

The Growing Divide: The Case of (Mis)Information and Polarization

Trent McNamara & Roberto Mosquera*

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Abstract

While polarization has become an identifying feature in political markets, little is known about its source, whether information can attenuate it, and its causal impact on behaviors. We run a field experiment to recover its distribution and novelly identify that the rise in polarization is driven by perceptions rather than preferences. We randomly introduce factual information and show this corrects misaligned beliefs. We further estimate that increasing polarization results in an individual being 0.35 s.d. less supportive towards the government, believe the government is less efficient by 0.42 s.d. and are less willing to compromise and trust by 0.43 s.d.

JEL codes: D61, D72, D83, H20

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*McNamara: Economics Department, Texas A&M University, 4228 TAMU, College Station, TX 77843, trent_mcnamara@tamu.edu. Mosquera: Economics Department, Universidad de las Americas, De Los Granados E12-41 y Colimes, Quito, Ecuador, roberto.mosquera@udla.edu.ec. The authors contributed equally to this work. The authors gratefully acknowledge support from the Department of Economics of Texas A&M University. The authors are grateful for comments from Ragan Petrie, Jonathan Meer, and the participants at Advances with Field Experiments 2019. The study was approved by the IRB at Texas A&M University (IRB2018-1633D). This study is registered in the AEA RCT Registry (AEARCTR-0004404). Declarations of interest: none.

1 Introduction

Polarization has become a well-documented feature in political markets in both the United States as well as across the globe. Many studies document the diminishing ideological overlap between political parties, the rise in partisan animosity, an increase in anger towards the government, and an associated decline in trust (Pew Research Center, 2014; Newport and Dugan, 2017; Boxell et al., 2020; Neal, 2018; Webster, 2018). These factors arguably make the 21st century in the United States one of the most polarized environments in its history, potentially making it more challenging to pass socially beneficial policy measures as individuals fail to agree on the actions needed to address economic and social issues.

To date, most research on polarization has largely focused on documenting and defining ways of measuring its magnitude. It is important to acknowledge that polarization is an increasingly complex topic and may entail issues of identity, belonging to a social group, conformity, homophily in social networks, and that because of this complexity there is often not a uniform definition. However, polarization has traditionally been used to refer to a broad set of behaviors related to people’s feelings towards those on the other side of the political spectrum, or to refer to differences in ideological positions, or to the intensity of partisan sorting (Boxell et al., 2017). In this paper, we think of polarization as specifically capturing people’s feelings and perceptions towards the government, which behaves in a way that individuals believe represents themselves or represents those on the other side of the political spectrum, giving way to two hypotheses related to the nature of polarization. Polarization can be driven by different attitudes (i.e., preferences) towards policy issues, government, and society. Alternatively, it can be driven by different perceptions (i.e., beliefs) about reality (Alesina et al., 2020). Empirically, untangling which one is the driving force remains an open question and, given very different policy prescriptions, is of first-order importance to address it. As for the sources responsible for polarization’s drastic increase, the timing of its growth mirrors that of the growth in technology and the Internet, making this coincidence

a natural starting point. Theoretically, this relationship can work in either direction. While the Internet provides a near costless avenue to acquire real-time information instantly, it also enables users to self-segregate ideologically (Mullainathan and Shleifer, 2005). Measuring the causal effect of information on polarization remains largely unanswered.

In this paper, we address these unanswered questions by studying whether differences in preferences or differences in beliefs are polarization’s driving force and whether factual information can close polarization gaps. We document the results of a large-scale field experiment on a community of active online U.S. individuals. We recruited a sample of 1,643 Amazon Mechanical Turk (MTurk) users and elicit their preferred spending allocation between two major federal expense categories (military and welfare) as well as their belief about the actual allocation. Democrats and Republicans have polar views on the willingness to support government programs (Oldendick and Hendren, 2018), and we exploit these differences to design a novel measure of political polarization that captures the interactions between preferences, expectations, and reality and estimate its distribution. Following this, we randomize the provision of factual information to identify whether misaligned expectations can be corrected. Finally, this treatment can either exogenously increase or decrease polarization allowing us to test its impacts. We explore how these changes impact individual behavior across three main categories pertaining to civic engagement and the political process: i) political support, ii) views about government efficiency, and iii) the willingness to trust and compromise.

We contribute to the literature in a variety of ways. First, we find that misaligned expectations (rather than preferences) are the source of divide among polarized individuals. Using differences between an individual’s expectations, preferences, and reality, we show that individuals have identical preferences, but strikingly different beliefs about reality. This is a novel result and is consistent with the theory that polarized views of the government are driven by people perceiving the same reality through a different lens (Alesina et al., 2020). This result indicates that one explanation for the drastic rise in polarization in

the United States is not that preferences are approaching their polar extremes, but rather people form more extreme perceptions of the current state of affairs. In a world of instant (mis)information, sound bites, and headlines, it is easy to form biases and opinions that may not be factually accurate, pushing individuals towards more extreme positions. Showing that differences in beliefs are the source of polarization has important policy implications as providing accurate information could be a cost-effective way to close the polarization gap.

Our second contribution is to identify whether the provision of accurate information can act as a policy remedy to attenuate the total divergence. Current literature regarding information provision typically relies on eliciting a single measure about beliefs or preferences and a treatment that updates them (Cruces et al., 2013; Roth et al., 2017; Lergetporer et al., 2018; Kuziemko et al., 2015). One complication to treatments of this type is that outcomes could be endogenous to either beliefs or preferences. We overcome this challenge by eliciting both measures allowing us to consider changes in either of these measures. We show that providing factual information about actual government expenditures to individuals who have a less (more) favorable perception of the government than what they should, positively (negatively) impacts this group's belief that the government represents their spending preferences by 13 points (12 points) on a scale of 0 to 100. These changes effectively close the polarization gap. While prior beliefs can be shaped and influenced by many different factors, we show that providing this new lens to both under/over-polarized individuals encourages them to update their beliefs about the government in a Bayesian-like manner.

Our final contribution is to provide comprehensive evidence describing how changes in polarization can directly impact a broad set of beliefs pertaining to civic engagement. Current research shows that polarization impacts a multitude of outcomes including the ability to reason (Gampa et al., fcm). More broadly, misinformation and biases are prevalent in society and reducing these differences has significant impacts (Cruces et al., 2013; Tella et al., 2012; Karadja et al., 2017; Kuziemko et al., 2015; Roth et al., 2017; Alesina et al., 2018a,b). There are also various experiments that test the impact of information provision

(Lergetporer et al., 2018). In our experiment, we show that for individuals who learn the government is behaving closer to their preferences than they initially thought, there are no significant changes in civic engagement. For individuals who learn the government is behaving worse than what they expected, we find a significant reductions of 0.35 s.d. in support towards the government, 0.42 s.d. in beliefs about government efficiency, and 0.43 s.d. in the willingness to compromise or trust. Differences between the two groups are consistent with an emerging literature showing asymmetric responses between positive and negative information, where negative information has a greater impact on attitudes and beliefs than does positive information (Soroka, 2006). Beyond ensuring and testing for data quality, this asymmetric response suggests that experimenter demand effects do not drive results. If participants simply change their answers towards the direction of their intervention, then this would not lead to the asymmetries displayed by our data.

Overall, our results have important implications in political markets. The efficient provision of public goods and policies requires the alignment of voter’s preferences with the trade-offs politicians face to access office. In the United States and in many other countries around the world, political polarization threatens this alignment by making it more challenging to pass socially-beneficial policy measures by shifting civic engagement towards negative and extreme actions. However, there is a low-cost alternative to close polarization gaps. Our results imply that providing accurate information can moderate these perceptions and close the polarization gap by moving 45% of the population closer to the middle. In terms of generalizability of our empirical results, we follow the List (2020) SANS conditions in our reporting. First, in terms of selection, our sample is a subset of actively online individuals from within the United States. In particular, MTURK is a crowd-sourcing website allowing us to sample from remotely located “crowd-workers” from across the United States to complete discrete on-demand surveys.¹ In terms of attrition, we have near perfect com-

¹See Appendix Figure A.1 for a distribution of geocoded responses as determined by an individual’s IP address.

pliance (91.5%) indicating that nearly everyone who started the survey also completed it.² Considering naturalness of the choice task, setting, and time frame, we use a natural field experiment, thus our setting is one in which individuals are engaged in a natural and familiar task and are not placed on artificial margins.³ Finally, in terms of scaling our insights to the larger US population, the signs and magnitudes of the unweighted and weighted results are by and large comparable.⁴ However, it is important to note that we are only able to weight based on observable characteristics.

The rest of the paper is organized as follows. Section 2 describes the experimental design. Section 3 discusses our estimation strategy used to identify both the impact of information on representation and the effect of polarization on political beliefs. Section 4 documents our main results. Section 5 continues with robustness checks on our main findings. Section 6 concludes.

2 Experimental Design

2.1 Overview of Experiment

Our experimental design can be summarized in two steps. First, we recruited participants from an active online population (Amazon Mechanical Turk, i.e., MTurk) and directed them to an online survey. Second, in this survey, we recovered an empirical distribution of polarization using a novel approach allowing us to estimate how sizeable political polarization is. Then, we randomly assigned an information treatment to quantify how much information impacts an individual’s degree of polarization. Our design allows us to difference out any changes in distribution patterns between individuals who either received or did not receive information. Finally, we exploit the exogenous variation in polarization to investigate the impact that it has on a suite of outcomes pertaining to civic engagement, including whether

²For those who did not complete the survey, attrition is not related to any observable characteristics.

³See Harrison and List (2004).

⁴See Appendix Table A.4.

an individual’s support for the government, an individual’s willingness to compromise and trust others, and views on government efficiency, fraud, and waste.

2.2 Recruitment

Recruitment occurs in three waves. To test for statistical power, we ran a pilot wave ($n = 100$) in May 2019. Then, in July 2019, we run a second wave ($n = 446$). In these waves, we randomize treatment and estimate effects. Finally, we run a third wave ($n = 1,097$) beginning in September 2019 intended to detect smaller behavioral changes that individuals may report. In our main estimates, we pool all three waves ($n = 1,643$). We use Amazon’s Mechanical Turk population (MTurk) in order to crowd-source responses from an active online community. This also gives us a representative sample from across the United States throughout 2019.⁵

2.3 Survey Experiment

The first part of our experiment is designed to test the theoretical model developed in Alesina et al. (2020). Conceptually, we think of individuals as holding perceptions for a variety of topics. These perceptions are a function of various signals and information. Perceptions are dynamic and depend on updating and learning. People receive various signals and pieces of information which are ultimately weighted and translated into perceptions. When signals are costless, rational rules to update these perceptions depend on the prior level of all perceptions as well as their weights. Hence, this first part of our experiment can be thought of as a direct test of this model which identifies whether individuals update their perceptions in a Bayesian manner.

Upon starting the survey, participants are asked to consent followed by a variety of demographic questions, including gender, age, political orientation, and political representation. After this, we take the standard question format in the information literature to elicit

⁵Appendix Figure A.1 reports geocoded responses by IP address.

preferences and beliefs (Kuziemko et al., 2015; Alesina et al., 2018b) and sequentially ask participants two things for two different types of government spending.⁶ First, for a given \$100, how much they would prefer to have allocated between the two categories.⁷ This provides a measure of an individual’s preferred spending allocation, P_i . Second, how much they believe is being allocated to each category.⁸ This gives a measure of an individual’s expectations, E_i , capturing how she thinks the government is distributing between the two categories. Panels (a) and (b) of Appendix Figure A.2 show the survey questions used to collect this information. The difference between P_i and E_i provides an initial measure of polarization. In practice, the two categories that participants choose between are “Welfare and Government Assistance Programs” and “Military, Defense, and Homeland Security.” We chose these categories because they draw extreme views despite being funded similarly (Oldendick and Hendren, 2018).

