualist utility functions, which usually assumes no relevant externalities. Even if some externalities do exist,

²⁵The equivalent numbers for the three externality treatments is one in 13, 16 and 34 respondents.

²⁶This is in line with theoretical analysis and correlational evidence by Rueda and Stegmueller (2016) who study the relationship between preferences for redistribution and (fear of) crime.

they can usually be ignored either because they are not of a macroeconomic scale or not explicitly economic in nature (and potentially based on welfare-irrelevant concepts such as altruism or jealousy). If economic inequality is an externality, however, it presents difficulties to this framework that most other externalities do not. It is a resource-based externality which is influenced by any individual's resources, largely independent of how they were procured, which exists on a macroeconomic scale. It also does not rely on feelings or other arguments that can be disregarded on philosophical grounds.²⁷ Beyond rare exceptions (e.g. Thurow (1971); Alesina and Giuliano (2011); Støstad and Cowell (2020)) this has been largely ignored in economic theory, likely because causal evidence of inequality's societal effects is empirically difficult to produce.²⁸ This paper shows that the vast majority of individuals believe that economic inequality has such externalities and that they are of a significant magnitude. As such, our results indicate that welfarist theory must more seriously engage with the possibility that economic inequality is a significant and potentially large externality to be taken account of in such models.

6 Conclusion

This paper marks the first positive analysis of individuals' inequality externality beliefs as a determinant for redistributive preferences. Using a representative survey of 4,371 U.S. citizens we find that individuals believe inequality affects society through various ways, and that individuals largely believe that inequality has *negative* rather than *positive* effects on society. A large majority of individuals believe economic inequality increases crime (76%), decreases trust (68%), decreases economic growth (52%), for example. In collecting these and other data points, this paper has thus created the first extensive database of inequality externality beliefs in any country.

The work has also shown that inequality externality beliefs are a strong determinant for redistributive preferences. An exogenously provided information treatment was used to conclusively prove this; an information treatment showing comprehensive information about inequality externalities shifted individuals' views about redistributive preferences a significant amount. This information treatment and two other methods all indicate that externality beliefs are between a half to two-thirds as important as fairness beliefs in determining redistributive preferences. As such, this paper presents the first strong evidence that individuals' beliefs about how inequality affects society is impactful for their redistributive preferences.

The work further discussed the main differences between fairness arguments and inequality externality arguments. The three main distinguishing differences were argued to be the overall efficacy of the argument first, the potential polarization of the argument second, and the target audience of these arguments third. Generally speaking, fairness arguments are somewhat more effective than externality arguments. However, while fairness arguments necessarily create opposition – by pointing out who does or does not deserve their incomes, for example – externality arguments focus on a shared enemy of inequality's unintended consequences. As such, fairness arguments are more prone to polarization and have a more variable efficacy across the income distribution than externality arguments. Survey results back up this argument; the

²⁷The main other externality that meet all these requirements is global climate change.

²⁸These difficulties are intrinsic, such as the lack of exogenous variation in inequality; the difficulties would remain even if externality effects were large.

fairness treatment lead to more anger in respondents and was more effective on lower income individuals. In addition, fairness views are more heavily correlated to income than externality beliefs. Overall, these two types of arguments have structural differences that policy makers and economists would do well to note.

Finally, these results have a broader dimension of academic and policymaking value. When economic inequality is an externality, the core problem of economics becomes not just to maximize income efficiently but also to find the correct trade-off between more income and less inequality. What amount of resource inequality is safe and sustainable? Should we limit top incomes entirely? These questions are relevant questions when inequality is an externality and go beyond simple egalitarianism. Accepting inequality externalities as real and serious presents trade-offs that are much more complex than those posed in the existing literature around redistributive preferences. We hope further work will explore these issues thoroughly.

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A Tables

Table A1: Balance table for posterior externality beliefs

Variable	(1) Passive Control	(2) Active Control	(3) Difference
General neg. ext.	0.582 (0.494)	0.614 (0.487)	0.032 (0.032)
Ineq. incr. crime	0.757 (0.430)	0.761 (0.427)	0.005 (0.028)
Ineq. red. trust	0.669 (0.471)	0.698 (0.460)	0.029 (0.031)
Ineq. incr. growth	0.190 (0.392)	0.193 (0.395)	0.003 (0.026)
Society is unfair (post)	0.587 (0.493)	0.609 (0.489)	0.022 (0.033)
Rich because of hard work	0.392 (0.489)	0.383 (0.487)	-0.009 (0.032)
Observations	538	394	932

Note. This table represent mean (standard deviations) for posterior externality beliefs of respondents in the active (column 1) and passive (column 2) control groups. Column (3) characterizes the difference across the two. *Significance levels:* *10%, **5%, ***1%.

Table A2: Balance table for prior views and values

Variable	(1) Passive Control	(2) Active Control	(3) Difference
Prior belief fair	0.481 (0.500)	0.492 (0.501)	0.011 (0.033)
Belief uneq countr. worse.	0.584 (0.493)	0.617 (0.487)	0.033 (0.032)
Trusts the government	0.288 (0.453)	0.327 (0.470)	0.039 (0.031)
Belief work less if tax	0.400 (0.490)	0.376 (0.485)	-0.024 (0.032)
Observations	538	394	932

Note. This table represent mean (standard deviations) for posterior fairness views of respondents in the active (column 1) and passive (column 2) control groups. Column (3) characterizes the difference across the two. *Significance levels:* *10%, **5%, ***1%.

Table A3: Balance table for observable characteristics

Variable	(1) Passive Control	(2) Active Control	(3) Difference
Leans Republican	0.532 (0.499)	0.492 (0.501)	-0.039 (0.033)
Prior belief unfair	0.519 (0.500)	0.508 (0.501)	-0.011 (0.033)
Trusts the government	0.288 (0.453)	0.327 (0.470)	0.039 (0.031)
Male	0.498 (0.500)	0.495 (0.501)	-0.003 (0.033)
Black	0.087 (0.283)	0.081 (0.274)	-0.006 (0.018)
Neither black or white	0.162 (0.369)	0.107 (0.309)	-0.055** (0.022)
Income: 0-25k	0.214 (0.410)	0.236 (0.425)	0.022 (0.028)
Income: 25-50k	0.331 (0.471)	0.249 (0.433)	-0.082*** (0.030)
Income: 50-100k	0.257 (0.437)	0.312 (0.464)	0.056* (0.030)
Income: 100k and more	0.199 (0.400)	0.203 (0.403)	0.004 (0.027)
Age 30-39	0.164 (0.370)	0.188 (0.391)	0.024 (0.025)
Age 40-49	0.182 (0.386)	0.150 (0.357)	-0.032 (0.025)
Age 50-59	0.128 (0.335)	0.147 (0.355)	0.019 (0.023)
Age 60-69	0.175 (0.380)	0.162 (0.369)	-0.012 (0.025)
Age 70 and above	0.206 (0.405)	0.223 (0.417)	0.017 (0.027)
4-year college degree or more	0.459 (0.499)	0.513 (0.500)	0.054 (0.033)
Unemployed	0.099 (0.298)	0.107 (0.309)	0.008 (0.020)
Outside the labor force	0.457 (0.499)	0.431 (0.496)	-0.026 (0.033)
West	0.258 (0.438)	0.206 (0.405)	-0.053* (0.028)
North-East	0.138 (0.345)	0.190 (0.393)	0.053** (0.025)
Midwest	0.238 (0.426)	0.228 (0.420)	-0.009 (0.028)
Observations	538	394	932

Note. This table represent mean (standard deviations) for socio-demographic variables of respondents in the active (column 1) and passive (column 2) control groups. Column (3) characterizes the difference across the two. *Significance levels:* *10%, **5%, ***1%.

