Evidence Can Change Partisan Minds: 
Rethinking the Bounds of Motivated Reasoning

Jin Woo Kim
Postdoctoral Research Fellow
Program in Quantitative Social Science
Dartmouth College
jin.woo.kim@dartmouth.edu

Job Market Paper

September 30, 2018

Can factual information change partisan opinions? According to theories of partisan-motivated reasoning, citizens maintain their partisan viewpoints by dismissing counter-attitudinal information while uncritically accepting evidence that supports their views. Contrary to the conventional wisdom, I find that citizens sensibly update their opinions about highly contentious issues when presented with new information. In three survey experiments with 7200 participants and an observational study leveraging a sudden flow of new information, my results indicate that people respond to the strength of evidence when processing new information. Partisans changed their policy opinions in the same direction in response to the same information, and often converged toward the evidence. They generally did not diverge except when primed to feel adversarial toward the opposing party or when exposed to arguments loaded with insults. Overall, these results suggest that people may engage in biased information processing when they are induced to feel defensive about their partisan viewpoints, but not by default.

This work was supported by research funds from the Annenberg School for Communication at the University of Pennsylvania and the Program in Quantitative Social Science at Dartmouth College. I thank Joe Cappella, Michael Delli Carpini, Jamie Druckman, D.J. Flynn, R. Kelly Garrett, Seth Hill, Sun-Ha Hon, Devra Moehler, Diana Mutz, Brendan Nyhan, Yunjoong Park, Erik Peterson, Jacob Sohlberg, June Woong Rhee and participants of seminars at the International Communication Association and Midwestern Political Science Association for helpful comments.
The health of democracies depends on whether citizens update their opinions in response to public policies enacted and politicians’ records, especially when strong evidence arises. Many studies have suggested that citizens are unwilling (or even unable) to perform this task (Achen and Bartels 2016; Berelson et al. 1954; Converse 1964; Delli Carpini and Keeter 1996; Zaller 1992). At the center of this skepticism is the theory of partisan-motivated reasoning, which suggests that political opinions are “hot cognitions” charged with affects, which automatically beget the desire to defend (Taber and Lodge 2000; 2006). As a result, people will vigorously discount information that contradicts their beliefs, even to the point of bolstering prior attitudes (Kunda 1990; Lord et al. 1979; Taber and Lodge 2006; Nyhan and Reifler 2010).

Although previous studies have made many claims about how partisan biases and motivated reasoning pervade the ways in which citizens process political information, much of previous evidence is equally consistent with alternative explanations that presume no directional motivation to maintain prior opinions (see Druckman and McGrath 2018 for a review; see also Bartels 2002; Bullock 2009; Gerber and Green 1999). Identifying evidence of motivated reasoning is challenging because this involves establishing that empirical data which shows a pattern consistent with motivated reasoning reflects only the effect of the motivation to defend prior opinions, rather than the effects of various factors (e.g., value preferences) that led people to their prior opinions in the first place. For example, when one invites people to consider a set of pro and con arguments emphasizing different values, people may strengthen their opinions simply because they give more weight to arguments that are in line with their values, not because they are not motivated to defend their priors.

Furthermore, inasmuch as partisan-motivated reasoning occurs, it remains unclear whether people are induced to feel defensive about their partisan viewpoints by certain
contextual factors or whether they are motivated reasoners by default (see Druckman 2012; Flynn et al. 2017; Leeper and Slothuus 2014). Do people always process information about contentious issues in biased ways? Or are there conditions under which people rationally update their opinions about such issues?

In this article, I present four studies that address these issues. In Study 1, I measure the effects of a set of messages about the Affordable Care Act (ACA) that vary in terms of the strength and direction of evidence but no other message features (e.g., value frames) that may interact with individual differences. In the wake of widely covered new information about the ACA, in Study 2, I conduct an observational analysis to generalize the experimental findings of Study 1 to a real-world setting. In Study 3, I estimate the effects of new information about another highly contentious issue (the economic performance of the major parties). In Study 4, I shed light on the theoretical bounds of partisan-motivated reasoning, by conducting an experiment where I randomize the contextual factors that could activate “hot cognitions”: the salience of partisan identity and the incivility of treatment messages. These studies allow me to consider a broad range of conditions under which biased information processing is likely to occur.

Across the four studies involving 7,200 participants, I find that people sensibly respond to the direction and quality of new information. On average, people were persuaded in the direction of information; and they revised their opinions more when provided with (relatively) strong evidence. Furthermore, Democratic participants changed their opinions in the same direction as Republicans in response to the same information and often converged toward the evidence. Attitude divergence (i.e., increased differences in opinions between partisans) occurred only under specific conditions: when participants were primed to feel adversarial toward the
opposing party before receiving the information treatment, or when they received arguments loaded with insults. Finally, I found no evidence of backlash effects even under conditions that are particularly favorable to instigating “hot cognition.”

Overall, these results suggest that people may engage in partisan-motivated reasoning when they are induced to feel defensive about their partisan viewpoints, but not by default. To be clear, this does not mean that motivated reasoning will not occur when people process the usual partisan talking points, similar to the messages used in Taber and Lodge (2006). It means that that motivated reasoning does not necessarily hamper people from sensibly recognizing the diagnostic value of factual information, even when it contradicts their partisan opinions.

In what follows, I revisit the evidence of partisan-motivated reasoning and discuss alternative explanations. I then define a benchmark model of opinion updating, which motivates empirical tests in the four studies subsequently presented. Finally, I discuss the implications of the results.

Revisiting the Evidence of Partisan-Motivated reasoning

Kunda (1990) provided the theoretical underpinnings of motivated reasoning, noting that two general classes of motivations guide how people reason: (1) accuracy goals, which lead people to consider a broad range of alternatives and carefully process relevant information; and (2) directional goals, which are activated when people desire to reach certain conclusions or defend their prior attitudes, usually leading to disconfirmation of information that does not fit with their

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1 This article does not address partisan selective exposure, one of the key components of the motivated reasoning theory (Taber and Lodge 2006). Therefore, all claims made in this article about partisan bias and motivated reasoning do pertain only to how people process counter-attitudinal information, not whether they are exposed to it to begin with.
beliefs. Defensive partisan motivations are assumed to be the general default when it comes to political reasoning (Taber and Lodge 2000; 2006), which makes it unlikely that people change their political opinions based on arguments or evidence that disputes their prior beliefs.