After this, we randomly assign individuals into either a treatment or control group. The control group is showed their difference between P_i and E_i , as in Panel (c) of Appendix Figure A.2, and is then required to finish answering outcome questions. The treatment group is similarly showed their difference between P_i and E_i , but is also assigned an information intervention described below.

Our experimental design induces either an increase or a decrease in an individual’s degree of polarization. The directional change is dependent on the individual’s initial beliefs and expectations regarding the allocation of government spending. We randomize an information intervention that reveals to treated participants the real allocation, R , between the two categories.⁹ Panel (d) of Appendix Figure A.2 shows an example of how this information

⁶We randomize the ordering of this elicitation and test for any order effects. We do not find any significant differences.

⁷Specifically, participants are asked “Suppose you are responsible for planning the federal budget. The government receives an additional \$100 and asks you to distribute it between two categories. How would you like to distribute \$100?”

⁸Specifically, participants are asked “Think about individuals in the executive and legislative branches responsible for planning the current federal budget. The government receives an additional \$100 and asks them to distribute it between two categories. How do you think they would distribute \$100?”

⁹In practice, the Congressional Budget Office reports that in 2017, for a given \$100, \$44 were allocated towards Welfare Programs and \$56 towards Military, Defense, and Homeland Security. This information

is revealed to participants. By doing so, depending on an individual’s initial P_i and E_i , participants are treated with either a reduction in polarization, an increase in polarization, or no change in polarization. Figure 1 summarizes these conditions. In the case that $|P_i - E_i| > |P_i - R|$, treated individuals will experience a reduction in polarization that is equal to $|P_i - E_i| - |P_i - R|$. If $|P_i - E_i| < |P_i - R|$, treated individuals will experience an increase in polarization equal to $|P_i - E_i| - |P_i - R|$. In cases when $E_i < P_i < R$ or $E_i > P_i > R$, an individual could be treated to either an increase or a decrease depending on the respective magnitudes of P_i and E_i . Finally, anytime $E_i = R$ an individual will not experience a change.

2.4 Outcomes Questionnaire

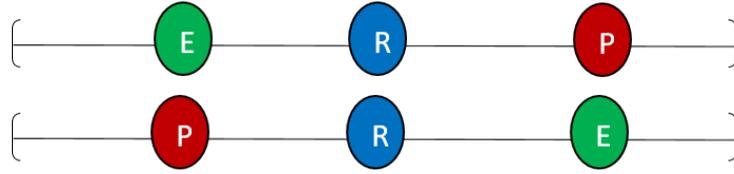
While the first part of our experiment tests whether individuals are Bayesian in regards to their perceptions, here in the second part we identify more broadly how changes in perceptions impact secondary behaviors pertaining to civic engagement and the political process. That is, we go beyond the theoretical predictions of Alesina et al. (2020) and test explicitly i) whether changes in perceptions impact behaviors, and ii) how these changes in perceptions impact behaviors.

All participants completed an outcome questionnaire that collects information on three categories: how well the government represents an individual’s preferences and general feelings of approval and support towards the government, survey and behavioral measures of trust and compromise, and an individual’s perception of how efficient the government is. A full description of each outcome question is in Appendix Section C.

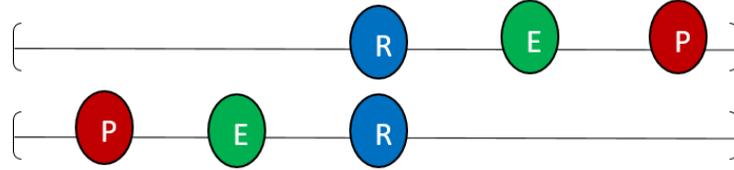
We collected the following information across three main outcome categories. Our first main category captures beliefs about government representation and support. Before treatment, we elicited an individual’s perspective on how well they think the government represents their preferences overall. After treatment, we re-elicited these preferences by asking the same questions. We also obtain additional post-treatment measures of political support. Our

corresponds to an average and provides a reference point for individuals to adjust their beliefs. There is evidence that individuals react stronger to average changes than to marginal changes (Ito, 2014).

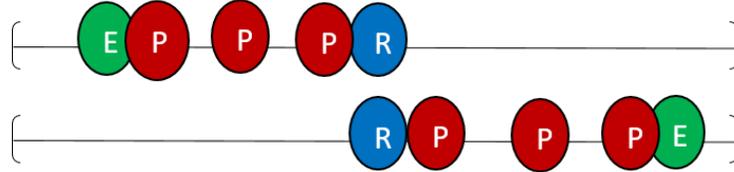
Figure 1: Treatment Descriptions



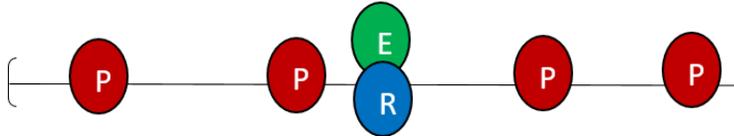
(a) Reduce Polarization



(b) Increase Polarization



(c) Reduce or Increase Polarization



(d) No Change in Polarization

Notes: Participants reveal their preferred distribution of spending, P_i , and what they currently expect the government to be allocating, E_i . This difference, $|P_i - E_i|$ captures a measure of polarization. Treated individuals are revealed the actual distribution, R , which generates exogenous variation in the degree of polarization.

second main category captures views pertaining to government efficiency, fraud, and waste. After treatment, we obtained information about an individual's perceptions of government efficiency, fraud, and waste. Our final category looks to capture views on compromise and trust. After treatment, we asked individuals a series of questions pertinent to compromise in the government as well as general feelings of trust. We also captured an individual's willingness to compromise and trust others by using both survey and behavioral measures. The

behavioral measures included giving individuals the option to subscribe to different newsletters, to read a quote about a controversial issue made by a politician, and to write an email to their senators. We included links directing individuals to the alternatives, and we can track whether or not an individual selected a link in our survey. Upon completion of the survey, participants are thanked and promptly paid.¹⁰

2.5 Ensuring Data Quality

While recent research shows that experimenter demand effects are not likely to be a concern in survey experiments in general and MTurk survey experiments in particular (Mumolo and Peterson, 2019; de Quidt et al., 2018), we took several steps to ensure the best possible data quality. During the consent process, we provided general information about the objective of the survey without any direct mention of polarization (“This survey will ask you questions about demographics, political preferences, and beliefs about the government”). After the section with background questions, we provided information about the budget process in the United States to nudge individuals to think about government spending. We strategically placed this information right before we elicit preferences and beliefs on government spending. For the questions that elicit preferences and beliefs, we constrain the answers to sum 100. In the outcome questionnaire, we introduce an attention check question to stimulate respondents to pay extra attention to the subsequent questions. Finally, there may be some concerns about lack of effort, lack of attention, and deception in MTurk that could affect the quality of the data that can be collected (Hauser et al., 2018; Kennedy et al., 2018; Dennis et al., 2019). To address this concern, we check if the results are robust to restricting the sample to participants who passed attention checks, who took more than 7 minutes to complete the survey and deleted repeated IP addresses (GPS coordinates). We also checked two open-ended questions and found no evidence that these answers were generated by a computer algorithm. There are 255 participants who did not answer these

¹⁰All participants who successfully finish the experiment and pass “attention” checks are paid \$1.00 for survey completion.

questions. We check if the results are robust to excluding these participants.

3 Estimation Strategy

To test the effect of information on polarization, before treatment, we elicited an individual’s perspective on how well they think the government represents their preferences for spending on welfare (or military) spending. After treatment, we re-elicited these preferences by asking the same questions.

To study the impacts of polarization on the political process, we construct indices that combine the outcome variables within each of the three categories. First, we orient outcome variables so that more positive values have the same meaning. Then, we demean each variable using the mean of the control group and convert it into an effect size by dividing it by the standard deviation of the control group. The index is the weighted average of the transformed outcomes, where the weights are derived from the inverse of the covariance matrix of the transformed outcomes (Anderson, 2008). These three indices are the primary outcomes for our treatment evaluation. As a robustness and consistency check, we also explore treatment effects on each outcome variable.

3.1 Estimation

To examine the effects of information on polarization, we exploit the fact that we asked individuals how well they think the government represents their preferences for spending on welfare (or military) both before and after treatment to estimate the effect of information using a difference-in-difference design. This specification increases the precision of the estimates and allows us to control for individual fixed effects as a robustness check. We estimate the following equation for both the more and less polarized groups:

$$y_{it} = \beta_0 + \beta_1 Post_t + \beta_2 Treated_i + \beta_3 Post_t \cdot Treated_i + \varepsilon_{it} \quad (1)$$

where $Post_i$ is a dummy variable that controls for any changes that occur between answering questions and $Treated_i$ indicates if individual i was randomly assigned to the information intervention. β_3 is the coefficient of interest. Individual fixed effects are included and control fixed individual covariates. We cluster standard errors at the individual level.

To examine the effects of polarization on political perceptions, we estimate the effects of polarization on the three indices described above. Random assignment implies that we can compare treated individuals, who experience a reduction (increase) in polarization to individuals in the control group who would have experienced a similar reduction (increase) in polarization had they been treated. For these outcomes, we estimate the following equation for both the more and less polarized groups:

$$y_i = \beta_0 + \beta_1 Treated_i + \varepsilon_i \quad (2)$$

where $Treated_i$ indicates if individual i is randomly assigned to the information intervention. β_1 is the coefficient of interest. We use heteroskedastic robust standard errors because treatment is randomly assigned at the individual level with no clustering in sampling nor in treatment assignment (Abadie et al., 2017).

For both the effects of information on polarization and the effects of polarization on political perceptions, we also test for effects on the distribution of outcomes. We use Kolmogorov-Smirnov based statistics to non-parametrically test for equality of the distributions, as well as first and second-order stochastic dominance of treatment over control (Abadie, 2002).¹¹

¹¹To test for distribution equality, let $F_{(1)}$ be the distribution of outcome y_{it} for the treated group and $F_{(0)}$ be the distribution of the control group. According to Abadie (2002), we define $F_{(1)}$ first order stochastic dominates $F_{(0)}$ if $\int_0^x dF_{(1)}(y) \leq \int_0^x dF_{(0)}(y) \forall x \geq 0$ and $F_{(1)}$ second order stochastic dominates $F_{(0)}$ if $\int_0^x \left(\int_0^z dF_{(1)}(y) \right) dz \leq \int_0^x \left(\int_0^z dF_{(0)}(y) \right) dz \forall x \geq 0$

4 Results

4.1 Distribution of Polarization

We recruited a sample of 1,643 participants using Amazon’s crowdsourcing marketplace, Mechanical Turk (MTurk). As mentioned above, we define polarization as the difference between people’s preferences for distributing government spending (P_i) and their beliefs about how the government is actually distributing its spending (E_i). To measure this gap, we asked participants two questions.¹² First, for a given \$100, we elicited how much they would prefer to have allocated between Welfare Programs and Military, Defense, and Homeland Security. This question measures P_i . Second, we asked participants what they believe the government is allocating between the two categories giving us a measure of E_i .

With a base measure of polarization, we inferred what would happen to polarization if participants learn about the actual spending allocation between these programs (R). The Congressional Budget Office reports that in 2017, for a given \$100, \$44 were allocated towards Welfare Programs and \$56 towards Military, Defense, and Homeland Security. As predicted by the Hotelling-Downs model of median voters and the partisan budget deliberation process, spending across these categories is stable over time and administrations from different parties (Hotelling, 1929; Downs, 1957).^{13, 14} After learning R , if $|R - P_i|$ is smaller (greater) than $|E_i - P_i|$, then the individual should develop a better (worse) perception about the government and become “less” (“more”) polarized, as described in Figure 1. Estimating these gaps, 55 percent of the sample should become “less” polarized, indicating that a higher fraction of the

¹²See Appendix Figure A.2 for an example of these questions.