Table A4: Balance table Trust vs. Control

Variable	(1) Control	(2) Crime	(3) Difference
Leans Republican	0.515 (0.500)	0.525 (0.500)	0.010 (0.023)
Prior belief unfair	0.514 (0.500)	0.529 (0.499)	0.016 (0.023)
Trusts the government	0.305 (0.461)	0.285 (0.452)	-0.020 (0.021)
Male	0.497 (0.500)	0.466 (0.499)	-0.031 (0.023)
Black	0.085 (0.279)	0.095 (0.294)	0.011 (0.013)
Neither black or white	0.138 (0.346)	0.128 (0.334)	-0.011 (0.016)
Income: 0-25k	0.223 (0.417)	0.235 (0.424)	0.012 (0.019)
Income: 25-50k	0.296 (0.457)	0.267 (0.443)	-0.029 (0.021)
Income: 50-100k	0.280 (0.449)	0.307 (0.461)	0.026 (0.021)
Income: 100k and more	0.201 (0.401)	0.192 (0.394)	-0.009 (0.018)
Age 30-39	0.174 (0.379)	0.158 (0.365)	-0.016 (0.017)
Age 40-49	0.168 (0.374)	0.166 (0.372)	-0.002 (0.017)
Age 50-59	0.136 (0.343)	0.144 (0.351)	0.007 (0.016)
Age 60-69	0.170 (0.375)	0.182 (0.386)	0.013 (0.018)
Age 70 and above	0.214 (0.410)	0.211 (0.408)	-0.002 (0.019)
4-year college degree or more	0.482 (0.500)	0.498 (0.500)	0.017 (0.023)
Unemployed	0.102 (0.303)	0.093 (0.291)	-0.009 (0.014)
Outside the labor force	0.446 (0.497)	0.426 (0.495)	-0.021 (0.023)
West	0.236 (0.425)	0.269 (0.444)	0.033 (0.020)
North-East	0.160 (0.367)	0.166 (0.372)	0.006 (0.017)
Midwest	0.234 (0.424)	0.175 (0.380)	-0.059*** (0.019)
Prior belief unfair	0.514 (0.500)	0.529 (0.499)	0.016 (0.023)
Belief work less if tax	0.389 (0.488)	0.372 (0.484)	-0.018 (0.022)
Trusts the government	0.305 (0.461)	0.285 (0.452)	-0.020 (0.021)
Belief pay less than prod.	0.734 (0.442)	0.741 (0.439)	0.007 (0.020)
Belief uneq countr. worse.	0.598 (0.491)	0.643 (0.479)	0.045** (0.022)
Observations	932	933	1,865

Note. This table represents mean (standard deviations) for pre-treatment beliefs and characteristics in the Control (column 1) and Crime (column 2) groups. Column (3) characterizes the difference across the two. *Significance levels:* *10%, **5%, ***1%.

Table A5: Balance table Trust vs. Control

Variable	(1) Control	(2) Trust	(3) Difference
Leans Republican	0.515 (0.500)	0.527 (0.500)	0.012 (0.024)
Prior belief unfair	0.514 (0.500)	0.526 (0.500)	0.012 (0.024)
Trusts the government	0.305 (0.461)	0.325 (0.469)	0.020 (0.022)
Male	0.497 (0.500)	0.476 (0.500)	-0.020 (0.024)
Black	0.085 (0.279)	0.103 (0.304)	0.018 (0.014)
Neither black or white	0.138 (0.346)	0.127 (0.333)	-0.011 (0.016)
Income: 0-25k	0.223 (0.417)	0.227 (0.419)	0.003 (0.020)
Income: 25-50k	0.296 (0.457)	0.320 (0.467)	0.024 (0.022)
Income: 50-100k	0.280 (0.449)	0.282 (0.450)	0.002 (0.022)
Income: 100k and more	0.201 (0.401)	0.171 (0.377)	-0.030 (0.019)
Age 30-39	0.174 (0.379)	0.172 (0.378)	-0.002 (0.018)
Age 40-49	0.168 (0.374)	0.166 (0.372)	-0.002 (0.018)
Age 50-59	0.136 (0.343)	0.145 (0.353)	0.009 (0.017)
Age 60-69	0.170 (0.375)	0.164 (0.370)	-0.006 (0.018)
Age 70 and above	0.214 (0.410)	0.213 (0.410)	-0.000 (0.020)
4-year college degree or more	0.482 (0.500)	0.468 (0.499)	-0.014 (0.024)
Unemployed	0.102 (0.303)	0.099 (0.299)	-0.003 (0.014)
Outside the labor force	0.446 (0.497)	0.455 (0.498)	0.008 (0.024)
West	0.236 (0.425)	0.248 (0.432)	0.012 (0.021)
North-East	0.160 (0.367)	0.162 (0.369)	0.003 (0.018)
Midwest	0.234 (0.424)	0.215 (0.411)	-0.019 (0.020)
Prior belief unfair	0.514 (0.500)	0.526 (0.500)	0.012 (0.024)
Belief work less if tax	0.389 (0.488)	0.364 (0.481)	-0.026 (0.023)
Trusts the government	0.305 (0.461)	0.325 (0.469)	0.020 (0.022)
Belief pay less than prod.	0.734 (0.442)	0.772 (0.420)	0.038* (0.021)
Belief uneq countr. worse.	0.598 (0.491)	0.636 (0.481)	0.039* (0.023)
Observations	932	825	1,757

Note. This table represents mean (standard deviations) for pre-treatment beliefs and characteristics in the Control (column 1) and Trust (column 2) groups. Column (3) characterizes the difference across the two. *Significance levels:* *10%, **5%, ***1%.

Table A6: Balance table Full ext. vs. Control

Variable	(1) Control	(2) FullExt	(3) Difference
Leans Republican	0.515 (0.500)	0.507 (0.500)	-0.008 (0.024)
Prior belief unfair	0.514 (0.500)	0.523 (0.500)	0.009 (0.024)
Trusts the government	0.305 (0.461)	0.303 (0.460)	-0.002 (0.022)
Male	0.497 (0.500)	0.497 (0.500)	0.000 (0.024)
Black	0.085 (0.279)	0.091 (0.288)	0.007 (0.014)
Neither black or white	0.138 (0.346)	0.158 (0.365)	0.020 (0.017)
Income: 0-25k	0.223 (0.417)	0.216 (0.412)	-0.007 (0.020)
Income: 25-50k	0.296 (0.457)	0.290 (0.454)	-0.006 (0.022)
Income: 50-100k	0.280 (0.449)	0.335 (0.472)	0.055** (0.022)
Income: 100k and more	0.201 (0.401)	0.158 (0.365)	-0.042** (0.018)
Age 30-39	0.174 (0.379)	0.168 (0.374)	-0.006 (0.018)
Age 40-49	0.168 (0.374)	0.180 (0.385)	0.012 (0.018)
Age 50-59	0.136 (0.343)	0.133 (0.340)	-0.003 (0.016)
Age 60-69	0.170 (0.375)	0.177 (0.382)	0.007 (0.018)
Age 70 and above	0.214 (0.410)	0.188 (0.391)	-0.026 (0.019)
4-year college degree or more	0.482 (0.500)	0.533 (0.499)	0.051** (0.024)
Unemployed	0.102 (0.303)	0.083 (0.276)	-0.019 (0.014)
Outside the labor force	0.446 (0.497)	0.403 (0.491)	-0.043* (0.024)
West	0.236 (0.425)	0.245 (0.430)	0.009 (0.021)
North-East	0.160 (0.367)	0.153 (0.360)	-0.007 (0.017)
Midwest	0.234 (0.424)	0.227 (0.419)	-0.006 (0.020)
Prior belief unfair	0.514 (0.500)	0.523 (0.500)	0.009 (0.024)
Belief work less if tax	0.389 (0.488)	0.350 (0.477)	-0.040* (0.023)
Trusts the government	0.305 (0.461)	0.303 (0.460)	-0.002 (0.022)
Belief pay less than prod.	0.734 (0.442)	0.776 (0.417)	0.042** (0.021)
Belief uneq countr. worse.	0.598 (0.491)	0.616 (0.487)	0.018 (0.023)
Observations	932	809	1,741