Two broad classes of evidence are offered to support the motivated reasoning theory. First, people evaluate pro-attitudinal information more favorably than information disconfirming their priors (i.e., biased assimilation, or prior attitude effect). Second, people strengthen their pre-existing views after considering counterevidence (polarization or backlash effects). I outline plausible alternative explanations for these findings, focusing on two widely cited studies: Lord et al. (1979) and Taber and Lodge (2006).

The classic evidence on biased assimilation comes from the experiment by Lord et al. (1979), who found that proponents of the death penalty thought the studies showing pro-deterrent information were more “convincing” and “well done,” whereas opponents of the policy favored studies demonstrating the opposite, even though the quality of the studies’ methodology was essentially the same. Biased evaluation of pro- versus counter-attitudinal information is arguably the most well-established finding of motivated reasoning; it is replicated in numerous studies covering a wide range of topics (e.g., Corner et al 2012; Druckman et al. 2013; Edwards and Smith 1996; James and Van Ryzin 2016; Miller et al. 1993; Munro and Ditto 1997; Taber and Lodge 2006; Taber et al., 2009; see Ditto et al. 2018 for a meta-analysis of 51 studies).

However, these findings rely on the assumption that self-reported survey items probing the perceived quality of information or arguments measure just the target concept, nothing else. For example, Lord et al. (1979, 2101) asked their participants “how convincing the study seemed as evidence on the deterrent efficacy of capital punishment.” But subjects may convey not only how they interpreted the provided information but also whether they agreed with its conclusion,
when answering whether they found the information “convincing.” They may be genuinely confused about what they are being asked, or they may purposefully align their answers to such questions with their posterior opinions (see Bullock et al. 2015; Prior et al. 2015).

Insofar as the measurement assumption does not hold, the observed correlation between prior beliefs and perceived information quality may be documenting the remaining disagreement between those starting from different priors. This means that the implicit standard underlying the conventional test of “unbiased assimilation” may have been that people with opposing views should reach the same conclusion after considering the same information. This standard is hard to justify, because it requires people to base their conclusions entirely on the evidence and completely discard their prior knowledge.

It is worth noting that a number of studies documenting biased assimilation have failed to detect evidence of attitude polarization (e.g., Corner et al 2012; James and Van Ryzin 2016; Miller et al. 1993; Munro and Ditto 1997). Given that biased assimilation is theoretically expected to lead people to polarize in the direction of their priors, I interpret this discrepancy—numerous findings of biased assimilation and much rarer findings of polarization—as evidence that conventional measures of biased assimilation lack predictive validity.

This brings us to the mixed evidence for polarization. Importantly, while Lord et al. (1979) found that participants strengthened their views after reading mixed evidence, they did not directly observe opinion change between pre- and post-treatment measures, but instead relied on self-reported opinion change. Subsequent research tapping actual changes failed to replicate Lord et al.’s (1979) findings on polarization (e.g., Guess and Coppock 2018; James and Ryzin 2016; Miller et al. 1993; Munro and Ditto 1997; Wood and Porter 2016). Of course, there are important exceptions (e.g., Nyhan and Reifler 2010; Nyhan et al. 2015; Taber and Lodge 2006;
Taber et al., 2009). In particular, Taber and Lodge’s (2006) highly influential study show that those with opposing views at $T_1$ strengthen their attitudes at $T_2$ after considering a balanced set of pro and con arguments.

However, while such findings of attitude polarization may be driven indeed by motivated reasoning, they are consistent with an alternative explanation that people ground their political judgments on their value preferences. This observational equivalence problem arises because the argument stimuli used by Taber and Lodge were drawn from statements by political interest groups replete with the recurrent pro and con frames in the controversial debates on affirmative action and gun control.

For instance, consider this passage taken from an anti-gun control argument used in Taber and Lodge (2006): “The Bill of Rights guarantees the right of all citizens to bear arms. … A national council reported in 1991 that handgun accidents killed less than 15 children under the age of 6. This number is minuscule when compared to the total number of accidental deaths of young children.” If someone cares little about the Second Amendment and is horrified by the idea of children dying in gun accidents, it is not surprising that she would reject this argument and strengthen her attitude even further after reading it. To describe her opinion updating as biased is to claim that she should have used the same evaluative criteria as someone who cares deeply about the right of self-defense, irrespective of their differences in core values—an untenable standard given the diversity of values among the American public (Jacoby 2014).

This example speaks to a fundamental problem that is common in the motivated reasoning literature: the key independent variable—the motivation to defend a particular position—is not randomized. Researchers mostly rely on pretreatment attitudes or partisanship as a proxy. But since people’s political opinions and partisanship can be correlated with various
factors such as prior knowledge, self-interests and values, the effects of the directional goal are confounded with the effects of various individual factors. For instance, an “unbiased” Democratic voter may give more weight to a piece of pro-Democratic information than a pro-Republican one because (1) the former addresses a sub-topic that she would find much more relevant to her concern or because (2) the former seems much more plausible in light of what her prior knowledge, not because she possesses any desire to maintain her opinion (Druckman and McGrath 2018; Gerber and Green 1999).

In short, researchers should rule out that the observed correlations between prior opinions and post-treatment variables (e.g., argument evaluation or attitude change) reflect the effects of various factors that led people to that opinion in the first place. To that end, I use two strategies in the studies presented below. First, I test the effects of new information that varies only in terms of direction and evidence strength, with other message features held fixed. In doing so, I use the (constant) frames that should be important for Democrats and Republicans alike—e.g., slowing down growth in health care costs. Second, in Study 4, I randomize the motivation to defend partisan opinions by manipulating the salience of partisan identity.

Though fewer than the studies that (are assumed to) document evidence of motivated reasoning, several recent studies have found that people (e.g., Guess and Coppock 2018; Hill 2017; Parker-Stephen 2013; Wood and Porter 2016). In particular, Guess and Coppock (2018) used large survey experiments covering several political issues to show individuals update “correctly” after being exposed to information. I complement their research and other recent studies that demonstrate the effects of substantive information and arguments on policy opinions (e.g., Boudreau and MacKenzie 2014; Bullock 2011; Chong and Druckman 2010; Druckman et al. 2013) and illuminate how political information shapes people’s political opinions by isolating
the effect of evidence strength while holding other message features (e.g., frame) essentially constant. Furthermore, this research—Study 4 in particular—explores a broad range of conditions under which biased information processing is most likely to occur, clarifying the theoretical bounds of motivated reasoning.

A Benchmark Model of Political Opinion Updating

In this section, I specify a benchmark model of political opinion updating—that precisely defines “rationality in the sense of plain reasonableness” (Bartels 2002, 125)—which motivates the empirical tests of motivated reasoning presented afterwards.