¹³Appendix Table A.1 shows the distribution of spending across major federal expenses over time.

¹⁴The Hotelling-Downs model predicts that in a two-candidate election, each candidate should take the positions of the median voter to increase their respective probability of winning (Downs, 1957; Hotelling, 1929). This result is robust under a few conditions, namely, that voter preferences are single-peaked and that the number of candidates does not exceed two (J. Osborne, 1995). Furthermore, theory also predicts that candidates take on the positions of the median voter of the entire population even if the median voter of their respective party changes. For example, in U.S. elections, a change in preferences of the party’s median voter but not in the general median voter results in candidates first taking more extreme positions in the party vote, but then adopting the positions of the general median population in the general election.

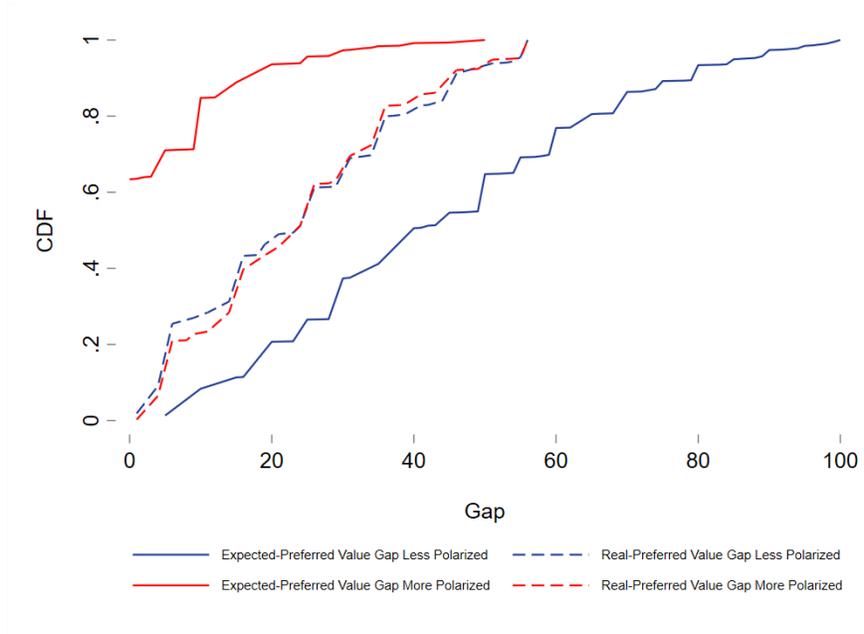
Table 1: Summary Statistics

	Full Sample	Less Polarized	More Polarized	U.S. Population
Income Below 50K (%)	0.45 (0.5)	0.45 (0.5)	0.44 (0.5)	0.42
4-Year College (%)	0.56 (0.5)	0.54 (0.5)	0.59 (0.49)	0.29
Male (%)	0.49 (0.5)	0.45 (0.5)	0.53 (0.5)	0.49
White (%)	0.82 (0.38)	0.83 (0.37)	0.81 (0.4)	0.74
Age (Years)	35.57 (11.18)	35.34 (11.18)	35.86 (11.18)	37.2
Married (%)	0.42 (0.49)	0.39 (0.49)	0.46 (0.5)	0.48
Republican (%)	0.25 (0.43)	0.19 (0.4)	0.32 (0.47)	0.26
Democrat (%)	0.47 (0.5)	0.51 (0.5)	0.42 (0.49)	0.2
Social Views (0 Lib. - 100 Cons.)	38.3 (31)	33.19 (29.86)	44.61 (31.23)	
Econ. Views (0 Lib. - 100 Cons.)	45.4 (31.47)	40.88 (30.88)	50.98 (31.32)	
Daily Facebook Minutes	55.76 (59.7)	50.04 (56.86)	62.71 (62.31)	
Daily Online Minutes	142.32 (58.99)	146.07 (57.8)	137.76 (60.14)	
Facebook News Freq. (0-100)	30.75 (31.44)	28.35 (30.02)	33.66 (32.87)	
Cable News Freq. (0-100)	34.09 (32.5)	32.07 (32.77)	36.54 (32.03)	
News Bias (0 Lib. - 100 Cons.)	44.6 (25.4)	41.9 (23.96)	47.88 (26.7)	
Preference Welfare (0-100)	60.19 (23.97)	62.61 (22.36)	57.19 (25.52)	
Expected Welfare (0-100)	40.9 (24.67)	29.69 (20.32)	54.75 (22.46)	
Gov. Represent (0 Bad - 100 Good)	31.96 (29.15)	26.2 (26.14)	39.09 (31.05)	
N	1,643	908	735	

This table presents summary statistics for the full sample (1), the less polarized group (2), the more polarized group (3), and demographics of American adults (4). The top six numbers of (4) are from the 2017 American Community Survey (United States Census Bureau 2017) and the Republican and Democrat shares are from the 2016 American National Election Study (American National Election Studies 2016). Standard deviations in parenthesis.

population believes that government spending is further away from their preferences than it really is. The two groups do not differ on gender, age, income, education, and race, but

Figure 2: Differences Between Allocation Preferences, Expectations, and Reality



This figure plots the CDFs of the difference (“Gap”) between an individual’s preferred allocation and their expected allocation, as well as the difference between an individual’s preferred allocation and the real allocation. This is displayed for both the “More” and “Less” polarized groups.

individuals who should become “more” polarized are more likely to be Republican, express conservative views on social and economic issues, and spend more time on social media. This is summarized in Table 1. Our sample is qualitatively similar to the U.S. population in terms of characteristics like income, gender, race, and age, but varies slightly on metrics like education and percent democrat.

Figure 2 presents the distribution of $|E_i - P_i|$ (polarization) and $|R - P_i|$ (reality) for both types of individuals. Individuals who should become less polarized have large gaps between their expectations and preferences on government spending. Individuals who should become more polarized have substantially smaller gaps. These first two features of the distribution, but not necessarily their magnitudes, are by definition of how the groups are constructed. However, the distributions of $|R - P_i|$ are identical for both groups (Kolmogorov-Smirnov $p = 0.259$, Wilcoxon $p = 0.551$). This second result is not by construction but rather captures the observation that both groups have identical spending preferences.¹⁵ Similarly,

¹⁵One concern would be if expectations are independently distributed from preferences. This not the case

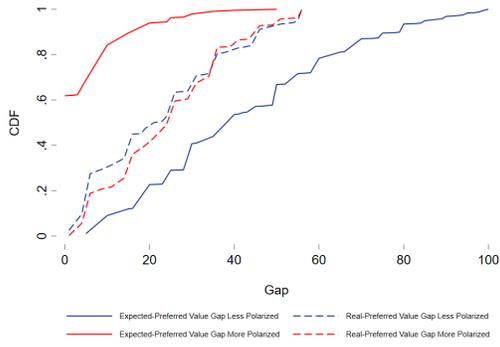
according to Table 1, individuals in the “less” polarized group have a spending preference of \$62.61 for welfare but an expectation of only \$29.69. On the other hand, individuals in the “more” polarized group have a spending preference of \$57.19 for welfare but an expectation of \$54.75. Hence, the driving force behind differing perceptions in government favorability is differences in beliefs rather than differences in preferences.

We find the same results across different subgroups defined by demographics and political orientation. Heterogeneity of the distribution of polarization for various subgroups is reported in Figure 3. While conservatives have smaller gaps than liberals, within both political groups, some individuals could become “more” or “less” polarized depending on their preferences and beliefs. However, across all subgroups, the distributions of preferences are identical.¹⁶ These results are consistent with the increase in polarization being driven by changes in beliefs rather than preferences. Given this, it is an important policy question to identify whether and by how much information can increase or decrease polarization by allowing individuals to update their beliefs according to a real benchmark. We address this question in the next section.

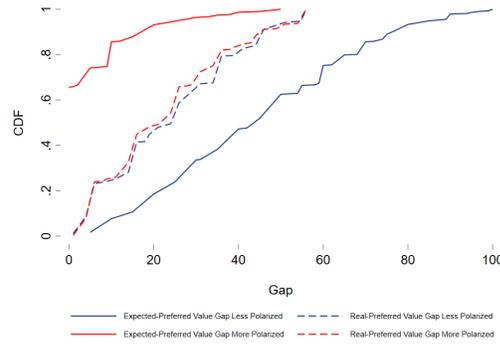
in this setting. Overall, the distribution of preferences and expectation has a correlation coefficient of 0.083, significant at the one percent level ($p = 0.0007$). For the “less” polarized group the correlation between preferences and beliefs is -0.6015 ($p < 0.0001$), and for the “more” polarized group the correlation between preferences and beliefs is 0.9123 ($p < 0.0001$).

¹⁶See Appendix Table A.2.

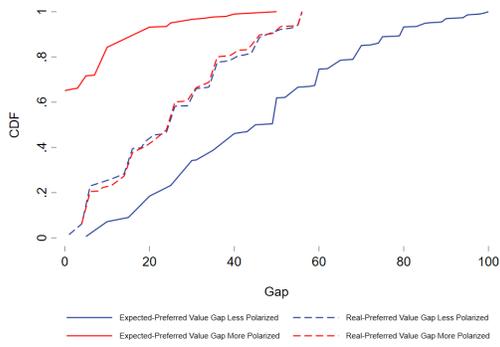
Figure 3: Heterogeneity in the Distribution of Polarization