Note. This table represents mean (standard deviations) for pre-treatment beliefs and characteristics in the Control (column 1) and Full Externality (column 2) groups. Column (3) characterizes the difference across the two. *Significance levels:* *10%, **5%, ***1%.

Table A7: Balance table Fairness vs. Control

Variable	(1) Control	(2) Fairness	(3) Difference
Leans Republican	0.515 (0.500)	0.526 (0.500)	0.011 (0.024)
Prior belief unfair	0.514 (0.500)	0.500 (0.500)	-0.014 (0.024)
Trusts the government	0.305 (0.461)	0.275 (0.447)	-0.029 (0.021)
Male	0.497 (0.500)	0.540 (0.499)	0.043* (0.024)
Black	0.085 (0.279)	0.096 (0.295)	0.012 (0.014)
Neither black or white	0.138 (0.346)	0.148 (0.355)	0.010 (0.017)
Income: 0-25k	0.223 (0.417)	0.208 (0.406)	-0.016 (0.019)
Income: 25-50k	0.296 (0.457)	0.271 (0.445)	-0.025 (0.021)
Income: 50-100k	0.280 (0.449)	0.321 (0.467)	0.041* (0.022)
Income: 100k and more	0.201 (0.401)	0.201 (0.401)	0.000 (0.019)
Age 30-39	0.174 (0.379)	0.159 (0.366)	-0.014 (0.018)
Age 40-49	0.168 (0.374)	0.175 (0.381)	0.007 (0.018)
Age 50-59	0.136 (0.343)	0.151 (0.359)	0.015 (0.017)
Age 60-69	0.170 (0.375)	0.178 (0.383)	0.008 (0.018)
Age 70 and above	0.214 (0.410)	0.206 (0.405)	-0.007 (0.019)
4-year college degree or more	0.482 (0.500)	0.514 (0.500)	0.032 (0.024)
Unemployed	0.102 (0.303)	0.094 (0.292)	-0.008 (0.014)
Outside the labor force	0.446 (0.497)	0.436 (0.496)	-0.011 (0.023)
West	0.236 (0.425)	0.221 (0.415)	-0.015 (0.020)
North-East	0.160 (0.367)	0.156 (0.363)	-0.004 (0.017)
Midwest	0.234 (0.424)	0.212 (0.409)	-0.022 (0.020)
Prior belief unfair	0.514 (0.500)	0.500 (0.500)	-0.014 (0.024)
Belief work less if tax	0.389 (0.488)	0.354 (0.479)	-0.035 (0.023)
Trusts the government	0.305 (0.461)	0.275 (0.447)	-0.029 (0.021)
Belief pay less than prod.	0.734 (0.442)	0.740 (0.439)	0.006 (0.021)
Belief uneq countr. worse.	0.598 (0.491)	0.576 (0.495)	-0.022 (0.023)
Observations	932	872	1,804

Note. This table represents mean (standard deviations) for pre-treatment beliefs and characteristics in the Control (column 1) and Fairness (column 2) groups. Column (3) characterizes the difference across the two. *Significance levels:* *10%, **5%, ***1%.

Table A8: Definitional text for externality questions

Externality	Additional definition
The amount of crime	<i>Note: When we say the amount of crime we mean the overall crime rate, including homicides, robberies, property crime and more.</i>
The overall level of trust	<i>Note: When we say the total level of trust we mean the strength of a country's social fabric. Some examples are whether most people trust others, whether people cooperate with each other, how many people return lost wallets, and so on.</i>
The amount of social unrest	None
The rate of economic growth	None
The amount of corruption	None
The overall amount of unemployment	None
The overall amount of innovation	None
The overall quality of life	<i>Note: Here we want you to compare between people with the same incomes living in more or less unequal societies.</i>
The overall amount of political polarization	<i>Note: When we say political polarization we mean to what extent people's and politicians' opinions are divided on political issues, as well as how strong these divisions are.</i>
The quality of democratic institutions	<i>Note: When we say the quality of democratic institutions we mean the capable and equitable functioning of the political system, the avoidance of abuses of power, the equality of the rule of law, whether civil liberties are respected, and so on.</i>
The quality of local public goods	<i>Note: When we say the quality of local public goods we mean the quality of things like schools, local government services, parks, youth centers and more.</i>

Table A9: Main correlations of socio-demographic and externality beliefs

	(1)	(2)	(3)	(4)
	General neg. ext. b/se	Ineq. incr. crime b/se	Ineq. red. trust b/se	Ineq. red. growth b/se
Leans Republican	-0.145*** (0.016)	-0.070*** (0.013)	-0.105*** (0.015)	-0.125*** (0.017)
Prior belief unfair	0.291*** (0.015)	0.160*** (0.013)	0.187*** (0.014)	0.225*** (0.016)
Trusts the government	0.013 (0.015)	0.037*** (0.013)	0.023 (0.014)	0.040** (0.017)
Male	-0.005 (0.014)	0.001 (0.012)	0.011 (0.014)	-0.039** (0.015)
Black	-0.104*** (0.025)	-0.114*** (0.024)	-0.090*** (0.024)	-0.050* (0.027)
Neither black or white	-0.050** (0.020)	-0.047*** (0.018)	-0.034* (0.020)	-0.007 (0.022)
Income: 25-50k	0.018 (0.019)	0.019 (0.017)	-0.013 (0.018)	0.008 (0.021)
Income: 50-100k	0.010 (0.020)	-0.003 (0.017)	-0.021 (0.019)	-0.010 (0.021)
Income: 100k and more	-0.024 (0.024)	-0.000 (0.020)	-0.058** (0.023)	-0.048* (0.025)
Age 30-39	0.028 (0.026)	-0.017 (0.023)	-0.049** (0.024)	-0.051* (0.027)
Age 40-49	0.053** (0.025)	-0.005 (0.022)	-0.007 (0.024)	-0.006 (0.027)
Age 50-59	0.085*** (0.027)	0.014 (0.023)	0.012 (0.025)	0.013 (0.028)
Age 60-69	0.090*** (0.026)	0.025 (0.023)	0.014 (0.025)	-0.016 (0.028)
Age 70 and above	0.105*** (0.027)	0.038* (0.023)	0.022 (0.026)	-0.039 (0.029)
4-year college degree or more	0.042*** (0.015)	0.041*** (0.013)	0.056*** (0.014)	0.038** (0.016)
Unemployed	0.026 (0.025)	0.005 (0.022)	0.018 (0.024)	-0.007 (0.027)
Outside the labor force	0.006 (0.017)	0.016 (0.015)	0.007 (0.016)	0.006 (0.018)
West	0.003 (0.018)	-0.000 (0.015)	-0.002 (0.017)	-0.020 (0.019)
North-East	0.004 (0.020)	-0.015 (0.018)	-0.002 (0.019)	-0.015 (0.021)
Midwest	-0.005 (0.018)	-0.015 (0.016)	0.023 (0.017)	-0.026 (0.019)
Constant	0.502*** (0.031)	0.728*** (0.027)	0.680*** (0.029)	0.553*** (0.032)
Controls	Yes	Yes	Yes	Yes
Adjusted R2	0.150	0.071	0.082	0.094
Observations	4371.000	4371.000	4371.000	4371.000