Suppose that a Democratic voter, $D$, and a Republican voter, $R$, are learning about the effects of ACA on the American health care system. $D$ is a supporter of the law—she thinks there is an 70% chance that the law will improve the health care system in the long run. $R$ is more skeptical—he thinks there is only a 30% chance. They receive new information regarding the law’s impact on health costs: a subtopic of the issue that both $D$ and $R$ would consider important (Druckman et al. 2012). The information shows that the prices of health insurance premiums have been growing faster than before, since the implementation of the law. They incorporate this new information into their prior beliefs to update their views on the ACA.

I propose three standards for the way $D$ and $R$ should process this information. First, they should understand the direction of the new information. This would prevent people ($D$ in particular) from performing mental gymnastics to think, for example, that skyrocketing premium costs are good news for the pro-ACA position.

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2 As discussed, it is crucial that the topic of information does not interact with the value differences between $D$ and $R$. For example, if the information is about the size of government, $R$ is expected to give more weight to it than $R$, even if they do not engage in motivated reasoning.
Second, D and R must understand the strength of the evidence; that is, they grasp the differences in the diagnostic values of an event that is far more likely to occur when a hypothesis is true than when it is not (strong evidence), and an event that is slightly more likely to occur when the hypothesis is true than when it is not (weak evidence). Accordingly, the opinions of D and R will be influenced more heavily when the information is particularly damning (i.e., it is extremely unlikely to be observed if the ACA were indeed succeeding).³

The third standard is that D and R should interpret the new information in more or less the same ways. Not only do they agree on whether the information has negative implications for the ACA, but they also agree on how bad it is.⁴

In Figure 1, I use Bayes’ rule to formalize belief updating patterns that comport with these standards (Panel 1), and those deviating from the standards (Panels 2 to 4). In each panel, D and R revise their opinions in response to the same new information—that premium prices have been rising. As mentioned, the priors of D and R are, respectively, 0.7 and 0.3. The x-axis represents R’s interpretation of the strength of the evidence, formalized in terms of the likelihood ratio of observing the information under the two opposing hypotheses—how many times more likely it is to observe the information if R were right than if he were wrong—which varies in response to the quality of the presented data. The y-axis is posterior opinions updated in response to the information, expressed in probabilistic terms.⁵

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³ I operationalize evidence strength in terms of the commonly held standards of inferential validity (e.g., Shadish et al. 2002). Accordingly, in the experiments presented below, evidence strength is manipulated such that a piece of strong evidence cites more relevant statistics (construct validity) gathered at the national level (external validity) and documents sizable changes since Obamacare (statistical validity).
⁴ Again, this standard would not make much sense if the information is related to a value that only R (or D) deems important.
⁵ A piece of completely irrelevant information has a likelihood ratio of 1—equally likely whether a hypothesis is true or not. Encountering this, D and R maintain their priors.
Figure 1: Four Patterns of Opinion Updating

Note: The y-axis is posterior belief that the ACA makes health care less expensive, updated in response to new information; the x-axis is R’s perceived evidence strength, formalized in terms of likelihood ratios—x times more likely it is to observe the information if the ACA were failing than the law were working well.

R’s interpretation of the information is the same across both panels, while D’s interpretation varies between panels. In Panel 1, D agrees with R about the diagnosticity of new information (which is consistent with the third standard). For example, when R perceives a piece of new evidence to be twice more likely if the ACA were failing than the law were succeeding,
D perceives the same. Encountering the evidence, R will revise his belief from 0.30 to 0.18; D
revises her opinion from 0.70 to 0.54. The views of D and R converge as a result—i.e., the
difference in their opinions decreases from 0.40 to 0.36. It is worth noting that their
disagreement is not fully resolved although they are in perfect agreement about the empirical
implication of the new information. Barring from a scenario where indisputably clear evidence
arises (i.e., the probability of observing the new information is 100 times higher if R was right
about the ACA than D was right) or where they consume (near) infinite amount of information
about the ACA, the gap between them will persist (Bullock 2009). As such, enduring partisan
disagreement in itself is not evidence of biased information processing.

In Panel 2, D and R update in parallel. Here, D and R meet the first two standards but not
the third one; i.e., both correctly recognize the direction of new information and discern strong
versus weak signals, but D gives less weight to the new negative information than R (Bartels
2002). When compared to Panel 1, we can see that D updates her opinion less than she should in
Panel 2. But for weaker evidence (e.g., a likelihood ratio of 2 to 1 or lower), there is only a
modest amount of convergence in Panel 1; thus, there are few apparent differences between
Panels 1 and 2.

Panel 3 depicts a case in which D ignores contradictory information almost completely;
and as a result, D and R diverge. The violation of the “homogeneous interpretation” standard is
clearer in this case than Panel 2. D also fails to meet the second standard by remaining
unresponsive to the strength of the evidence. In Panel 4, D counterargues against the new

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6 Bullock (2009) shows that two persons interpreting the evidence in the same way may diverge
if one is more confident about his prior beliefs than the other. That is unlikely to be the case in
the experiments presented below, since Democrats and Republicans are expected to have
similarly strong views about the target issues on average (e.g., the ACA).
information and thus persuades herself to strengthen her prior opinion. She fails to comply with any of the standards.

Empirically, one cannot prove people perfectly follow the updating rules as in Panel 1 without a perfect measurement of priors. But one can demonstrate that people, on average, deviate from the rules by showing that they do not converge after encountering the same information. In particular, the motivated reasoning theory predicts that people dismiss or backlash against counter-attitudinal information, in which case we should find divergence or polarization. I examine which opinion updating pattern is prevalent among convergence, parallel change, divergence and polarization. I interpret the last two as evidence of motivated reasoning.

**Study 1: A Survey Experiment on the Affordable Care Act**

*Experimental Design*

Participants were randomly assigned to one of five conditions: placebo, strong con, weak con, weak pro, and strong pro. The placebo group read a message about the debt crisis in Greece. Those assigned to non-placebo conditions received an argument about the ACA’s impact on health costs. I made every effort to make the four arguments as similar as possible except for position and evidence strength. In the con conditions, the arguments said “[D]espite some successes, Obamacare is failing to address one of the most serious problems of America’s healthcare system: the rising costs,” and then presented the health economists’ theoretical explanation (the adverse selection problem). In the pro conditions, the messages claimed that

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7 Convergence is not sufficient evidence of meeting the standards. Assuming $D$ and $R$ have equally strong priors, however, the lack of convergence is evidence of the failure to meet the standards.
8 Appendix A provides the full texts of all arguments used the experiments.
“Obamacare is successfully addressing the rising costs” and then cited again the adverse selection problem as the underlying mechanism.