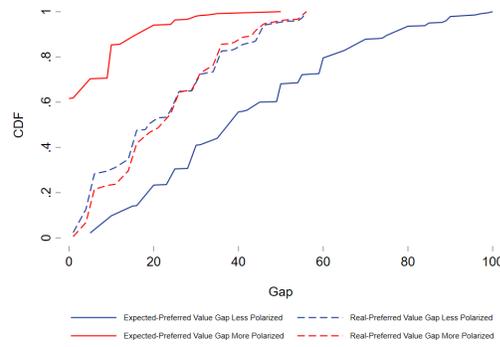
(a) Men



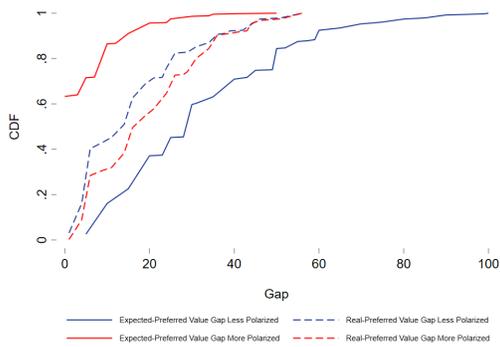
(b) Women



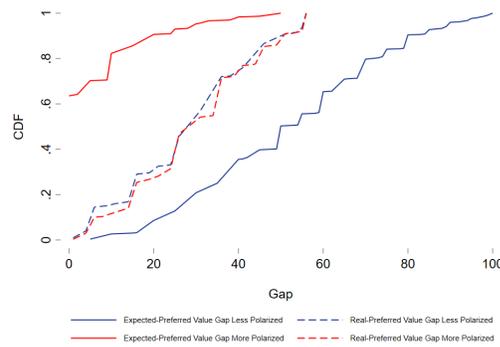
(c) Under 3 Years Old



(d) Over 3 Years Old



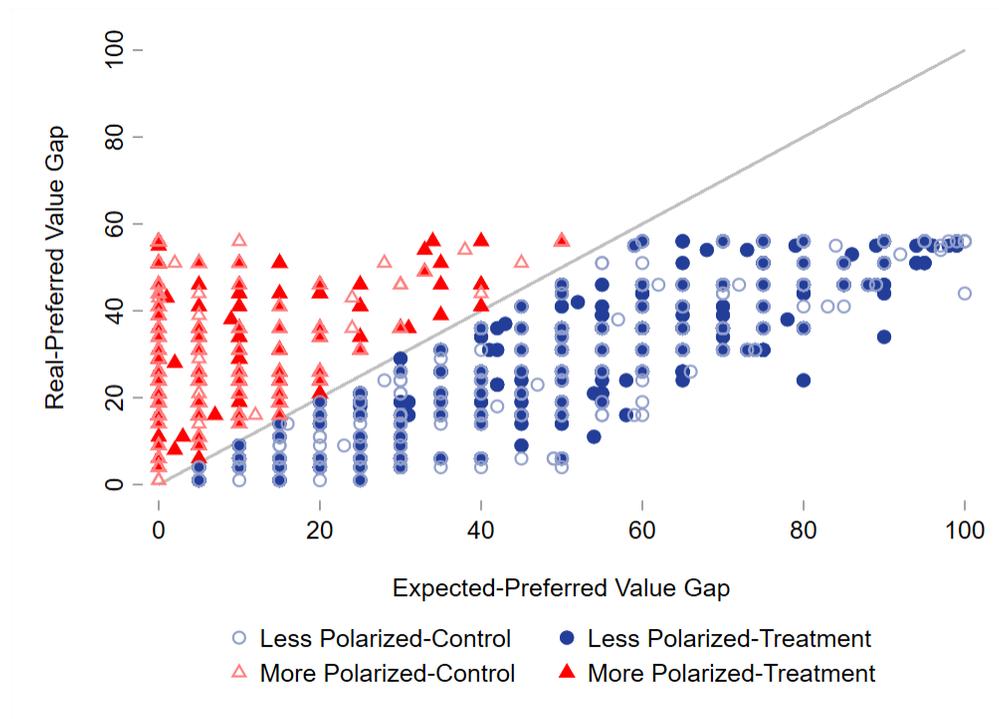
(e) Conservative



(f) Liberal

This figure plots the CDFs of the difference (“Gap”) between an individual’s preferred allocation and their expected allocation, as well as the difference between an individual’s preferred allocation and the real allocation. This is displayed for both the “More” and “Less” polarized groups for various heterogeneous samples.

Figure 4: Random Assignment to Information about the Real Expenditure Allocation



This figure compares $|R - P_i|$ and $|E_i - P_i|$ between individuals who either received or did not receive information. The “less” polarized group has $n = 908$ (450 treated, 458 not treated), and the “more” polarized group has $n = 735$ (371 treated, 364 not treated).

4.2 Information Provision and Polarization

We estimate the effect of information on polarization by identifying whether providing the actual spending allocation, R , leads individuals to reassess their prior beliefs and then adjust their perceptions of the government. We randomly revealed R to a subset of participants. As discussed above, the effect of treatment depends on the size of $|R - P_i|$ relative to $|E_i - P_i|$. After learning R , some individuals will become “less” polarized and others “more” polarized. By randomly revealing R , we can compare outcomes between individuals who have similar initial beliefs about P_i and E_i but vary on treatment status.

Figure 4 summarizes our identification strategy. Individuals falling below the line correspond to the “less” polarized group (people who become less polarized if treated relative to the control, $n=908$), whereas individuals above the line correspond to the “more” polarized group (people who become more polarized if treated relative to the control, $n=735$). We compare

treated individuals (dense figures) to control individuals (hollow figures) within each group to estimate the effects of information on polarization. Covariates across treatment status are balanced for the entire sample as well as within each group. This is reported in Appendix Table A.3.

We estimate the effect of information on how individuals perceive the government represents their preferences. We asked participants, “how well do the current president, congressmen, and senators represent your spending preferences” both before and after treatment to estimate the effect of information on the change of this measure. We estimate the treatment-on-the-treated effect and test for effects on the distribution of preference representation as described in Section 3.

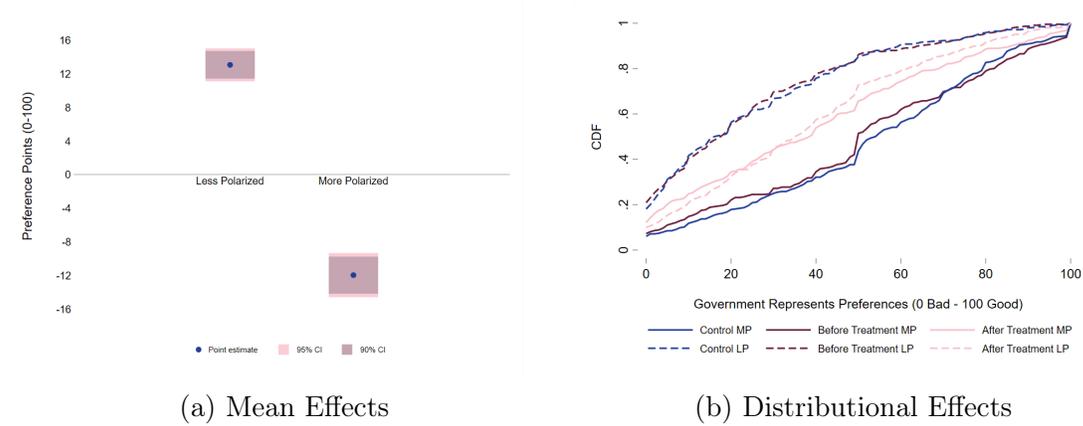
Figure 5 presents these results. For an individual in the “less” polarized group, learning the actual spending allocation, R , increases their belief that the government represents their spending preferences by 13 points on a scale of 0 to 100. This result indicates that for this group, learning the actual spending allocation R decreases polarization. Conversely, for an individual in the “more” polarized group, learning the actual spending allocation, R , decreases their belief that the government represents their spending preferences by 12 points, increasing polarization. We cannot reject that the magnitudes of these effects are the same. These results are robust to various specifications, including individual fixed effects and checks for inattention and lack of effort.¹⁷ We find that treatment does not have heterogeneous effects across different population subgroups defined by demographics and political orientation.¹⁸

Learning the actual spending allocation, R , not only affects the mean but shifts the entire distribution of belief that the government represents their spending preferences (panel (b) of Figure 5). Treated individuals in the “less” polarized group now state that they believe the government represents their preferences better, and treated individuals in the “more” polarized group now state that they believe the government represents their preferences worse. After treatment, both groups have the same distribution of beliefs. Using

¹⁷See Appendix Figure A.3.

¹⁸See Appendix Figure A.4.

Figure 5: The Impact of Information on Government Representation



Panel (a) of this figure presents the treatment-on-the-treated effects on information and whether an individual thinks the government represents their spending preferences. Both 95 percent and 90 percent confidence intervals are displayed. Panel (b) shows effects at the distribution level.

Kolmogorov-Smirnov tests, we cannot reject that the post-treatment distributions are the same ($p = 0.152$), that there is no first-order stochastic dominance ($p = 0.229$), and that there is no second-order stochastic dominance ($p = 0.325$).

These results provide further evidence that different beliefs are the driving force behind polarized government perceptions. Moreover, they show that reporting accurate information causes the “less” polarized and “more” polarized groups to converge to comparable levels of beliefs, closing the polarization gap. This alignment can help facilitate the political process by making it easier to pass socially beneficial policy measures. In the next section, we further use the experimental change in polarization to document the consequences of polarization on the political process by estimating its effects on government support, perceptions about government efficiency, and the willingness to trust and compromise.

4.3 The Impact of Polarization on Civic Behavior

When an individual forms more extreme positions either in favor of or against a government, it is important to consider how this divergence manifests in other beliefs that affect the political process. We exploit our exogenous information intervention to document the impact

of polarized positions across three outcomes: government support, views about government efficiency, and the willingness to trust and compromise. We asked participants several questions related to each outcome and combined them into three indices.¹⁹ We estimate the effect of information on each index and test for effects on their respective distributions as described in Section 3.

As presented in Figure 6, revealing the allocation spending allocation R to individuals in the “less” polarized group does not result in any change across any of the primary indices. The point estimates are small and close to zero. However, treated individuals in the “more” polarized group are 0.35 standard deviations ($p = 0.040$) less supportive towards the government, feel as though the government is less efficient by 0.42 standard deviations ($p = 0.003$), and experience a 0.43 standard deviation decrease in the willingness to compromise and trust ($p = 0.086$). These results indicate that individuals who initially believe the government represents their preferences well, upon learning that the government is behaving worse than they expected, state to be less supportive and believe that the government is less efficient. Similar results emerge for various heterogeneous groups, including conservatives and liberals.²⁰

We find similar results in terms of the distributions of the three indices. Figure 7 reports treatment’s effects at the distribution level for each index for both the “more” and “less” polarized groups. For the “less” polarized group, we find identical distributions for treated and control individuals across the three indices. Using Kolmogorov-Smirnov tests, we cannot reject that the distributions are the same ($p = 0.269$, $p = 0.421$, $p = 0.284$), that there is no first-order stochastic dominance ($p = 0.601$, $p = 0.226$, $p = 0.141$), and that there is no second-order stochastic dominance ($p = 0.802$, $p = 0.152$, $p = 0.536$). Conversely, for the “more” polarized group, across the three indices, the distribution for treated individuals shifts to the left relative to the distribution of the control group. There is evidence that for each

¹⁹The variables within each category and the associated question text is presented in Appendix Section C.

²⁰See Appendix Figure A.5.