Note. This table reports results from regressions that regress externality beliefs on socio-demographic variables. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

Table A10: Correlations of socio-demographic and externality beliefs, 2

	(1)	(2)	(3)	(4)
	Ineq. red. innovation	Ineq. incr. unrest	Ineq. worsens dem. inst.	Ineq. worsens public goods
	b/se	b/se	b/se	b/se
Leans Republican	-0.099*** (0.025)	-0.102*** (0.015)	-0.143*** (0.023)	-0.108*** (0.024)
Prior belief unfair	0.188*** (0.022)	0.178*** (0.014)	0.212*** (0.021)	0.232*** (0.023)
Trusts the government	0.079*** (0.024)	0.034** (0.015)	-0.031 (0.023)	0.015 (0.023)
Male	-0.004 (0.023)	0.028** (0.014)	0.003 (0.021)	-0.003 (0.022)
Black	-0.118*** (0.040)	-0.118*** (0.025)	-0.086** (0.037)	0.001 (0.038)
Neither black or white	0.006 (0.033)	-0.058*** (0.020)	0.004 (0.029)	0.010 (0.030)
Income: 25-50k	-0.028 (0.030)	0.042** (0.019)	-0.001 (0.028)	-0.022 (0.029)
Income: 50-100k	-0.046 (0.031)	0.021 (0.020)	-0.036 (0.029)	-0.001 (0.030)
Income: 100k and more	-0.123*** (0.037)	0.017 (0.023)	-0.034 (0.034)	-0.068* (0.036)
Age 30-39	-0.079** (0.039)	0.018 (0.026)	-0.030 (0.038)	-0.028 (0.039)
Age 40-49	-0.029 (0.039)	0.073*** (0.025)	0.051 (0.037)	0.000 (0.039)
Age 50-59	-0.103** (0.042)	0.059** (0.027)	0.074* (0.040)	0.060 (0.040)
Age 60-69	-0.081** (0.040)	0.133*** (0.026)	0.119*** (0.039)	0.021 (0.040)
Age 70 and above	-0.104** (0.043)	0.127*** (0.027)	0.091** (0.040)	0.013 (0.042)
4-year college degree or more	0.043* (0.023)	0.070*** (0.014)	0.062*** (0.022)	0.054** (0.022)
Unemployed	-0.050 (0.041)	0.007 (0.025)	0.020 (0.037)	-0.042 (0.038)
Outside the labor force	-0.019 (0.026)	0.021 (0.016)	0.034 (0.024)	-0.000 (0.026)
West	-0.008 (0.028)	-0.020 (0.017)	-0.020 (0.026)	0.029 (0.027)
North-East	0.013 (0.032)	-0.012 (0.020)	-0.008 (0.029)	0.032 (0.031)
Midwest	-0.036 (0.028)	-0.004 (0.018)	-0.051* (0.027)	-0.024 (0.028)
Constant	0.512*** (0.048)	0.540*** (0.030)	0.545*** (0.045)	0.511*** (0.048)
Controls	Yes	Yes	Yes	Yes
Adjusted R2	0.074	0.096	0.095	0.091
Observations	2135.000	4371.000	2177.000	2098.000

Note. This table reports results from regressions that regress externality beliefs on socio-demographic variables. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

Table A11: Correlations of socio-demographic and externality beliefs, 3

	(1)	(2)	(3)	(4)
	Ineq. inc. corruption b/se	Ineq. inc. pol. pol. b/se	Ineq. inc. unemp. b/se	Ineq. dec. QoL b/se
Leans Republican	-0.106*** (0.022)	-0.104*** (0.022)	-0.129*** (0.024)	-0.177*** (0.023)
Prior belief unfair	0.180*** (0.020)	0.131*** (0.021)	0.200*** (0.022)	0.234*** (0.022)
Trusts the government	-0.004 (0.022)	-0.008 (0.022)	0.009 (0.024)	0.017 (0.022)
Male	-0.011 (0.020)	0.022 (0.020)	-0.033 (0.022)	0.037* (0.021)
Black	-0.033 (0.034)	-0.105*** (0.037)	-0.064 (0.040)	-0.065* (0.037)
Neither black or white	0.012 (0.028)	-0.051* (0.030)	-0.016 (0.030)	-0.049 (0.030)
Income: 25-50k	0.017 (0.026)	0.017 (0.028)	0.021 (0.029)	0.079*** (0.029)
Income: 50-100k	-0.030 (0.027)	0.049* (0.028)	-0.029 (0.031)	0.057* (0.030)
Income: 100k and more	-0.010 (0.033)	0.037 (0.032)	-0.067* (0.037)	0.043 (0.035)
Age 30-39	0.031 (0.036)	-0.023 (0.038)	0.016 (0.038)	0.005 (0.037)
Age 40-49	0.041 (0.036)	0.024 (0.038)	0.058 (0.038)	0.035 (0.037)
Age 50-59	0.100*** (0.037)	0.077* (0.040)	0.079** (0.040)	0.023 (0.039)
Age 60-69	0.144*** (0.037)	0.139*** (0.038)	0.005 (0.041)	0.013 (0.040)
Age 70 and above	0.158*** (0.038)	0.167*** (0.039)	0.049 (0.041)	-0.015 (0.041)
4-year college degree or more	0.028 (0.021)	0.091*** (0.021)	0.000 (0.023)	0.043** (0.022)
Unemployed	0.040 (0.034)	0.001 (0.036)	-0.015 (0.038)	0.092** (0.036)
Outside the labor force	0.001 (0.024)	0.001 (0.023)	-0.029 (0.026)	0.065** (0.026)
West	-0.027 (0.024)	-0.000 (0.025)	0.035 (0.027)	0.004 (0.027)
North-East	-0.016 (0.029)	-0.035 (0.029)	-0.013 (0.032)	0.003 (0.029)
Midwest	-0.032 (0.026)	-0.036 (0.026)	-0.032 (0.028)	0.024 (0.027)
Constant	0.627*** (0.043)	0.577*** (0.045)	0.548*** (0.046)	0.481*** (0.045)
Controls	Yes	Yes	Yes	Yes
Adjusted R2	0.075	0.087	0.078	0.122
Observations	2096.000	2102.000	2143.000	2104.000

Note. This table reports results from regressions that regress externality beliefs on socio-demographic variables. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