In all four cases, participants were told “now, there is mounting evidence that that the health economists were right,” followed by four pieces of evidence whose “strength” was pretested. The strong versions are “quasi-experimental” findings that describe (a) noticeable differences (b) at the national level (c) in relevant statistical data. These dimensions, respectively, respond to (a) statistical, (b) external and (c) construct validities (Shadish et al. 2002). I created their weaker counterparts by manipulating some of these dimensions—(a) smaller differences, (b) local-level evidence, and/or (c) arguably irrelevant statistics—as permitted by the information I was able to find. In addition, I included six pieces of evidence—two strong and four weak pieces (as judged by the same criteria). The five messages were similar in length (416 to 462 words).

Procedure

Study 1 was conducted in four waves. The baseline survey measured pre-treatment covariates, including the baseline values of the dependent variables. Survey responses were gathered from 2,029 participants recruited via Amazon’s Mechanical Turk (MTurk) in May 2016. After a week, 1,800 of the initial respondents were invited to participate in the main experiment. Those who failed a screener question and non-U.S. citizens were not invited; 1,514 of the invited respondents completed the second wave.
In Wave 2, participants first answered general political knowledge questions, followed by a screener question. Participants were then provided with the argument to which they were randomly assigned and asked to read it carefully. Next, participants answered post-treatment questions including the items measuring attitudes and beliefs about the law.

Those who took part in the main experiment were invited to take two follow-up surveys. Wave 3 (n = 899) was launched about 80 days after Wave 2 (between late July and early August) in order to assess the longevity of the treatment effects. Wave 4 (n = 850) was launched about 160 days after Wave 2 (between late October and early November).

Results

The key dependent variables are (1) attitude toward the ACA and (2) belief in the ACA’s impact on health costs—whether the law is making health care more or less expensive. They were measured in all four rounds of the study. The dependent variables are rescaled from 0 to 1, where 1 indicates the most positive attitudes/beliefs for the pro-Democratic side (e.g., support for the ACA). The main text focuses mostly on ACA attitude. The estimates on the belief about health costs are provided in Appendix C.

The average treatment effects were estimated using the following regression model:

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9 In all experiments presented in this article, I embedded an attention screener question before treatments (Berinsky et al. 2014). In this article, I focus on the models dropping participants who failed to pass the screener—i.e., “shirkers.” Appendix C reports the results of analyses including the shirkers, which are very similar to those reported in the manuscript.

10 The time that each participant spent on the message page was recorded. Its 99%-trimmed mean was 143 seconds (median = 113 seconds). Most participants (93%) spent at least 30 seconds reading the presented article.

11 Appendix B provides survey wordings used to measure the key variables in Studies 1 to 4.

12 This note applies to Studies 2 and 4, which also draw on the ACA.
\[ Y_i = \beta_0 + \beta_1 \text{StrongCon}_i + \beta_2 \text{WeakCon}_i + \beta_3 \text{WeakPro}_i + \beta_4 \text{StrongPro}_i + \epsilon_i \]  \hspace{1cm} (1)

where \( Y_i \) is the dependent variable, and \( \text{SC}_i, \text{WC}_i, \text{WP}_i, \text{SP}_i \) are dummy variables marking the four treatment conditions to which participant \( i \) was assigned—e.g., \( \text{SC} \) indicates the strong con condition—\( \beta_0 \) is the control group mean, and \( \beta_1, \ldots, \beta_4 \) are treatment effects, and \( \epsilon_i \) is an error term. To maximize statistical precision, I added the pre-treatment values of the two dependent variables and party identification—all thought to be highly predictive of \( Y_i \)—into the model. Throughout this article, I report covariate-adjusted estimates.\(^\text{13}\)

If people update their opinions in the direction of the presented argument while accounting for the certainty of the given evidence, I should find that the effect of strong con < weak con < 0 < weak pro < strong pro (i.e., \( \beta_1 < \beta_2 < 0 < \beta_3 < \beta_4 \)). The regression estimates reported in Table 1 straightforwardly confirm this expectation. All estimates of the treatment effects are correctly signed, correctly ordered and statistically significant. For example, Columns 1 and 2 show the strong con message undercut people’s support for the law by 8 percentage points on average, which is larger than the effect of the weaker version (−4 percentage points). Likewise, the strong pro argument generated larger shift in attitude (5 to 6 points) than the weak pro argument (3 points). The treatment effects on beliefs about health costs are even larger than those on attitude (see Columns 3 and 4).

\(^{13}\) I control for only the pretreatment values of the DVs and partisanship. Appendix C provides estimates without covariate-adjustments (for this and successive experiments). Generally, they are similar to the adjusted estimates but far less precise.
Table 1: Average Treatment Effects on Attitude toward ACA (Study 1)

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<td>Belief in ACA’s Effect on Cost</td>
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<td>Treatment 1: Strong Con (β₁)</td>
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Shirkers (Low-attention Participants) Dropped: Yes No Yes No

Note. * p < 0.05 + p < 0.1. Pound sign (#) indicates significant difference (p < 0.05) between weak versus strong evidence conditions (i.e., between Treatments 1 and 2; and between Treatments 3 and 4). OLS estimates with robust standard errors in parentheses.

Crucially, Table 1 does not tell us anything about whether partisanship colors the incorporation of new information. To examine potential partisan heterogeneity in treatment effects, I estimate the following model:

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14 Keeping the analytic approach consistent across the four studies, I focus on heterogeneous effects by partisanship throughout this article. The key findings are similar when I examine heterogeneous effects by prior attitude (i.e., ACA supporters vs. opponents). See Appendix C (Table C3).
\[ Y_i = \beta_0 + \beta_1 \text{StrongCon}_i + \beta_2 \text{WeakCon}_i + \beta_3 \text{WeakPro}_i + \beta_4 \text{StrongPro}_i + \beta_5 \text{Dem}_i \\
+ \gamma_1 \text{StrongCon}_i \times \text{Dem}_i + \gamma_2 \text{WeakCon}_i \times \text{Dem}_i + \gamma_3 \text{WeakPro}_i \times \text{Dem}_i \\
+ \gamma_4 \text{StrongPro}_i \times \text{Dem}_i + \varepsilon_i \] 

(2)

where Dem\(_i\) is a dummy variable indicating whether participant \(i\) identified with the Democratic Party.\(^{15}\) Due to the interaction terms in the model, \(\beta_1, \ldots, \beta_4\) are now treatment effects among Republicans, \(\beta_1 + \gamma_1, \ldots, \beta_4 + \gamma_4\) are treatment effects among Democrats, and \(\gamma_1, \ldots, \gamma_4\) are partisan difference in treatment effects.