Figure 6: Polarization and Beliefs

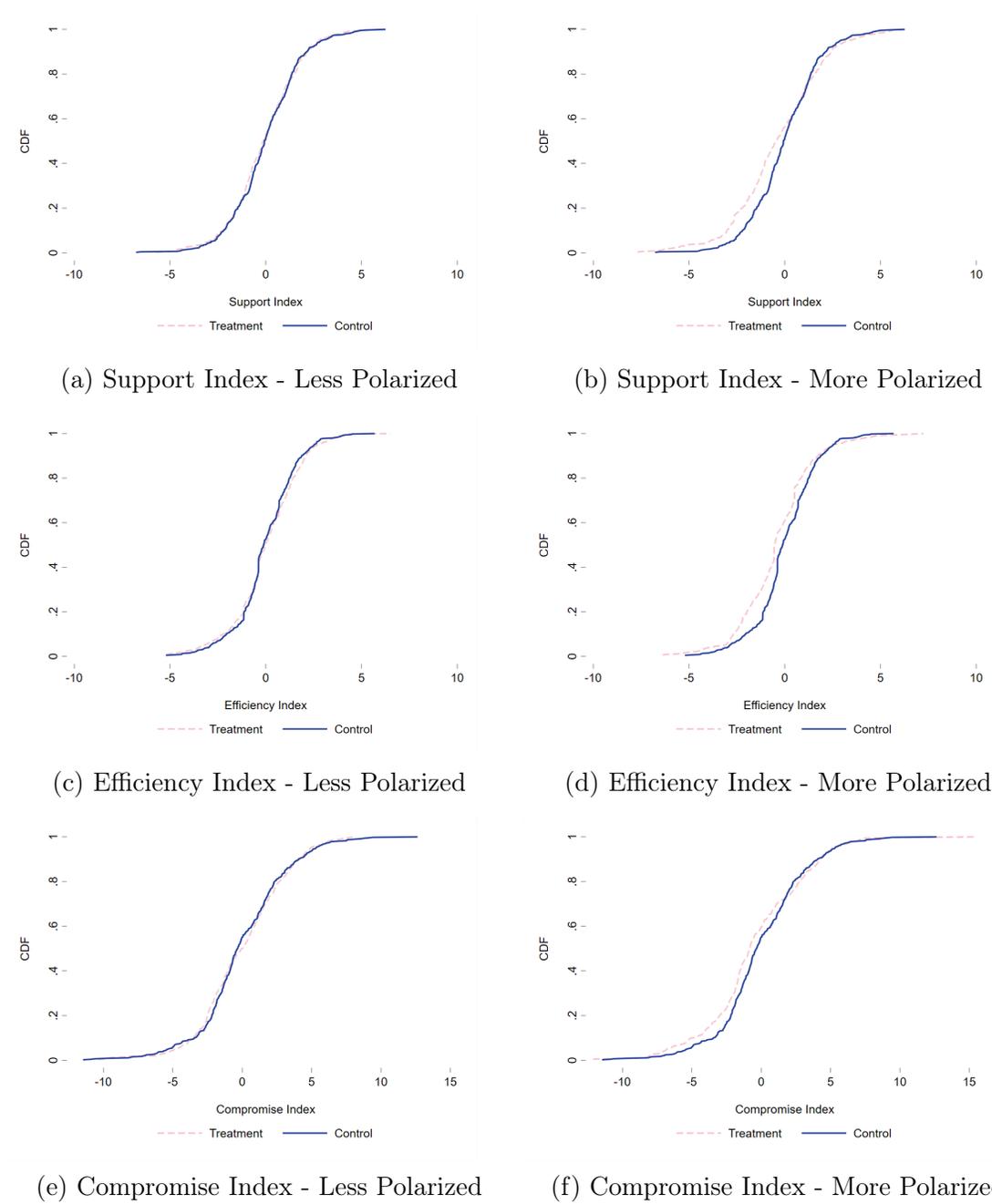


This figure presents the treatment-on-the-treated effects of polarization changes on various indexes on beliefs that affect the political process, including government support, views about government efficiency, and the willingness to trust and compromise. Both 95 percent and 90 percent confidence intervals are displayed.

index, the distribution of the control group first-order stochastic dominates the distribution of the treatment group ($p = 0.024$, $p = 0.000$, $p = 0.012$). Again, these results suggest that when individuals become more polarized, they state to become less supportive, believe that it is less efficient, and experience a reduction in their willingness to trust and compromise.

The information treatment provides a new lens for participants to view the government and update their priors as well as any other associated belief towards the government. Figure 5 shows that both the “less” and “more” polarized groups update prior beliefs about the government representing their preferences in a Bayesian manner. However, Figure 6 indicates that only those in the “more” polarized group further update any associated beliefs. This asymmetry between groups’ responses is consistent with a growing literature showing asymmetric responses between positive and negative information, where negative information has

Figure 7: Distributional Effects of Polarization and Beliefs



This figure presents the treatment-on-the-treated effects of polarization changes on indexes pertaining to individual beliefs, including government support, views about government efficiency, and the willingness to trust and compromise. The effects are displayed at the distribution level for each index.

a greater impact on attitudes and beliefs than positive information (Soroka, 2006). In our case, treatment tells the “more” polarized group that the government is performing worse

than they thought and tells the “less” polarized group that the government is performing better than they thought. Furthermore, this asymmetric response is also evidence against the notion that experimenter demand effects drive results. If participants simply change their answers towards the direction of their intervention, then this behavior would not lead to the asymmetric pattern documented by our data.

5 Robustness Checks

The previous results are robust to a variety of checks. Various robustness checks are presented in Figure 8.²¹ We address any minor imbalances in sample composition by controlling for representation before treatment, political identity, social media usage, and basic demographics. There may also be some concerns about lack of effort, inattention, and deception in MTurk that affect the quality of the data that can be collected (Hauser et al., 2018). To address this concern, we restrict the sample to participants who passed attention checks, who took more than 7 minutes to complete the survey, deleted repeated IP addresses (GPS coordinates), and exclude participants who did not answer either of the open-ended questions and find almost identical results. We also drop individuals who experienced changes smaller than 5 points in their belief that the government represents their spending preferences and find no differences in the results.

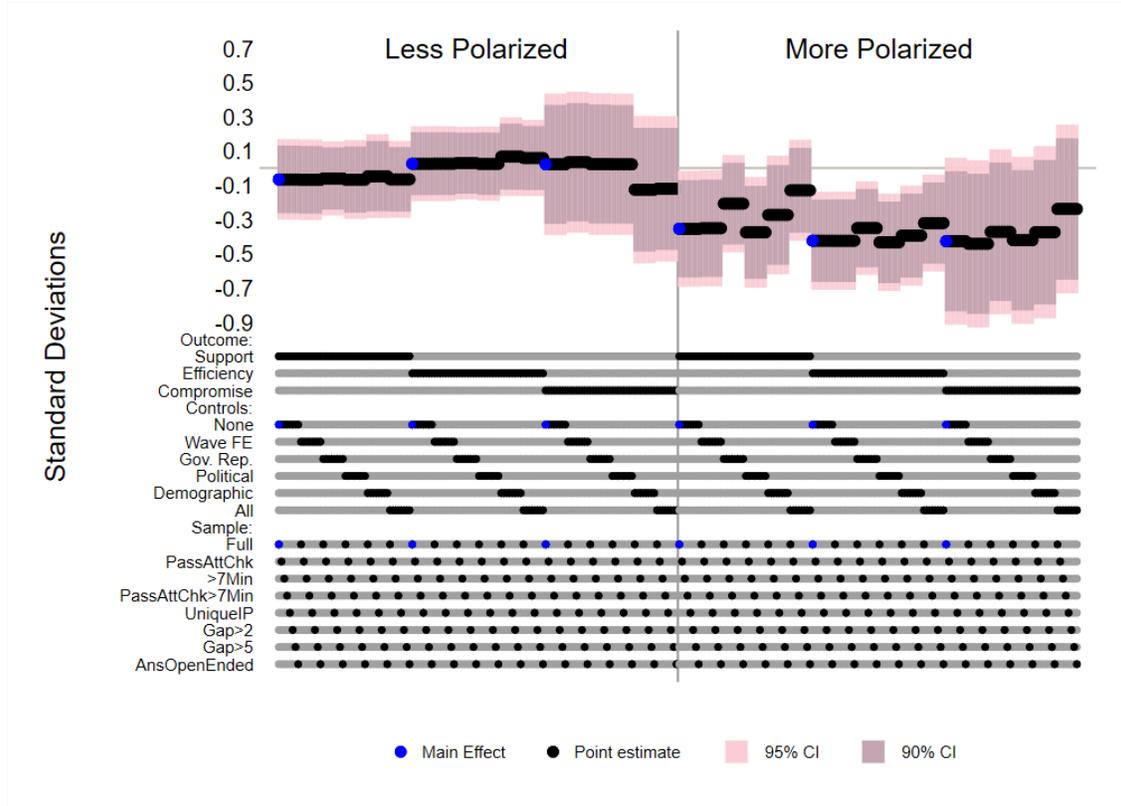
As a final consistency check, we estimate the effects of the information treatment on the components of each index.²² The estimates go in the same direction as in the general indices. For the “less” polarized group, the estimates are small, statistically insignificant, and tend to be positive. For the “more” polarized group, the estimates are generally negative, larger, and have higher statistical significance.

In order to speak to how our results generalize from our sample to the general population, we use the 2018 population weights from the Census Bureau to construct weights of the

²¹Figure 8 provides robustness checks for results in Section 4.3. See Appendix Figure A.3 for a similar exercise for Section 4.2.

²²See Appendix Figure A.6.

Figure 8: Robustness Tests for Polarization and Beliefs



This figure presents the treatment-on-the-treated effects of polarization changes on various indexes pertaining to individual beliefs, including government support, views about government efficiency, and the willingness to trust and compromise. Both 95 percent and 90 percent confidence intervals are displayed. Results are displayed for various robustness checks of the main index variables.

frequencies between the interactions of Age, Gender, and Education. We use this to adjust our main results (Appendix Table A.4). The signs and magnitudes of the unweighted and weighted results are comparable.²³

We can rescale the treatment effects on beliefs that affect the political process by the effect of the treatment on how individuals perceive the government represents their preferences. This will estimate the effect of decreasing polarization on other beliefs that affect the political process only if we assume that the treatment has no direct effect on these other beliefs. Rescaling the estimates, we find that if an individual increases their belief that

²³There are some small changes in significance, which may be the result of using a smaller sample size for the weighted adjustments. This is largely a feature of our sample including 3 levels of gender (Male/Female/Other) whereas the Census only includes 2 (Male/Female). We drop observations that do not have a counterpart in the Census.

the government represents their spending preferences by one point on a scale of 0 to 100 (decreases their polarization), then support for the government increases by 0.03 standard deviation, perceptions of government efficiency increase by 0.035 standard deviations, and willingness to trust and compromise increases by 0.036 standard deviations. However, the plausibility of the assumption makes the rescaled estimates only suggestive of a potential IV estimate.

6 Discussion and Conclusion

Our main results have several important policy implications. First, we document the distribution of polarization using a novel measure between preferences, expectations, and the actual spending allocation. In doing so, we show that polarization is driven by a distortion in expectations rather than in preferences. Over- and under-polarized individuals actually share similar spending preferences, but have drastically different expectations about what they believe the government to be actually doing. This result is consistent with the theory that polarized views of the government are driven by people perceiving the same reality through a different lens (Alesina et al., 2020). Hence, an explanation for the rapid rise in polarization in the United States is that people are forming more extreme perceptions of the current state of affairs, rather than preferences approaching polar extremes. In a world of instant (mis)information, sound bites, and headlines, it is easy to form biases and opinions through a lens that may not be factually accurate, pushing individuals towards these more extreme positions. Recent work shows that information content conveyed through the internet matters, turning the discussion towards skewed news, false information, and the role of biased coverage and social media (Gentzkow and Shapiro, 2010; Boxell et al., 2017; Allcott and Gentzkow, 2017). With the growth of social media and the associated concern about skewed and fake news, our results show significantly more profound consequences and suggest that it would be socially beneficial to limit exposure to news of this type (Mosquera et al., 2020; Allcott et al., 2020).

Despite this concern, we show that providing a new lens in the form of accurate information can completely mend the divergence between “more” and “less” polarized individuals in terms of government spending representation. Providing factual information about actual government expenditures to individuals who have a less (more) favorable perception of the government than what they should positively (negatively) impacts this group’s belief that the government represents their spending preferences by 13 points (12 points) on a scale of 0 to 100. This initial alignment can help facilitate the political process by making it easier to pass socially beneficial policy measures.

However, we also show that for associated beliefs related to the political process, only the “more” polarized group adjust their beliefs according to the factual benchmark. That is, for individuals who learn the government is behaving closer to their preferences than they initially thought, there are not any significant changes in beliefs. For individuals who learn the government is behaving worse, we find a significant reductions of 0.35 s.d. in support towards the government, 0.42 s.d. in beliefs about government efficiency, and 0.43 s.d. in the willingness to compromise or trust.

Returning to the theoretical model in Alesina et al. (2020) where individuals hold perceptions for a variety of topics and perceptions are a function of signals and information, we show that providing accurate information affects perceptions, resulting in a complete translation in the function that relates perceptions to policy views. Reporting accurate information causes the “less” polarized and “more” polarized groups to converge to comparable levels of beliefs, effectively closing the polarization gap. Importantly, we have the same response for both conservatives and liberals. However, information only causes an asymmetric response in a secondary function that relates perceptions to behaviors. Only the “more” polarized group responded. This is consistent with a behavioral response where negative information has a greater impact on attitudes and beliefs than positive information or where other perceptions about the government have higher weights than spending perceptions for the “less” polarized group. Nevertheless, this result is Pareto efficient in of itself. Providing costless information

about actual policy reduces the total divergence between over/under-polarized individuals by moving 45% of the population closer to the middle.