Table A12: Treatment effects without controls

	(1)	(2)	(3)	(4)	(5)
	RP Index	Wants redistribution	Increase top taxes	Gov. reduce ineq.	Ineq. is serious issue
	b/se	b/se	b/se	b/se	b/se
Crime Ext. Tr.	0.036 (0.046)	0.031 (0.022)	-0.006 (0.023)	0.005 (0.023)	0.022 (0.023)
Trust Ext. Tr.	0.055 (0.047)	0.010 (0.023)	0.005 (0.024)	0.041* (0.024)	0.023 (0.024)
Full Ext. Tr.	0.124*** (0.048)	0.059** (0.023)	-0.014 (0.024)	0.056** (0.024)	0.078*** (0.024)
Fairness Tr.	0.173*** (0.047)	0.042* (0.023)	0.053** (0.023)	0.052** (0.024)	0.102*** (0.023)
Controls	No	No	No	No	No
R2	0.004	0.002	0.002	0.002	0.006
Observations	4371.000	4371.000	4371.000	4371.000	4371.000

Note. This table reports results from regressions that regress preferences for redistribution on treatment variables *without* controlling for other factors. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

Table A13: Treatment effects with controls

	(1)	(2)	(3)	(4)	(5)
	RP Index	Wants redistribution	Increase top taxes	Gov. reduce ineq.	Ineq. is serious issue
	b/se	b/se	b/se	b/se	b/se
Crime Ext. Tr.	0.037 (0.036)	0.031 (0.020)	-0.005 (0.021)	0.007 (0.020)	0.020 (0.019)
Trust Ext. Tr.	0.043 (0.037)	0.006 (0.021)	0.004 (0.022)	0.036* (0.020)	0.017 (0.020)
Full Ext. Tr.	0.107*** (0.037)	0.050** (0.021)	-0.012 (0.022)	0.048** (0.020)	0.069*** (0.020)
Fairness Tr.	0.208*** (0.037)	0.052** (0.021)	0.065*** (0.021)	0.067*** (0.020)	0.115*** (0.019)
Leans Republican	-0.635*** (0.030)	-0.190*** (0.017)	-0.210*** (0.016)	-0.264*** (0.016)	-0.249*** (0.016)
Prior belief unfair	0.707*** (0.027)	0.146*** (0.015)	0.260*** (0.015)	0.260*** (0.014)	0.350*** (0.015)
Trusts the government	0.174*** (0.028)	0.070*** (0.017)	0.016 (0.016)	0.115*** (0.015)	0.050*** (0.015)
Male	-0.138*** (0.026)	-0.056*** (0.015)	-0.061*** (0.015)	-0.036*** (0.014)	-0.046*** (0.013)
Black	0.016 (0.045)	0.081*** (0.028)	-0.124*** (0.026)	0.000 (0.026)	0.066*** (0.023)
Neither black or white	0.077** (0.037)	0.060*** (0.021)	-0.009 (0.021)	0.038* (0.020)	0.022 (0.019)
Income: 25-50k	0.018 (0.036)	-0.011 (0.020)	0.039* (0.020)	0.009 (0.019)	-0.012 (0.018)
Income: 50-100k	-0.084** (0.036)	-0.038* (0.020)	0.008 (0.020)	-0.038** (0.019)	-0.052*** (0.019)
Income: 100k and more	-0.131*** (0.042)	-0.055** (0.024)	-0.004 (0.024)	-0.048** (0.022)	-0.082*** (0.022)
Age 30-39	0.103** (0.046)	0.021 (0.027)	0.050* (0.026)	0.060** (0.025)	0.018 (0.024)
Age 40-49	0.024 (0.046)	-0.014 (0.027)	0.091*** (0.026)	-0.029 (0.025)	-0.013 (0.024)
Age 50-59	-0.046 (0.049)	-0.090*** (0.028)	0.114*** (0.027)	-0.055** (0.027)	-0.036 (0.026)
Age 60-69	-0.170*** (0.048)	-0.147*** (0.028)	0.119*** (0.027)	-0.132*** (0.026)	-0.084*** (0.025)
Age 70 and above	-0.274*** (0.050)	-0.183*** (0.028)	0.112*** (0.027)	-0.225*** (0.027)	-0.098*** (0.026)
4-year college degree or more	-0.041 (0.027)	-0.001 (0.015)	-0.012 (0.015)	-0.029** (0.014)	-0.018 (0.014)
Unemployed	0.029 (0.047)	-0.003 (0.026)	0.032 (0.026)	0.000 (0.025)	0.012 (0.024)
Outside the labor force	-0.029 (0.030)	-0.024 (0.017)	0.046*** (0.017)	-0.021 (0.016)	-0.042*** (0.016)
West	-0.018 (0.032)	-0.016 (0.018)	0.006 (0.018)	0.000 (0.017)	-0.016 (0.017)
North-East	0.113*** (0.036)	0.033 (0.021)	0.057*** (0.020)	0.051*** (0.019)	0.022 (0.019)
Midwest	0.010 (0.032)	-0.017 (0.018)	0.044** (0.018)	-0.010 (0.017)	-0.003 (0.017)
Controls	Yes	Yes	Yes	Yes	Yes
R2	0.391	0.169	0.170	0.293	0.313
Observations	4371.000	4371.000	4371.000	4371.000	4371.000

Note. This table reports results from regressions that regress preferences for redistribution on treatment variables and reporting all controls. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

Table A14: Treatment effects including beliefs as regressors

	(1)	(2)	(3)	(4)	(5)
	RP Index	Wants redistribution	Increase top taxes	Gov. reduce ineq.	Ineq. is serious issue
	b/se	b/se	b/se	b/se	b/se
Crime Ext. Tr.	-0.009 (0.033)	0.021 (0.020)	-0.030 (0.020)	-0.006 (0.019)	0.003 (0.018)
Trust Ext. Tr.	-0.001 (0.034)	-0.004 (0.021)	-0.020 (0.021)	0.022 (0.019)	0.001 (0.019)
Full Ext. Tr.	0.054 (0.034)	0.039* (0.021)	-0.043** (0.021)	0.032* (0.019)	0.050*** (0.019)
Fairness Tr.	0.122*** (0.033)	0.032 (0.021)	0.031 (0.020)	0.034* (0.019)	0.079*** (0.018)
General neg. ext.	0.285*** (0.028)	0.055*** (0.017)	0.127*** (0.018)	0.097*** (0.016)	0.130*** (0.016)
Ineq. incr. crime	0.050 (0.032)	0.030 (0.018)	0.052*** (0.020)	-0.006 (0.018)	-0.004 (0.018)
Ineq. red. trust	0.076** (0.031)	-0.002 (0.018)	0.093*** (0.019)	0.006 (0.017)	0.012 (0.017)
Society is unfair (post)	0.407*** (0.030)	0.110*** (0.017)	0.114*** (0.019)	0.170*** (0.017)	0.191*** (0.018)
Rich because of hard work	-0.367*** (0.029)	-0.088*** (0.017)	-0.138*** (0.018)	-0.163*** (0.017)	-0.139*** (0.017)
Controls	Yes	Yes	Yes	Yes	Yes
R2	0.508	0.197	0.254	0.365	0.396
Observations	4371.000	4371.000	4371.000	4371.000	4371.000

Note. This table reports results from a regression of different redistributive preference outcomes on the treatment indicators and post-treatment inequality beliefs and fairness views, as well as socio-economic control variables. Controls not listed include pre-treatment fairness views, race, income-group, age-group, gender, race, income-group, age-group, education, employment status, geographic region. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