The circles in Figure 2-1 plot the average treatment effects on attitudes toward the ACA among Democrats \((\beta_1 + \gamma_1, \ldots, \beta_4 + \gamma_4)\) and the triangles plot the effects among Republicans \((\beta_1, \ldots, \beta_4)\).\(^{16}\) All eight estimates of the average treatment effects are correctly signed and correctly ordered for both Republicans and Democrats, showing no evidence of attitude polarization. The triangles are placed above the circles across the four information treatments, which indicates that the effects of con arguments are stronger among Democrats, and the effects of pro arguments are stronger among Republicans—leading to convergence in attitudes toward the ACA.

\(^{15}\) Leaning partisans were treated as partisans. Pure independents were excluded from this analysis.

\(^{16}\) Appendix C provides tables detailing the full regression estimates used to produce the figures presented in this article, including alternative specifications (e.g., with or without “shirkers”).
Figure 2-1: Average Treatment Effects on ACA Attitude by Party ID

![Graph showing treatment effects on ACA attitude by party ID.]

Figure 2-2: Difference in Treatment Effects on ACA Attitude by Party ID

![Graph showing difference in treatment effects on ACA attitude by party ID.]

Note. Estimates of Equation 2. The dependent variable is belief that ACA attitude. Estimates are adjusted for pre-treatment ACA opinions and partisanship. Shirkers are dropped from the analyses. Bars are 95% confidence intervals. Democrats and Republicans diverge when a circle is placed above a triangle. They converge when a triangle is placed above a circle.
In Figure 2-2, I report the formal estimates of the partisan differences in treatment effects ($\gamma_1, \ldots, \gamma_4$) with the 95% confidence intervals. Note that $\gamma = 0$ indicates equal (i.e., parallel) updating; $\gamma > 0$ indicates a widening gap between Democrats and Republicans (divergence); and $\gamma < 0$ indicates a narrowing gap (convergence).\textsuperscript{17} Figure 1-2 shows that all four estimates are negatively signed—suggesting convergence in opinions about the ACA. The results suggest that the information treatments reduced the partisan gap in ACA attitudes by 3 to 7 percentage points. A formal F-test rejects the null hypothesis that the sum of these estimates is zero ($P < 0.05$).

Thus far, I have found little evidence that partisans selectively discount and/or backlash against counter-attitudinal information. However, prior research indicates that motivated reasoning is most likely among those with high prior knowledge or strong opinions (e.g., Leeper 2012; Taber and Lodge 2006). It may be that the information treatments bring about attitude divergence or polarization only among such individuals. To examine this possibility, in Appendix D, I re-estimate Equation 2 after splitting the sample by (1) previous knowledge about the ACA, (2) general political knowledge, (3) strength of prior attitude toward the ACA, and (4) strength of partisanship. The results show that the information treatments generally led to convergence in ACA attitudes regardless of such individual factors (see Figure D1).

In Appendix D, I also examine whether the treatment effects I find persist for an extended period of time (see Figure D2). The treatment effects on attitudes toward the law had disappeared entirely by Wave 3 (80 days after the treatment) and remained so until Wave 4 (160 days after).\textsuperscript{18} This eventual decay of information effects can provide a plausible explanation for why partisans

\textsuperscript{17} For example, if negative information about the ACA brings about a larger shift among Republicans than Democrats (i.e., $\beta_1 < \beta_2 + \gamma_1 < 0$), the partisan gap increases by $\gamma_1$.

\textsuperscript{18} The overall effects on beliefs about health costs were observable in Wave 3 ($F(4) = 4.44, p < 0.05$), albeit diminished to about one-third or less of the original estimates. The treatment effects became indistinguishable from zero in the final survey ($p = 0.43$).
continue to disagree about even objective questions even though they appear to be unbiased information processors (see also Bartels 2002; Gerber and Green 1999).

**Study 2: Observational Replication of Study 1**

The first ACA experiment was designed to measure the effects of new information in a closely controlled setting. While it allows for a strong causal inference, the extent to which the findings can be generalized to other contexts is unclear for three reasons (see Shadish et al. 2002, Chap. 3). First, people may have paid unusually close attention to the messages because they were informed that recall questions would follow. Second, the estimates reported above may be specific to the particular characteristics of the experimental stimuli and overall conditions; for example, the effects might have been smaller if the messages were less civil or delivered in the context of heated partisan debates. Third, participants may have guessed the purpose of the experiment and tried to give responses that would confirm the hypothesis—though recent research reports little evidence of such demand effects (Mummolo and Peterson 2018).

In the wake of widely covered new information about the ACA, I reconnected those participated in Study 1 to address these concerns and strengthen the external validity of this research. Specifically, the final follow-up survey to the ACA experiment (Wave 4) was launched on October 26, 2016, two days after the news broke that ACA premiums would increase by an unusually high rate of 22% in 2017. By leveraging this sudden flow of new information, Study 2 provides an excellent opportunity to shed light on how people respond to new information received in a “real world” context—particularly toward the end of one of the most combative presidential campaigns in US history.
Research Design

The survey asked participants if they had been exposed to news about health insurance rates in 2017 over the past few days.\(^\text{19}\) To estimate the effect of this new information, I regressed the Wave 4 dependent variables on the dummy variable indicating whether one received the news, the lagged dependent variables measured in the prior three waves, and partisanship. As with the main experiment, I also estimate a secondary model that includes an interaction between message exposure and a dummy indicating identification with the Democratic Party to examine partisan differences in treatment effects. The identifying assumption is that those who had the same opinions in prior waves would have had the same opinions in the absence of exposure to the premium increase story (Angrist and Pischke 2009, 244). Consistent with this assumption, the exposed and unexposed groups did not differ significantly in their prior opinions measured in Wave 3 conditional on Wave 1 and Wave 2 covariates (see Table C4).

\(^{19}\) 56.5% responded yes; of these, most of them (98.1%) correctly indicated that the news reports suggested premiums would increase the following year.
Results

As shown in Figure 2, receiving the news appears to have lowered people’s support for the law by 2.3 points on average (p < 0.05). The figure illustrates a straightforward case of parallel updating in which Democrats (and Republicans) move in a negative direction after exposure to the unwelcoming information, instead of ignoring it outright or backlashing.