Communication from a government to its people is a primary channel that fosters their relationship, as well as the relationship amongst individuals themselves. As an example, many countries provide itemized tax receipts to their constituents detailing how tax dollars are spent. While factual information can attenuate the divide amongst individuals and increase efficiency, this also suggests that biased rhetoric may increase the divide making it unnecessarily difficult to find common ground and pass socially beneficial policy measures that address fundamental economic and social issues.

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A Online Appendix Tables and Figures

Table A.1: Government Expenditures²⁴

	1994	2004	2014	2018
Defense	14.3%	12.1%	13.9%	11.4%
Education	14.3%	18.2%	16.7%	14.3%
Health Care	14.3%	18.2%	19.4%	22.9%
Pensions	17.1%	15.2%	19.4%	20.0%
Welfare	8.6%	9.1%	8.3%	5.7%
Other	31.4%	27.2%	22.3%	25.7%

²⁴Data from https://www.usgovernmentpending.com/breakdown_2018USpt_19ps5n.

Table A.2: Differences in the Distribution of Polarization

	Kolmogorov-Smirnov	Wilcoxon
Full Sample	0.259	0.552
Women	0.193	0.203
Men	0.029	0.055
Less than 33 years	0.958	0.921
More than 33 years	0.235	0.266
Conservatives	0.001	0.000
Liberals	0.723	0.523
Low social media usage	0.237	0.399
High social media usage	0.583	0.546
Liberal news bias	0.515	0.243
Conservative news bias	0.012	0.025

Table A.3: Balance of Covariates

	Full Sample			Less Polarized			More Polarized		
	Treated	Not Treated	P-value	Treated	Not Treated	P-value	Treated	Not Treated	P-value
	(0.4)	(0.5)	0.78	(0.5)	(0.5)	0.67	(0.5)	(0.5)	0.95
Income Below 50K (%)	0.44	0.45	0.78	0.44	0.46	0.67	0.44	0.44	0.95
	(0.5)	(0.5)		(0.5)	(0.5)		(0.5)	(0.5)	
4-Year College (%)	0.55	0.57	0.54	0.52	0.55	0.3	0.59	0.58	0.83
	(0.5)	(0.5)		(0.5)	(0.5)		(0.49)	(0.49)	
Male (%)	0.49	0.48	0.94	0.45	0.45	0.81	0.53	0.53	0.84
	(0.5)	(0.5)		(0.5)	(0.5)		(0.5)	(0.5)	
White (%)	0.8	0.84	0.09	0.82	0.85	0.2	0.79	0.82	0.28
	(0.4)	(0.37)		(0.39)	(0.36)		(0.41)	(0.38)	
Age (Years)	35.84	35.3	0.33	35.8	34.89	0.22	35.89	35.82	0.93
	(11.27)	(11.1)		(11.23)	(11.14)		(11.34)	(11.04)	
Married (%)	0.42	0.42	0.9	0.39	0.39	0.9	0.46	0.46	0.93
	(0.49)	(0.49)		(0.49)	(0.49)		(0.5)	(0.5)	
Republican (%)	0.26	0.24	0.35	0.21	0.18	0.26	0.32	0.31	0.89
	(0.44)	(0.43)		(0.41)	(0.38)		(0.47)	(0.46)	
Democrat (%)	0.47	0.48	0.6	0.5	0.52	0.56	0.42	0.42	0.94
	(0.5)	(0.5)		(0.5)	(0.5)		(0.49)	(0.49)	
Social Views (0 Lib. - 100 Cons.)	38.6	38	0.7	33.26	33.12	0.94	45.06	44.15	0.69
	(31.33)	(30.68)		(29.82)	(29.93)		(31.93)	(30.55)	
Econ. Views (0 Lib. - 100 Cons.)	45.75	45.05	0.65	40.87	40.9	0.99	51.67	50.29	0.55
	(31.75)	(31.21)		(31)	(30.8)		(31.67)	(30.98)	
Daily Facebook Minutes	55.63	55.89	0.93	50.51	49.58	0.81	61.83	63.59	0.71
	(59.41)	(60.03)		(55.98)	(57.79)		(62.84)	(61.86)	
Daily Online Minutes	144.34	140.29	0.18	149.12	143.04	0.13	138.57	136.94	0.72
	(58.11)	(59.83)		(56.15)	(59.3)		(59.96)	(60.4)	
Facebook News Freq. (0-100)	30.89	30.6	0.86	29.79	26.92	0.17	32.23	35.09	0.25
	(31.27)	(31.63)		(30.11)	(29.89)		(32.61)	(33.11)	
Cable News Freq. (0-100)	34.32	33.85	0.78	32.21	31.93	0.9	36.89	36.2	0.78
	(32.57)	(32.45)		(32.85)	(32.72)		(32.09)	(32.01)	
News Bias (0 Lib. - 100 Cons.)	45.44	43.77	0.2	42.62	41.19	0.39	48.85	46.91	0.34
	(25.7)	(25.09)		(24.18)	(23.75)		(27.07)	(26.33)	
Preference Welfare (0-100)	60.25	60.12	0.91	61.95	63.25	0.38	58.18	56.18	0.29
	(24.75)	(23.18)		(23.29)	(21.41)		(26.28)	(24.7)	
Expected Welfare (0-100)	41.66	40.14	0.21	30.26	29.14	0.41	55.49	53.99	0.36
	(25.15)	(24.18)		(20.88)	(19.76)		(22.87)	(22.04)	
Gov. Represent (0 Bad - 100 Good)	31.05	32.88	0.2	26.12	26.27	0.93	37.02	41.2	0.07
	(28.91)	(29.37)		(26.36)	(25.96)		(30.73)	(31.27)	
N	821	822		450	458		371	364	

This table presents covariate balance tests across treatment status. Columns (1)-(3) show balance across the full sample, (4)-(6) for the less polarized group, and (7)-(9) for the more polarized group. P-value columns test differences in means between the two preceding columns. Standard deviations in parenthesis.

Table A.4: Weighting Adjustments

	More Polarized		Less Polarized	
	Unweighted	Weighted	Unweighted	Weighted
<i>Panel A: Information and Government Representation</i>				
Government Representation	-11.98***	-13.03***	13.05***	11.41***
<i>Panel B: Polarization and Political Perceptions</i>				
Support Index	-0.39**	-0.41	-0.02	-0.08
Efficiency Index	-0.43***	-0.50***	-0.03	-0.08
Compromise Index	-0.43*	-0.75***	-0.02	-0.18

This table compares the main results with the weight-adjusted estimates. We use the 2018 Census to obtain population frequencies for the interaction of Age by Gender by Education in order to construct our weights. * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Figure A.1: Location of Survey Respondents



Figure A.2: Elicitation Questions and Treatment/Control Text

Let's play a game!

Suppose you are responsible for planning the federal budget. The government receives \$100 and asks you to distribute it between two categories.

How would you like to distribute \$100?

Welfare Programs (Medicaid, Earned Income Tax Credit, Food Stamps, and Affordable Housing)	<input type="text" value="0"/>
Military Personnel and Contractors, Weapons, and Homeland Security	<input type="text" value="0"/>
Total	<input type="text" value="0"/>

(a) Preference Elicitation

Let's play a game!

Think about individuals in the executive and legislative branches responsible for planning the current federal budget. The government receives \$100 and asks them to distribute it between two categories.

How do you think they would distribute \$100?

Welfare Programs (Medicaid, Earned Income Tax Credit, Food Stamps, and Affordable Housing)	<input type="text" value="0"/>
Military Personnel and Contractors, Weapons, and Homeland Security	<input type="text" value="0"/>
Total	<input type="text" value="0"/>

(b) Expectation Elicitation



In summary:

You would **like to distribute \$0** towards Welfare Programs and **think** the current government is distributing **\$0**.

Therefore, you think the current government should not change their spending on Welfare Programs.

Considering this, when it comes **to spending only on Welfare Programs**:



(c) Summary of Preferences and Expectations



According to the Congressional Budget Office, **the current government is actually distributing \$44 towards Welfare Programs**.

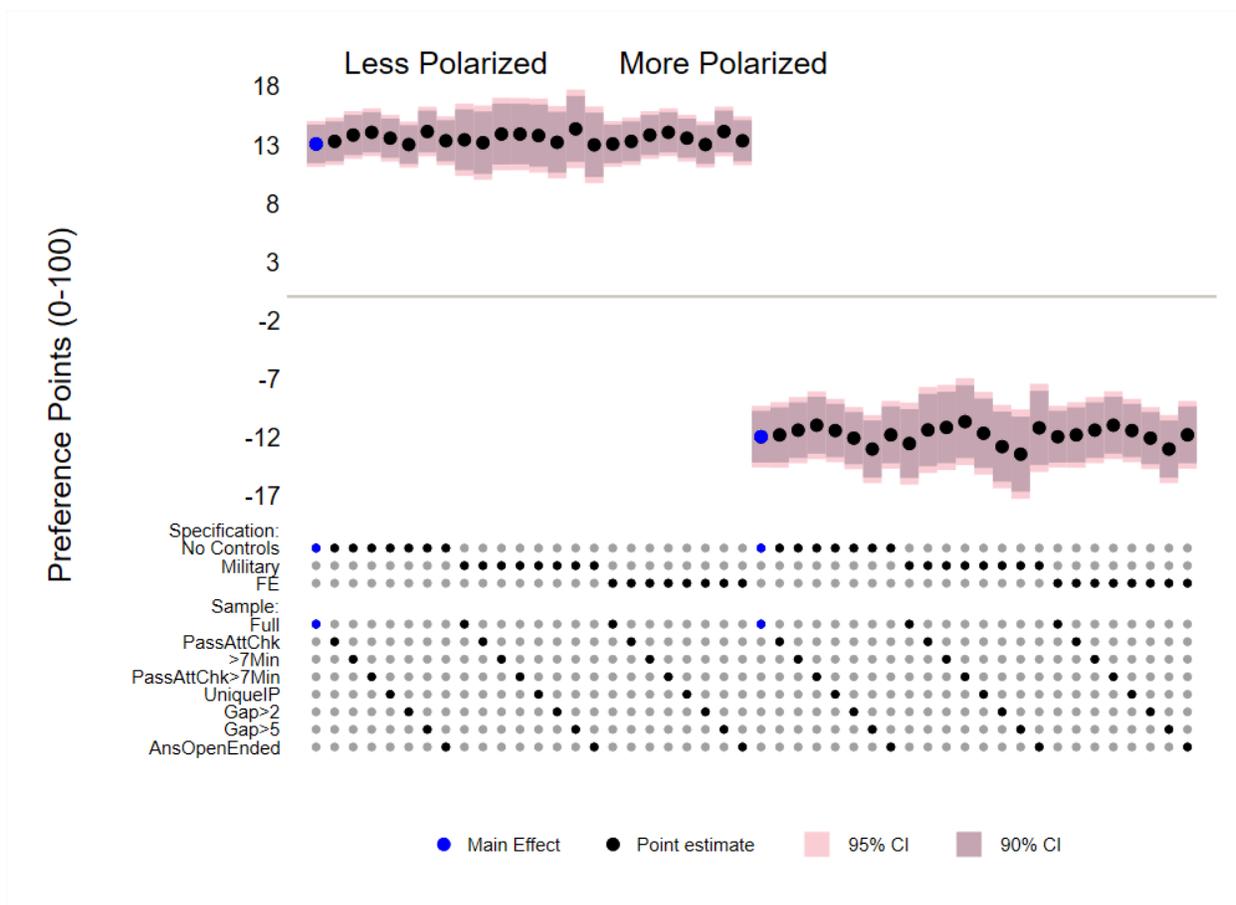
While you thought the current government should not change their spending, they should actually spend **\$44 less** on Welfare Programs.