Table A15: Treatment effects interacted with male dummy

	(1)	(2)	(3)	(4)	(5)
	RP Index	Wants redistribution	Increase top taxes	Gov. reduce ineq.	Ineq. is serious issue
	b/se	b/se	b/se	b/se	b/se
Crime Ext. Tr.	0.024 (0.051)	0.049* (0.030)	-0.019 (0.029)	0.014 (0.028)	-0.010 (0.027)
Trust Ext. Tr.	0.012 (0.051)	0.005 (0.031)	-0.012 (0.030)	0.036 (0.029)	-0.011 (0.028)
Full Ext. Tr.	0.010 (0.052)	0.048 (0.032)	-0.088*** (0.030)	0.016 (0.029)	0.039 (0.028)
Fairness Tr.	0.194*** (0.053)	0.072** (0.032)	0.052* (0.030)	0.071** (0.029)	0.085*** (0.028)
Male	-0.198*** (0.051)	-0.041 (0.030)	-0.108*** (0.030)	-0.044 (0.028)	-0.092*** (0.028)
CrimeXmale	0.024 (0.073)	-0.038 (0.041)	0.027 (0.042)	-0.015 (0.040)	0.060 (0.039)
TrustXmale	0.062 (0.075)	0.003 (0.043)	0.032 (0.043)	-0.001 (0.040)	0.056 (0.040)
FullExtXmale	0.196*** (0.075)	0.004 (0.043)	0.153*** (0.043)	0.065 (0.040)	0.060 (0.040)
FairnessXmale	0.030 (0.074)	-0.038 (0.043)	0.029 (0.042)	-0.006 (0.040)	0.059 (0.039)
Controls	Yes	Yes	Yes	Yes	Yes
R2	0.392	0.169	0.173	0.294	0.314
Observations	4371.000	4371.000	4371.000	4371.000	4371.000

Note. This table reports results from a regression of different redistributive preference outcomes on the treatment indicators and their interaction with a male dummy. Controls not listed include pre-treatment fairness views, race, income-group, age-group, race, income-group, age-group, education, employment status, geographic region. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

Table A16: Treatment effects interacted with prior externality belief

	(1)	(2)	(3)	(4)	(5)
	RP Index	Wants redistribution	Increase top taxes	Gov. reduce ineq.	Ineq. is serious issue
	b/se	b/se	b/se	b/se	b/se
Crime Ext. Tr.	0.121** (0.059)	0.062* (0.032)	0.021 (0.035)	0.023 (0.032)	0.068** (0.031)
Trust Ext. Tr.	0.090 (0.059)	0.017 (0.033)	-0.018 (0.035)	0.059* (0.032)	0.072** (0.032)
Full Ext. Tr.	0.137** (0.058)	0.074** (0.033)	0.001 (0.035)	0.030 (0.032)	0.091*** (0.032)
Fairness Tr.	0.220*** (0.056)	0.045 (0.031)	0.069** (0.034)	0.063** (0.031)	0.139*** (0.030)
Crime*Unequal countries function worse	-0.153** (0.074)	-0.054 (0.042)	-0.049 (0.044)	-0.031 (0.041)	-0.086** (0.040)
Trust*Unequal countries function worse	-0.091 (0.075)	-0.022 (0.043)	0.028 (0.045)	-0.042 (0.041)	-0.096** (0.041)
Full Ext*Unequal countries function worse	-0.056 (0.075)	-0.041 (0.043)	-0.025 (0.044)	0.026 (0.041)	-0.040 (0.041)
Fairness*Unequal countries function worse	-0.013 (0.073)	0.014 (0.043)	-0.004 (0.043)	0.010 (0.040)	-0.038 (0.039)
Belief uneq countr. worse.	0.314*** (0.051)	0.081*** (0.030)	0.116*** (0.031)	0.102*** (0.028)	0.153*** (0.028)
Controls	Yes	Yes	Yes	Yes	Yes
R2	0.405	0.173	0.181	0.302	0.323
Observations	4371.000	4371.000	4371.000	4371.000	4371.000

Note. This table reports results from a regression of different redistributive preference outcomes on the treatment indicators and their interaction with pre-treatment externality view. Controls not listed include pre-treatment fairness views, race, income-group, age-group, race, income-group, age-group, education, employment status, geographic region. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

Table A17: Treatment effects interacted with those that say they learned something new in the video

	(1)	(2)	(3)	(4)	(5)
	RP Index	Wants redistribution	Increase top taxes	Gov. reduce ineq.	Ineq. is serious issue
	b/se	b/se	b/se	b/se	b/se
Crime Ext. Tr.	-0.152*** (0.055)	-0.049* (0.029)	-0.052 (0.032)	-0.064** (0.029)	-0.054* (0.029)
Trust Ext. Tr.	-0.046 (0.056)	-0.053* (0.031)	0.033 (0.034)	-0.024 (0.030)	-0.022 (0.030)
Full Ext. Tr.	-0.057 (0.059)	-0.060* (0.032)	-0.009 (0.036)	-0.025 (0.032)	0.011 (0.032)
Fairness Tr.	0.012 (0.057)	0.006 (0.031)	0.028 (0.033)	-0.053* (0.030)	0.036 (0.030)
Learned something new	0.097* (0.053)	-0.010 (0.031)	0.088*** (0.031)	0.033 (0.029)	0.029 (0.030)
Crime*Learned something new	0.220*** (0.077)	0.121*** (0.043)	0.021 (0.044)	0.085** (0.041)	0.090** (0.041)
Trust*Learned something new	0.077 (0.079)	0.090** (0.045)	-0.087* (0.046)	0.069 (0.042)	0.039 (0.043)
FullExt*Learned something new	0.174** (0.080)	0.156*** (0.045)	-0.053 (0.047)	0.082* (0.043)	0.064 (0.044)
Fairness*Learned something new	0.231*** (0.078)	0.071 (0.045)	0.008 (0.045)	0.156*** (0.042)	0.098** (0.041)
Controls	Yes	Yes	Yes	Yes	Yes
R2	0.403	0.176	0.175	0.305	0.320
Observations	4371.000	4371.000	4371.000	4371.000	4371.000

Note. This table reports results from a regression of different redistributive preference outcomes on the treatment indicators and their interaction with self-reported indicator to have learned something new. Controls not listed include pre-treatment fairness views, race, income-group, age-group, race, income-group, age-group, education, employment status, geographic region. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

Table A18: Treatment effects interacted with Republican leaning dummy

	(1)	(2)	(3)	(4)	(5)
	RP Index	Wants redistribution	Increase top taxes	Gov. reduce ineq.	Ineq. is serious issue
	b/se	b/se	b/se	b/se	b/se
Crime Ext. Tr.	0.039 (0.051)	0.068** (0.032)	0.009 (0.029)	-0.026 (0.030)	0.006 (0.028)
Trust Ext. Tr.	0.063 (0.052)	0.033 (0.034)	0.023 (0.029)	0.033 (0.030)	0.002 (0.029)
Full Ext. Tr.	0.192*** (0.051)	0.116*** (0.033)	0.020 (0.029)	0.061** (0.029)	0.079*** (0.028)
Fairness Tr.	0.218*** (0.051)	0.069** (0.033)	0.061** (0.028)	0.069** (0.029)	0.115*** (0.027)
Leans Republican	-0.592*** (0.053)	-0.135*** (0.031)	-0.188*** (0.031)	-0.273*** (0.029)	-0.256*** (0.029)
CrimeXRepublicanLeaning	-0.005 (0.073)	-0.071* (0.041)	-0.028 (0.042)	0.065 (0.040)	0.027 (0.039)
TrustXRepublicanLeaning	-0.039 (0.074)	-0.054 (0.043)	-0.035 (0.043)	0.005 (0.040)	0.028 (0.040)
FullExtXRepublicanLeaning	-0.165** (0.074)	-0.128*** (0.043)	-0.062 (0.043)	-0.027 (0.040)	-0.020 (0.040)
FairnessXRepublicanLeaning	-0.020 (0.073)	-0.034 (0.043)	0.008 (0.042)	-0.003 (0.040)	0.000 (0.039)
Controls	Yes	Yes	Yes	Yes	Yes
R2	0.391	0.171	0.171	0.294	0.313
Observations	4371.000	4371.000	4371.000	4371.000	4371.000