Study 3: A Survey Experiment on Economic Issues

While the ACA is currently one of the country’s most polarizing political issues, it was only two years old when Study 1 was fielded. Therefore, few people knew about the provisions of the law in detail, and fewer still had a comprehensive understanding of the tangible changes that the law had introduced to the American health care system, which might have attenuated the effects of motivated bias (Taber and Lodge 2006). Study 3 complements the main results of Studies 1 and 2, focusing on another contentious, but much older, issue in American politics—which party is strongest at addressing the income inequality problem and improving the nation’s economic performance.

Experimental Design

Respondents (n = 1,200) were recruited via MTurk and completed the survey in April 2016. Each participant was randomly assigned to one of six conditions: strong GDP evidence, weak GDP evidence, strong equality evidence, weak equality evidence, placebo, and control. Those assigned to one of the first four conditions then received an argument about the historic differences in economic performance under Democratic and Republican presidents since the 1950s; the first two focused on equality in income growth and the other two focused on GDP
growth. The arguments all claimed that Democratic presidents have historically performed better than their Republican counterparts, but the factual information provided in the strong conditions outlined larger differences in income equality and GDP growth.

I calculated the facts presented in these conditions using the official data sources cited in the messages: the U.S. Census Bureau for the first two and the National Bureau of Economic Research for the other two. The strong versions of the evidence were taken from replications of Bartels (2008) and Blinder and Watson (2016), who documented significantly better economic performance under Democratic presidents.20 I created the weaker versions of the evidence by unfaithfully replicating their results, looking for model specifications that generate smaller estimates (see Appendix E). Each argument concluded by suggesting that past performance provides important information about the future. The placebo group read a message about the debt crisis in Greece. The control group did not read an argument. Since the placebo message had no impact on the outcomes, I collapse the placebo and control conditions into a single control group in the analyses reported below.

Procedure

The experiment began with questions measuring various pre-treatment covariates, including prior retrospective evaluations of the two major parties, followed by a screener question. Those assigned to the treatment and placebo conditions were then provided with one of the five messages. Next, all participants answered questions measuring the dependent variable—their retrospective and prospective economic evaluations of the major parties. Finally, they were asked to recall the content of the argument.

20 Parts of the arguments used in the experiment were taken directly from Bartels (2012).
Results

The key dependent variables in Study 3 are beliefs about the major parties’ performance on (1) growing the national economy and (2) handling income inequality, each consisting of five items. Higher values of these variables indicate more positive beliefs about the Democratic Party. The average treatment effects are estimated using the following regression equation:

\[ Y_i = \beta_0 + \beta_1 GDPWeak_i + \beta_2 GDPStrong_i + \beta_3 EqualWeak_i + \beta_4 EqualStrong_i + \epsilon_i \tag{3} \]

where \( Y_i \) is the dependent variable, and \( GDPWeak_i, GDPStrong_i, EqualWeak_i, EqualStrong_i \) are dummy variables marking the four treatment conditions to which participant \( i \) was assigned, \( \beta_0 \) is the control group mean, and \( \beta_1, ..., \beta_4 \) are treatment effects, and \( \epsilon_i \) is an error term. To maximize statistical precision, I added the pre-treatment values of the dependent variable items\(^{21}\) and party identification.

Table 2 reports the estimates of Equation 3. As shown in Columns 1 and 2, the argument with weak evidence on GDP growth increased people’s belief that the Democratic Party creates faster economic growth by about \( \beta_1 = 4 \) percentage points. The argument with stronger evidence had a slightly larger impact, raising support for the party by \( \beta_2 = 6 \) points. I estimate that the argument with weaker evidence on the Democratic Party’s handling of income inequality (Columns 3 and 4) increased people’s support for the Democrats insignificantly by 1 to 2 percentage points, whereas the stronger version of the argument had a more noticeable and significant impact, changing people’s beliefs by 4 points (\( p < 0.05 \)).

\(^{21}\) Only one item of each dependent variable was measured before the treatment.
Table 2: Average Treatment Effects of Economic Information

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Column 1: Economic Growth (β)</th>
<th>Column 2: Economic Growth (β)</th>
<th>Column 3: Income Inequality (β)</th>
<th>Column 4: Income Inequality (β)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment 1: Weak GDP Evidence (β₁)</td>
<td>0.045* (0.012)</td>
<td>0.037* (0.011)</td>
<td>0.011 (0.013)</td>
<td>0.007 (0.012)</td>
</tr>
<tr>
<td>Treatment 2: Strong GDP Evidence (β₂)</td>
<td>0.062* (0.012)</td>
<td>0.062* (0.011)</td>
<td>0.020+ (0.012)</td>
<td>0.018+ (0.011)</td>
</tr>
<tr>
<td>Treatment 3: Weak Equality Evidence (β₃)</td>
<td>0.040* (0.011)</td>
<td>0.040* (0.011)</td>
<td>0.016* (0.012)</td>
<td>0.014* (0.012)</td>
</tr>
<tr>
<td>Treatment 4: Strong Equality Evidence (β₄)</td>
<td>0.039* (0.011)</td>
<td>0.035* (0.011)</td>
<td>0.042** (0.012)</td>
<td>0.038** (0.011)</td>
</tr>
<tr>
<td>Pretreat Preference for Dem Party on Economic Growth</td>
<td>0.402* (0.023)</td>
<td>0.401* (0.022)</td>
<td>0.082* (0.022)</td>
<td>0.095* (0.022)</td>
</tr>
<tr>
<td>Pretreat Preference for Dem Party on Equality</td>
<td>0.097* (0.022)</td>
<td>0.091* (0.020)</td>
<td>0.344* (0.027)</td>
<td>0.340* (0.025)</td>
</tr>
<tr>
<td>PID</td>
<td>0.299* (0.021)</td>
<td>0.301* (0.020)</td>
<td>0.165* (0.022)</td>
<td>0.159* (0.021)</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.083* (0.012)</td>
<td>0.088* (0.011)</td>
<td>0.290* (0.014)</td>
<td>0.287* (0.013)</td>
</tr>
<tr>
<td>N</td>
<td>1055</td>
<td>1203</td>
<td>1055</td>
<td>1203</td>
</tr>
</tbody>
</table>

Shirkers Dropped | Yes | No | Yes | No

Note. * p < 0.05, + p < 0.1. # indicates significant difference (p < 0.1) between weak versus strong evidence conditions (i.e., between Treatments 1 and 2 in Columns 1 and 2; between Treatments 3 and 4 in Columns 3 and 4). Bold entries report the effects of treatments relevant to the dependent variables (i.e., the effects of evidence on income equality on preference for the Democratic Party’s handing of income equality in Columns 3 and 4).