Considering this, when it comes **to spending only on Welfare Programs**:



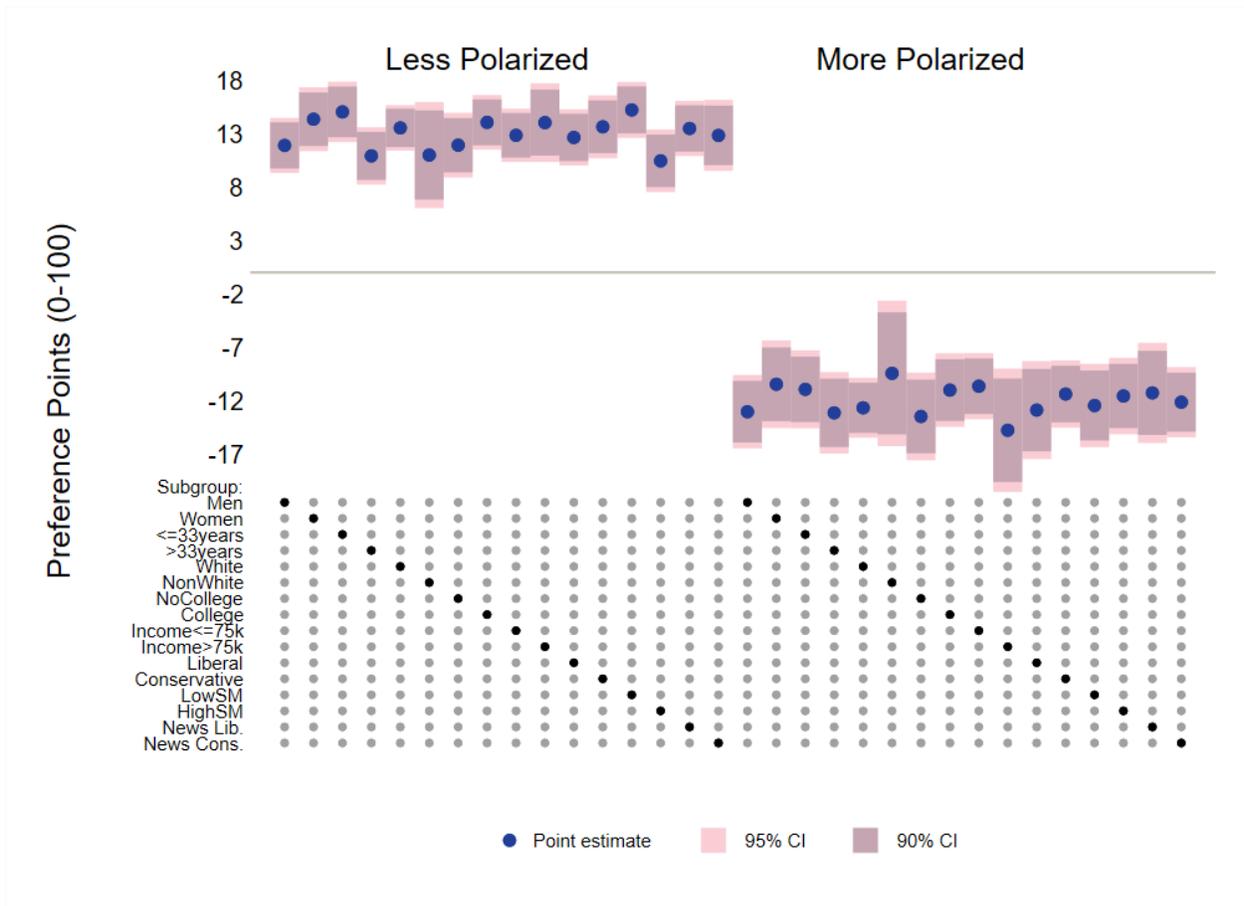
(d) Treatment Information

Figure A.3: Robustness of Information and Representation



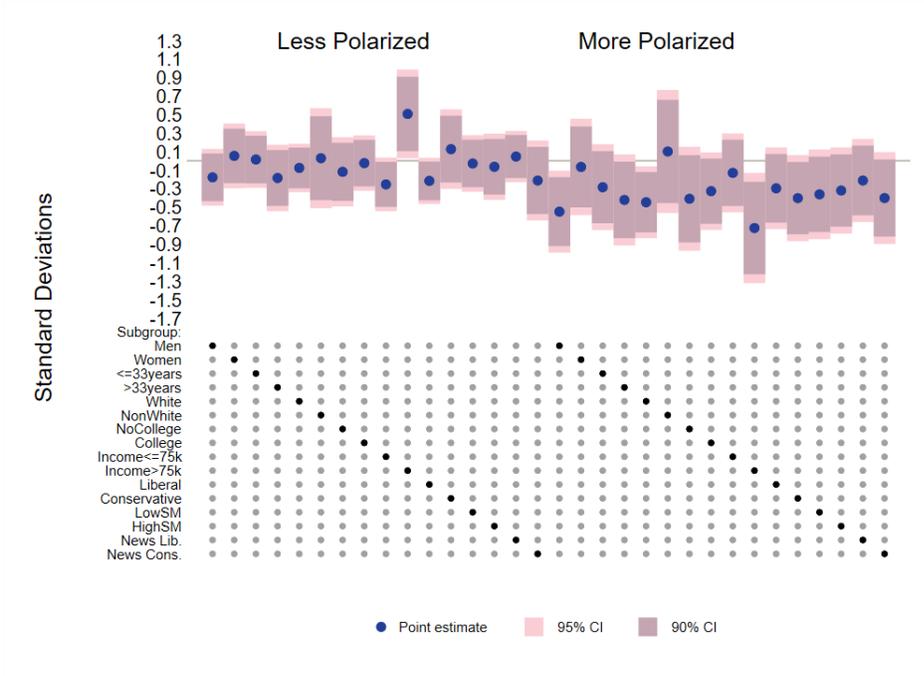
This figure presents the treatment-on-the-treated effects on information and whether an individual thinks the government represents their spending preferences. Both 95 percent and 90 percent confidence intervals are displayed. Results are displayed under various robustness checks.

Figure A.4: Heterogeneity of Information and Representation

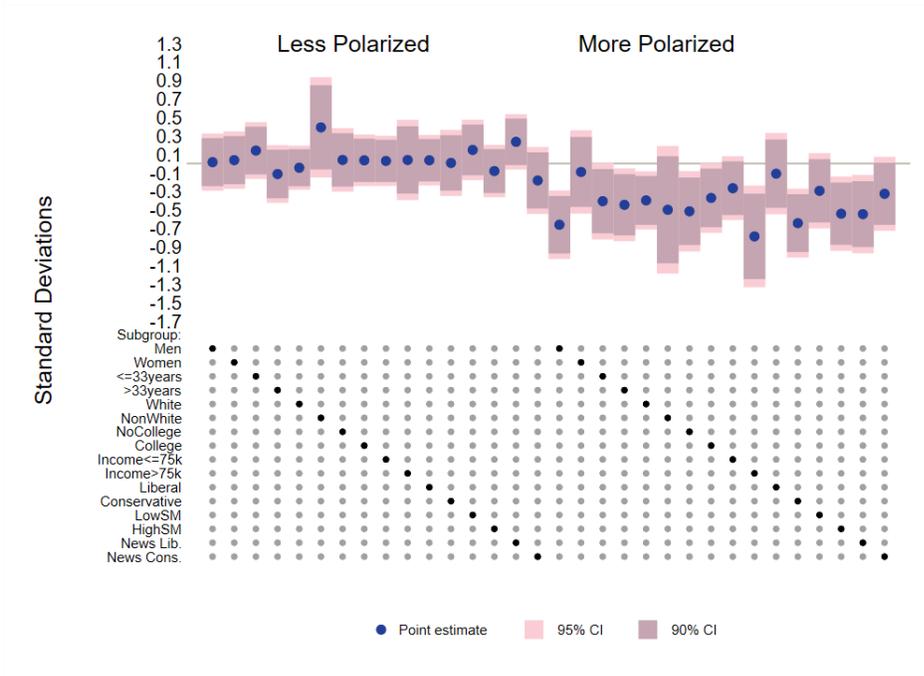


This figure presents the treatment-on-the-treated effects on information and whether an individual thinks the government represents their spending preferences. Both 95 percent and 90 percent confidence intervals are displayed. Results are displayed for various heterogeneous samples.

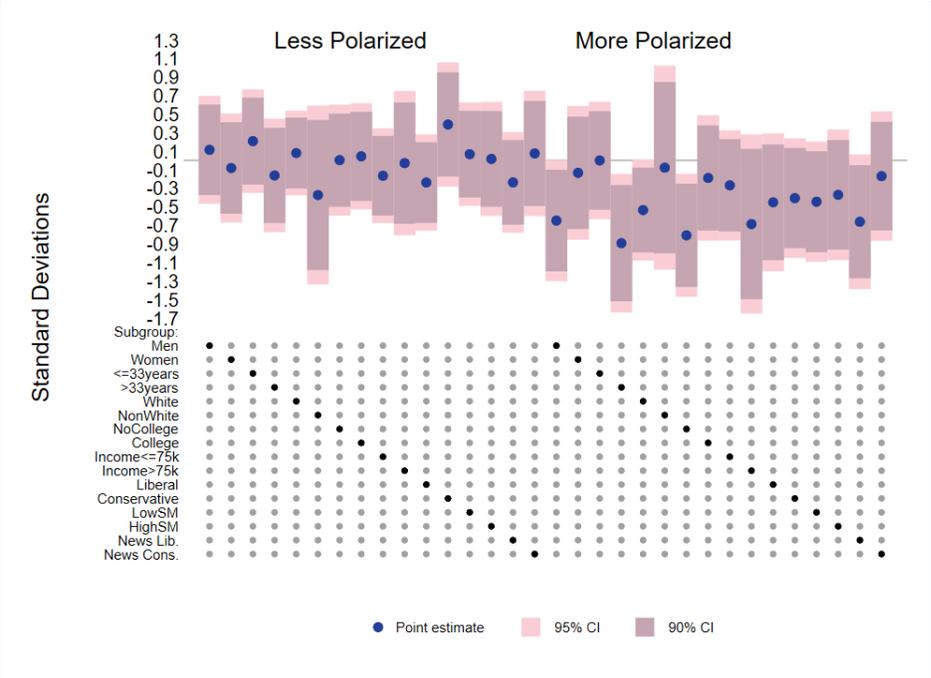
Figure A.5: Heterogeneity of Polarization and Beliefs