Note. This table reports results from a regression of different redistributive preference outcomes on the treatment indicators and their interaction with an indicator that the respondent leans republican. Controls not listed include pre-treatment fairness views, race, income-group, age-group, education, employment status, geographic region. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

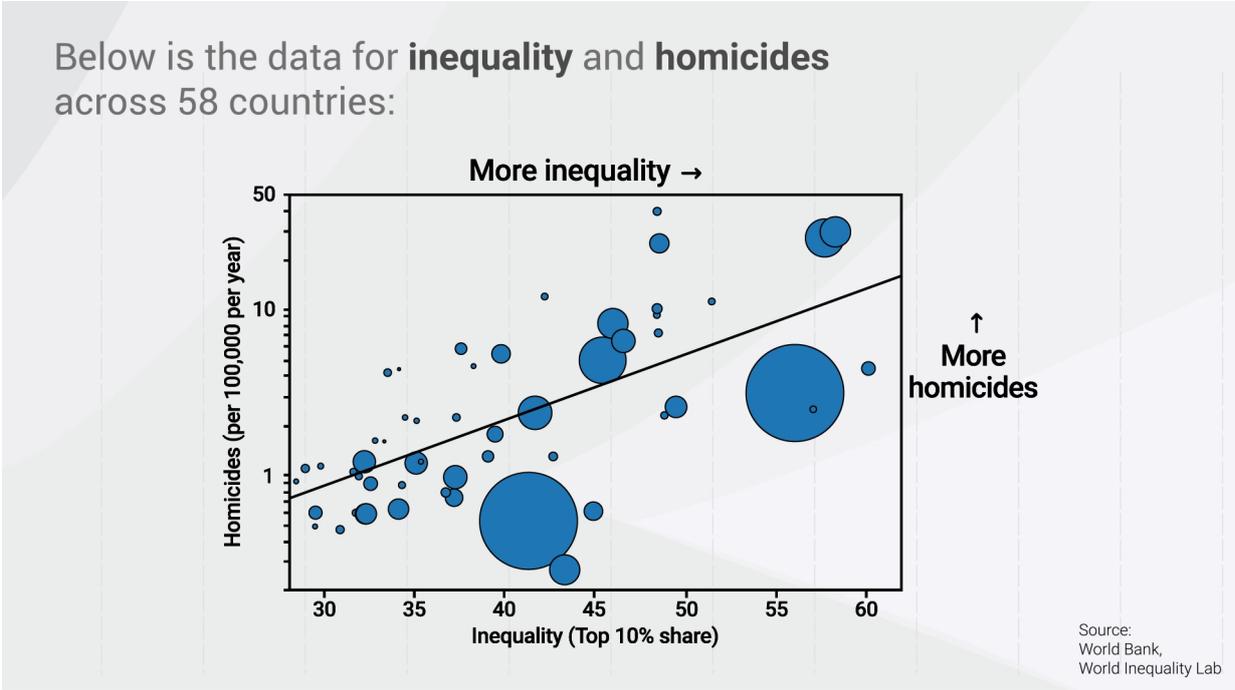
Table A19: Treatment effects interacted with dummy indicating that the subject believes that the current economic system in the US is unfair

	(1)	(2)	(3)	(4)	(5)
	RP Index	Wants redistribution	Increase top taxes	Gov. reduce ineq.	Ineq. is serious issue
	b/se	b/se	b/se	b/se	b/se
Crime Ext. Tr.	0.022 (0.051)	-0.007 (0.027)	0.006 (0.032)	0.024 (0.028)	0.009 (0.028)
Trust Ext. Tr.	0.039 (0.052)	-0.011 (0.028)	0.036 (0.033)	0.036 (0.028)	-0.004 (0.029)
Full Ext. Tr.	0.091* (0.053)	0.038 (0.028)	-0.011 (0.033)	0.041 (0.029)	0.064** (0.030)
Fairness Tr.	0.147*** (0.052)	0.009 (0.028)	0.088*** (0.032)	0.035 (0.028)	0.080*** (0.029)
Prior belief unfair	0.669*** (0.051)	0.103*** (0.030)	0.286*** (0.030)	0.251*** (0.028)	0.322*** (0.028)
CrimeXdPriorUnfair	0.030 (0.073)	0.073* (0.041)	-0.021 (0.042)	-0.031 (0.040)	0.022 (0.039)
TrustXdPriorUnfair	0.008 (0.074)	0.033 (0.042)	-0.062 (0.044)	0.001 (0.040)	0.040 (0.040)
FullExtXdPriorUnfair	0.031 (0.075)	0.024 (0.043)	-0.002 (0.043)	0.013 (0.041)	0.010 (0.040)
FairnessXdPriorUnfair	0.119 (0.073)	0.084** (0.042)	-0.046 (0.042)	0.065* (0.039)	0.068* (0.039)
Controls	Yes	Yes	Yes	Yes	Yes
R2	0.391	0.170	0.171	0.294	0.314
Observations	4371.000	4371.000	4371.000	4371.000	4371.000

Note. This table reports results from a regression of different redistributive preference outcomes on the treatment indicators and their interaction with pre-treatment fairness views. Controls not listed include, political leaning, pre-treatment fairness views, race, income-group, age-group, education, employment status, geographic region. Standard errors are in parentheses. *Significance levels:* *10%, **5%, ***1%.