To examine partisan differences in treatment effects I also estimate the following equation:

\[
Y_i = \beta_0 + \beta_1 \text{GDPStrong}_i + \beta_2 \text{GDPWeak}_i + \beta_3 \text{EqualStrong}_i + \beta_4 \text{EqualWeak}_i \\
+ \gamma_1 \text{GDPStrong}_i \times \text{Dem}_i + \gamma_2 \text{GDPWeak}_i \times \text{Dem}_i + \gamma_3 \text{EqualStrong}_i \times \text{Dem}_i \\
+ \gamma_4 \text{EqualWeak}_i \times \text{Dem}_i + \epsilon_i \tag{4}
\]

where Demᵢ is a dummy variable indicating whether participant i identified with the Democratic Party. \(\beta_1, ..., \beta_4\) are treatment effects among Republicans, \(\beta_1 + \gamma_1, ..., \beta_4 + \gamma_4\) are treatment
effects among Democrats, \(\gamma_1, \ldots, \gamma_4\) denote the partisan difference in treatment effects. As with Study 1, \(\gamma < 0\) indicates a belief convergence between Democrats and Republicans.

### Table 3: Average Treatment Effects of Economic Information by PID

<table>
<thead>
<tr>
<th></th>
<th>Column (1)</th>
<th>Column (2)</th>
<th>Column (3)</th>
<th>Column (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Belief that Dem Party Produces Faster Economic Growth</td>
<td>Belief that Dem Party Reduces Income Inequality</td>
<td>Belief that Dem Party Reduces Income Inequality</td>
<td>Belief that Dem Party Reduces Income Inequality</td>
</tr>
<tr>
<td>Treatment 1: Weak GDP Evidence</td>
<td>(0.098^*)</td>
<td>(0.082^*)</td>
<td>0.041</td>
<td>0.023</td>
</tr>
<tr>
<td></td>
<td>(0.025)</td>
<td>(0.023)</td>
<td>(0.028)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>Treatment 2: Strong GDP Evidence</td>
<td>(0.090^*)</td>
<td>(0.087^*)</td>
<td>0.021</td>
<td>0.015</td>
</tr>
<tr>
<td></td>
<td>(0.026)</td>
<td>(0.023)</td>
<td>(0.025)</td>
<td>(0.023)</td>
</tr>
<tr>
<td>Treatment 3: Weak Equality Evidence</td>
<td>0.051*</td>
<td>0.053*</td>
<td>(0.002)</td>
<td>(0.008)</td>
</tr>
<tr>
<td></td>
<td>(0.023)</td>
<td>(0.023)</td>
<td>(0.028)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>Treatment 4: Strong Equality Evidence</td>
<td>0.043*</td>
<td>0.034</td>
<td>(0.033)</td>
<td>(0.032)</td>
</tr>
<tr>
<td></td>
<td>(0.022)</td>
<td>(0.021)</td>
<td>(0.025)</td>
<td>(0.023)</td>
</tr>
<tr>
<td>Weak GDP (\times) Democrat (\gamma_1)</td>
<td>-0.079*</td>
<td>-0.068*</td>
<td>-0.042</td>
<td>-0.023</td>
</tr>
<tr>
<td></td>
<td>(0.029)</td>
<td>(0.027)</td>
<td>(0.032)</td>
<td>(0.031)</td>
</tr>
<tr>
<td>Strong GDP (\times) Democrat (\gamma_2)</td>
<td>-0.054+</td>
<td>-0.049+</td>
<td>-0.007</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(0.029)</td>
<td>(0.027)</td>
<td>(0.029)</td>
<td>(0.026)</td>
</tr>
<tr>
<td>Weak Equality (\times) Democrat (\gamma_3)</td>
<td>-0.019</td>
<td>-0.025</td>
<td>(0.011)</td>
<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(0.027)</td>
<td>(0.026)</td>
<td>(0.031)</td>
<td>(0.030)</td>
</tr>
<tr>
<td>Strong Equality (\times) Democrat (\gamma_4)</td>
<td>-0.010</td>
<td>-0.004</td>
<td>(0.012)</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>(0.026)</td>
<td>(0.025)</td>
<td>(0.029)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>N</td>
<td>936</td>
<td>1070</td>
<td>936</td>
<td>1070</td>
</tr>
<tr>
<td>Shirkers Dropped</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Note. * \(p < 0.05\) + \(p < 0.1\). Bold entries report the effects of treatments relevant to the dependent variables.

In Table 3, all 16 estimates of the \(\beta\) coefficients (i.e., the average treatment effects of pro-Democratic information for Republicans) are correctly signed, and 7 of these estimates are statistically significant. The estimates of \(\gamma_1\) and \(\gamma_2\) in Columns 1 and 2 indicate that the GDP information treatments had a stronger influence on beliefs about economic growth among Republicans, closing the partisan gap by 5 to 8 percentage points \((p < 0.1)\). In Columns 3 and 4, I estimate that the treatment effects on beliefs about equality are nearly identical among
Republicans and Democrats, leading to parallel belief updating. Overall, the findings are generally consistent with the ACA experiment.

**Study 4: A Follow-Up ACA Survey Experiment Testing the Effects of Incivility and Partisanship Primes**

The results presented so far have shown little evidence that is consistent with the directional-motivated reasoning theory across different issues and individual traits and contexts (experimental versus real-world). For the most part, I have found that new information leads partisans to converge or change in parallel. Study 4 was designed to examine whether this conclusion holds even under theoretical conditions that are particularly favorable to instigating “hot cognition” (Taber and Lodge 2006) or whether people become more closed-minded under such circumstances.

I used two approaches to create an environment that could amplify participants’ desire to defend partisan viewpoints, extending from the instruments used in the first ACA experiment. First, I added treatment conditions where participants were asked to read uncivil versions of arguments about the ACA that mimic how partisan media usually cover political issues (Levendusky 2013, Chapter 2). Second, I randomized partisanship prime conditions in which half of the participants were induced to feel loyal toward their own party and adversarial to the opposing party, and the other half of the participants were ambivalent (Lavine et al. 2012).
Experimental Design

I randomly assigned participants to one of 10 conditions in a 2 (ambivalent vs. univalent partisanship prime conditions) by 5 (placebo, civil con, uncivil con, civil pro and uncivil pro message conditions) factorial design.

Following Lavine et al. (2012) and Klar (2014), I asked those assigned to the ambivalent partisanship condition to write reasons why they are dissatisfied with their own party, and those assigned to the univalent condition to write why they prefer their own party and dislike the other party.\(^{22}\)

The civil versions of the arguments are taken from the arguments (with strong evidence) used in Study 1 with some modifications. The uncivil versions are identical to the civil versions in substance, but they included several insulting comments aimed at the other side. For example, the uncivil version of the pro-ACA argument called the Trump administration “irresponsible and despicable” and Republicans in Washington “idiotic” and so on.\(^{23}\) Participants in the placebo condition read a message about the debt crisis in Greece.