(a) Support Index

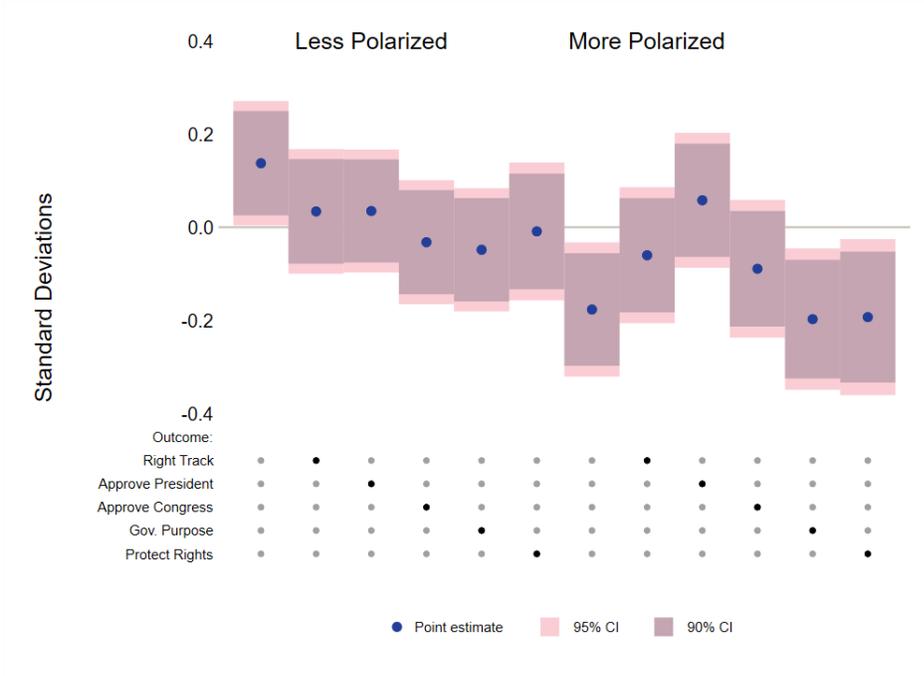


(b) Efficiency Index

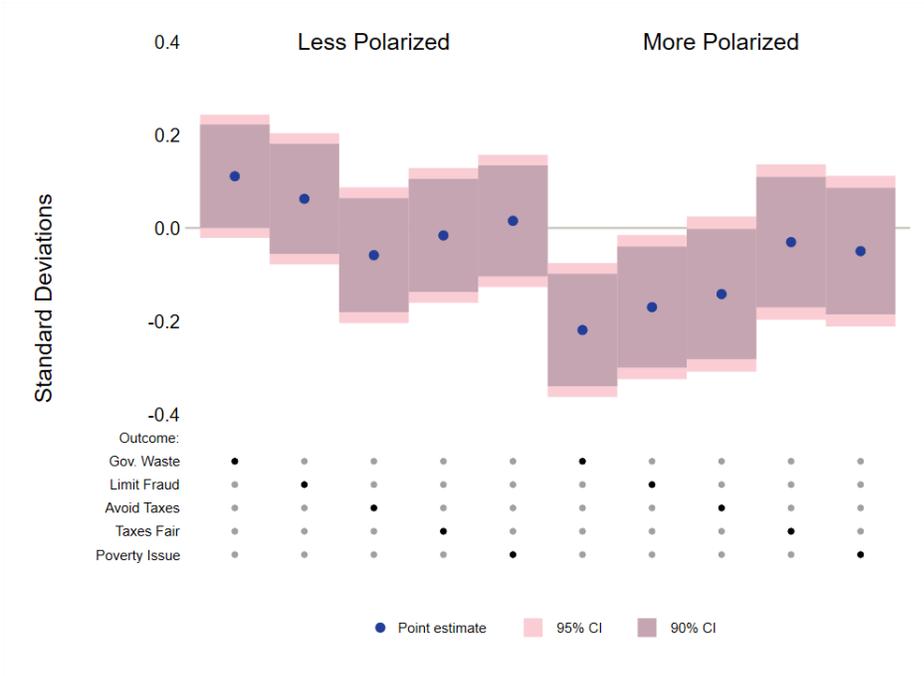


(c) Compromise Index

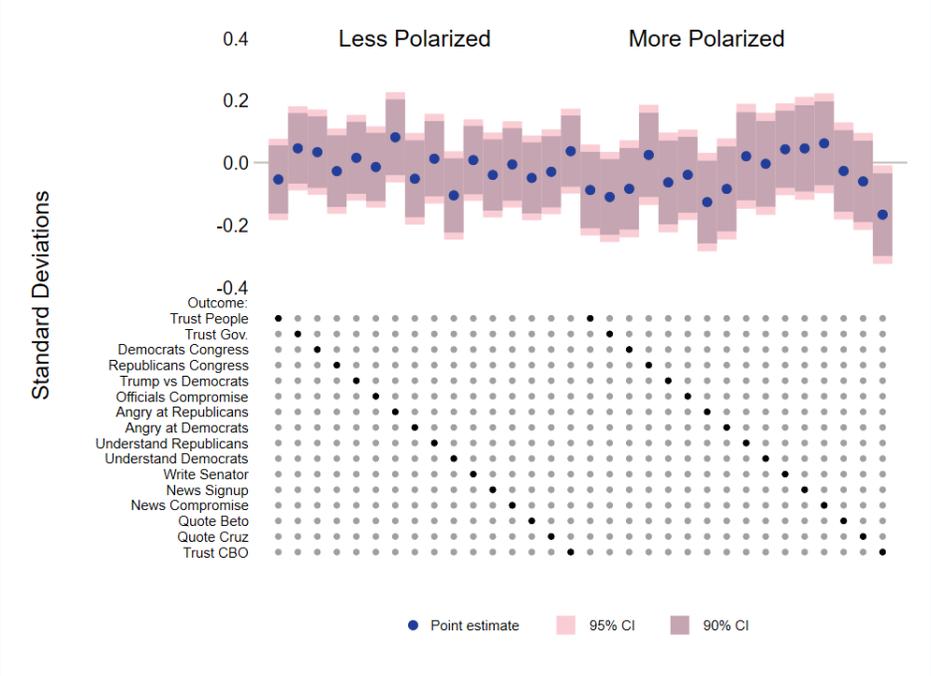
Figure A.6: Individual Outcomes for Polarization and Beliefs



(a) Support Index



(b) Efficiency Index



(c) Compromise Index

B Online Appendix Experiment Instructions

You are invited to participate in a research study conducted by a research team from Texas A&M University. Please read the following information carefully.

In this study, we are trying to learn more about political preferences and associated behaviors. You were selected as a possible participant in this study because you are an MTURK worker. You must be 18 years of age or older to participate. It will take no more than 10 minutes to complete the survey.

If you decide to participate, you will be directed to a survey. This survey will ask you questions about demographics, political preferences, and beliefs about the government. Your participation in this study is voluntary. You can decide not to participate in this research and it will not be held against you. There are no questions in this survey that should cause discomfort. However, you can choose to exit the survey at any point.

You may view the survey host's confidentiality policy at:

<https://www.qualtrics.com/security-statement/>

All information will be kept on a password protected computer and is only accessible by the research team. The results of the research study may be published but no one will be able to identify you.

You will be paid a base payment of \$1.00 for completing this survey. After completing the survey, you will receive a code that you need to enter into MTURK's platform.

Please feel free to ask questions regarding this study. You may contact the research team later if you have additional questions or concerns at political.preferences@gmail.com to talk with the research team.

You may also contact the Human Research Protection Program at Texas A&M University by phone at 1-979-458-4067, toll free at 1-855-795-8636, or by email at irbtamu.edu for additional help with any questions about the research, voicing concerns or complaints about the research, obtaining answers to questions about your rights as a research participant,

concerns in the event the research staff could not be reached, the desire to talk to someone other than the research staff.

If you want a copy of this consent for your records, you can print it from the screen.

C Online Appendix Variable Definitions by Category

Variable Name	Question Text
<i>Category 1: Government Representation and Support</i>	
GovRepWel	When it comes to spending only on Welfare Programs, the current government does a (Bad/Good) job representing my welfare spending preferences.
GovRepMil	When it comes to spending only on Military and Homeland Security, the current government does a (Bad/Good) job representing my military spending preferences.
GovRep	Overall, how well do the current president, congressmen, and senators represent your preferences as a whole?
RightTrack	All in all, do you think things in the U.S. are generally headed in the right direction, or do you feel things are off on the wrong track?
ApproveTrump	In general, do you approve or disapprove of the job Donald Trump is doing as president?
ApproveCongress	In general, do you approve or disapprove of the job that Congress is doing?
GovPurpose	Think more broadly about the purpose of government in general. Where would you rate yourself on a scale of 0 to 100, where 0 means you think the government should do only those things necessary to provide the most basic government functions, and 100 means you think the government should take active steps in every area it can to try and improve the lives of its citizens?
ProtectRights	Please indicate whether you agree or disagree with the following statement: "If I have to resort to violence to protect my rights, I will."
<i>Category 2: Government Efficiency, Fraud, and Waste</i>	
GovWaste	Do you think that people in the government waste a lot of the money we pay in taxes, waste some of it, or don't waste very much of it?
Poverty	Do you think poverty is a serious problem in America?
LimitFraud	Do you agree or disagree with the following statement? "Currently, the federal government is very effective in limiting fraud, waste, and abuse in the programs it administers."

TaxesFair How fair do you think our present federal tax system is? Overall would you say that our tax system is... a) Very fair, b) Not fair at all.

AvoidTaxes Do you agree or disagree with the following statement? "It's really American to avoid paying taxes, legally." -Lindsey Graham

Category 3: Compromise and Trust

Trust Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?

GovDoRight How much of the time do you think you can trust the government in Washington to do what is right?

DemsInCongress Think about the relationship between Democrats in Congress and President Trump. Do you think Democrats in Congress are too inflexible in dealing with the President, are too quick to give in to the President, or are they striking the right balance in dealing with the President?

RepsInCongress Think about the relationship between Republicans in Congress and President Trump. Do you think Republicans in Congress are too inflexible in dealing with the President, are too quick to give in to the President, or are they striking the right balance in dealing with the President?

TrumpVsDems Think about how Donald Trump and Democratic leaders should address the most important issues facing the country. Imagine a scale from zero to 100 where 100 means Democratic leaders get everything they want and Trump gets nothing he wants, and zero means Trump gets everything and Democratic leaders get nothing. Where on this scale from zero to 100 do you think they should end up?"

Officials Which statement comes closer to your view, even if neither is exactly right? I like elected officials who a) Make compromises with people they disagree with, b) Stick to their positions

QuoteBeto Would you like to read a quote about investing in border security from Beto O'Rourke?

AgreeBeto (if QuoteBeto==1) Do you agree with this position? "I have to convince other Democrats and Republicans that it's wise to invest in the U.S.-Mexico border, not just for security, but also for mobility and trade, and that's why we should open up the border."

QuoteCruz Would you like to read a quote about investing in health and welfare from Ted Cruz?

AgreeCruz (if QuoteCruz==1) Do you agree with this position? "I don't think it is government's job to find health care for people. I think it's the individual's job to find health care."

WriteToSenator Writing to the Senators of your state gives you an opportunity to influence government spending. Few citizens email their elected officials. Therefore, Senators and their staff take such emails from their constituents very seriously. If you would like to write to your Senator, go to the official US Senate list and click on your Senator's contact webpage. We are not able to record what you write on the external (Senator's) website, so your letter and private information are kept fully confidential. For our survey, we would just like to know from you: 1) I will send an email to my Senator asking for no change in the current level of spending on social programs. 2) I will send an email to my Senator asking for a decrease in the current level of spending on social programs. 3) I will send an email to my Senator asking for an increase in the current level of spending on social programs. 4) I do not want to email my Senator. 5) Please remind me at another time.

NewsPolarization Thinking back over the last 4 weeks, how many times (Never, One Time, Two Times, Three Times, Four Times, Five or More Times) did you see a news event that... 1) ...made you angry at the Republican Party?, 2) ...made you angry at the Democratic Party?, 3) ...made you better understand the point of view of the Republican Party?, 4) ...made you better understand the point of view of the Democratic Party?

NewsSkew On the scale below, please indicate where you would prefer to get the majority of your news sources from. (Liberal Leaning, Neutral, Conservative Leaning)

Newsletter Would you be interested in signing up for a newsletter from... (if yes, we will begin the sign up process) 1) Vox (skewed liberal), 2) The Atlantic (skewed liberal), 3) Daily KOS (skewed strongly liberal), 4) The Fiscal Times (skewed conservative), 5) National Review (skewed conservative), 6) The Federalist (skewed strongly conservative).

TrustStat

According to the Congressional Budget Office, for an additional \$100, the government distributes \$44 towards Welfare Programs and \$56 towards Military Spending. Do you believe this statistic?