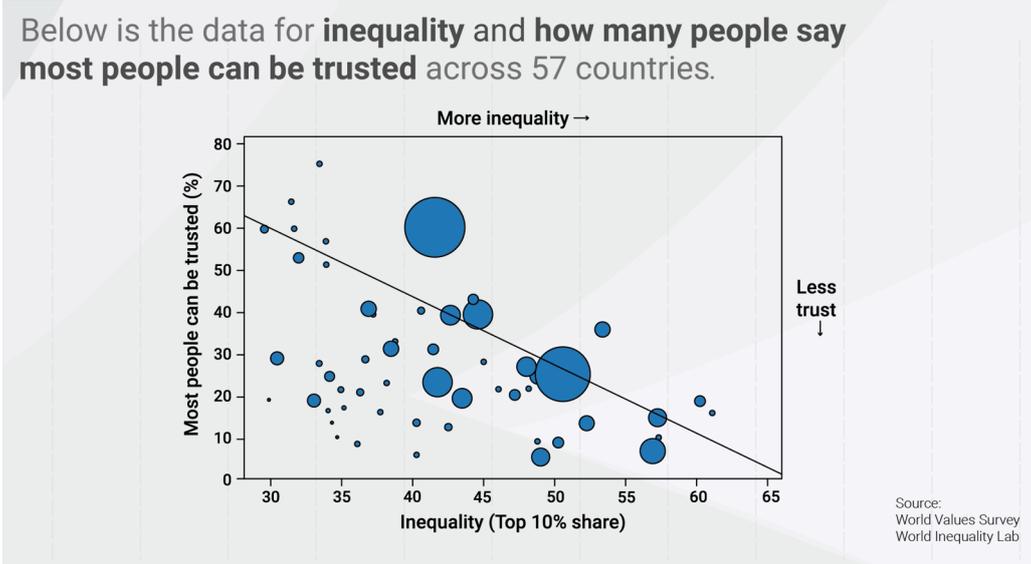
B Figures

Figure B1: Screenshot from the Crime-externality video



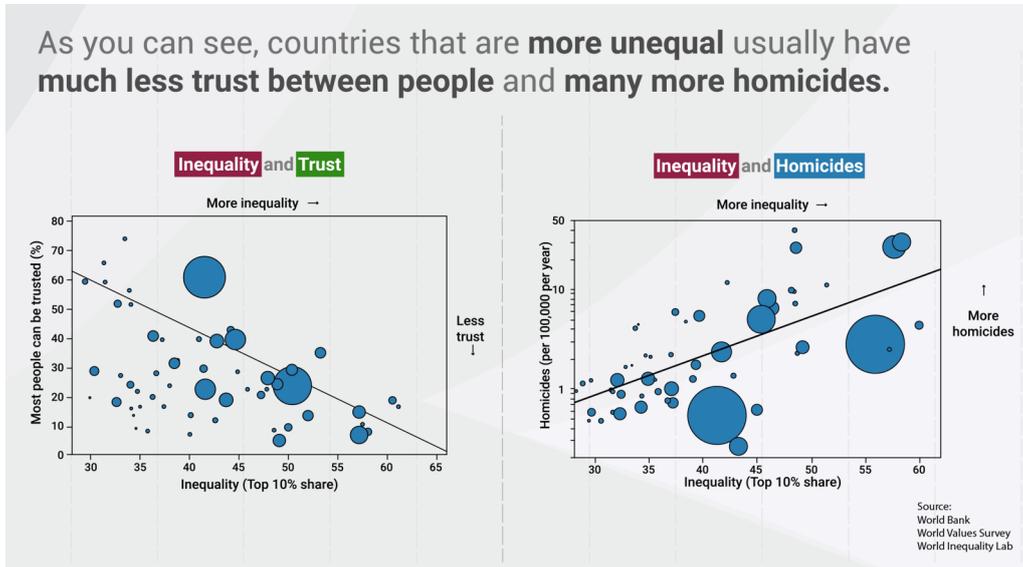
Note. This is a screenshot for the crime externality video. To watch the full video on Youtube, please click on <https://youtu.be/v2M4S0WzwHc>

Figure B2: Screenshot from the Crime-externality video



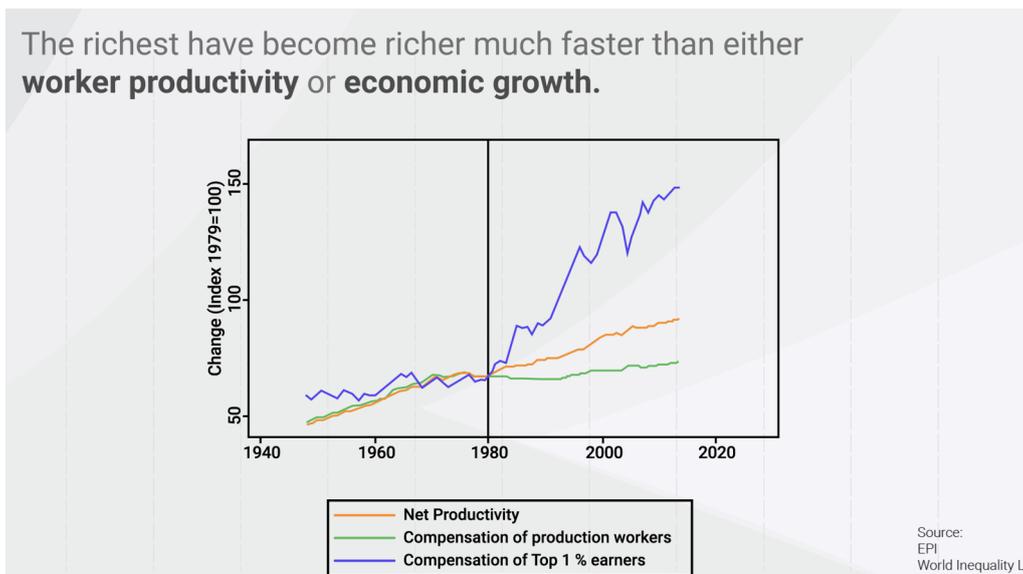
Note. This is a screenshot for the trust externality video. To watch the full video on Youtube, please click on <https://youtu.be/BGK-w5BcltA>

Figure B3: Screenshot from the Crime-externality video



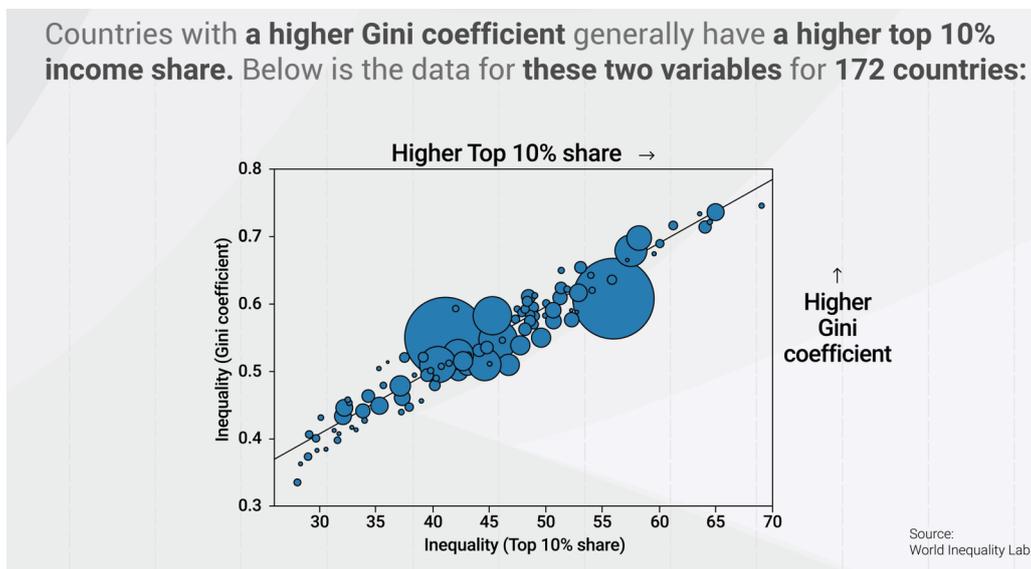
Note. This is a screenshot for the full externality video. To watch the full video on Youtube, please click on <https://youtu.be/-gTkpPEBa74>

Figure B4: Screenshot from the Crime-externality video



Note. This is a screenshot for the fairness video. To watch the full video on Youtube, please click on <https://youtu.be/2kZY144GHnA>

Figure B5: Screenshot from the active control video



Note. This is a screenshot for the active control video. To watch the full video on Youtube, please click on <https://youtu.be/3EelsEIBUcE>