Procedure

A total of 4,506 participants, recruited via MTurk, completed the experiment in August 2018. They first answered questions measuring various pre-treatment covariates, including prior ACA attitude, partisanship and demographic traits, followed by a screener question (Berinsky et al.

\(^{22}\) I conducted a manipulation check based on differences in feeling thermometer ratings of in-party vs. out-party (each ranging 0-100) and found that the univalent prime increased affective polarization by 6 to 7 points relative to the ambivalent prime (\(p < 0.05\)).

\(^{23}\) The uncivil anti-ACA message used the same language to attack the Democratic side. A manipulation check shows the civil arguments score much higher (0.82) than the uncivil ones (0.24) on a perceived civility scale ranging from 0 to 1.
Participants then engaged in one of the partisanship priming tasks, and subsequently received one of the five messages to which they were randomly assigned. Next, they answered posttreatment survey items including attitudes and beliefs about the law.

Results

Before examining the moderating effect of the partisan identity primes, I examine the effects of message treatments averaged across the prime conditions. I estimate the following model:

\[
Y_i = \beta_0 + \beta_1 \text{CivilCon}_i + \beta_2 \text{UncivilCon}_i + \beta_3 \text{CivilPro}_i + \beta_4 \text{UncivilPro}_i + \beta_5 \text{Dem}_i \\
+ \gamma_1 \text{CivilCon}_i \times \text{Dem}_i + \gamma_2 \text{UncivilCon}_i \times \text{Dem}_i + \gamma_3 \text{CivilPro}_i \times \text{Dem}_i \\
+ \gamma_4 \text{UncivilPro}_i \times \text{Dem}_i + \epsilon_i
\]  

(5)

where \(\text{CivilCon}_i\), \(\text{UncivilCon}_i\), \(\text{CivilPro}_i\), and \(\text{UncivilPro}_i\) are the message treatment conditions, \(\text{Dem}_i\) is a dummy variable indicating whether participant \(i\) identified with the Democratic Party, \(\beta_1, ..., \beta_4\) are treatment effects among Republicans, \(\beta_1 + \gamma_1, ..., \beta_4 + \gamma_4\) are treatment effects among Democrats, and \(\gamma_1, ..., \gamma_4\) represent partisan differences in treatment effects. Consistent with Studies 1 and 2, the key dependent variable is attitude toward the ACA.\(^{24}\) Both variables were scaled to range from 0 to 1, where 1 indicates the strongest support for the law. To maximize statistical precision, I control for a pre-treatment ACA attitude item and party identification.\(^{25}\)

\(^{24}\) See Appendix C for treatment effects on the belief that the ACA is making health care more/less expensive.

\(^{25}\) Only one of the four items on ACA attitude was measured both before and after the treatments.
Figure 4-1: Average Treatment Effects on ACA Attitude by PID

![Figure 4-1: Average Treatment Effects on ACA Attitude by PID]

Figure 4-2: Difference in Treatment Effects on ACA attitude by PID

![Figure 4-2: Difference in Treatment Effects on ACA attitude by PID]

Note. Estimates of Equation 5. The dependent variable is ACA attitude. Estimates are adjusted for pre-treatment ACA opinions and partisanship. Shirkers are dropped from the analyses. Bars are 95% confidence intervals. Democrats and Republicans diverge when a circle is placed above a triangle. They converge when a triangle is placed above a circle.
Figure 4-1 displays the treatment effects on ACA attitudes among Democrats and Republicans. Consistent with the possibility that inflammatory rhetoric may exacerbate defensive reactions, the figure shows that incivility reduces the effects of arguments that contradict respondents’ beliefs (e.g., pro arguments among Republicans) to a slightly larger degree than the effects of information that supports prior beliefs (e.g., pro argument among Democrats). Figure 4-2 provides formal estimates of partisan differences in treatment effects; while all four message treatments widened the partisan gap somewhat, only the uncivil ones caused statistically significant divergence. An F-test testing the null hypothesis that partisan differences in the effects of uncivil arguments are the same for civil and uncivil arguments ($\gamma_1 + \gamma_3 = \gamma_2 + \gamma_4$) is rejected ($F = 2.94, p < 0.1$).

I now turn to the conditioning role of partisan primes. Figure 5 show how people change their attitudes and beliefs about the ACA when they are induced to feel ambivalent (Panel 1) or univalent (Panel 2) about their partisan identity. As illustrated in Figure 6-1, ambivalent partisans’ attitudes changed more or less in tandem, though the pattern depended somewhat on the level of civility of the messages (see Panel 1). When univalent partisan identity was made salient, however, Republicans responded more strongly to the con arguments than Democrats, and Democrats responded more strongly to the pro arguments than Republicans (see Panel 2). Indeed, I estimate the effects of the pro-ACA messages on univalent Republicans to be about zero. In Figure 5-2, I show that all four arguments created statistically significant attitude divergence (see Panel 2).

---

26 To preview the results below, the small diverging effect of civil arguments on ACA attitude is driven entirely by those in the univalent prime condition.

27 The estimates are drawn from a regression model that extends Equation 5 by including a three-way interaction among (1) message treatments, (2) priming treatments, and (3) a Democrat dummy, and their lower-order terms (see Appendix C for full regression results).
Figure 5-1: Treatment Effects on ACA Attitude by PID Primes

Figure 5-2: Partisan Difference in Treatment Effects on ACA Attitude by PID Primes

Note. Estimates of Equation 5, interacted with partisanship prime conditions. The dependent variable is ACA attitude. Estimates are adjusted for pre-treatment ACA opinions and partisanship. Shirkers are dropped from the analyses. Bars are 95% confidence intervals. Democrats and Republicans diverge when a circle is placed above a triangle. They converge when a triangle is placed above a circle.
I note that the widening partisan gap documented here is a relatively straightforward case of directional-motivated reasoning, and is not susceptible to the various alternative explanations considered above. In particular, recall the argument that people may remain unaffected by information that contradicts their beliefs simply because they perceive it to be implausible in light of their prior knowledge—not because they are motivated to defend this prior knowledge (Druckman and McGrath 2018; Gerber and Green 1999). This particular alternative hypothesis cannot explain why we see patterns of attitude divergence only among those in the univalent prime condition, because the new contradictory information should have seemed equally plausible (or equally implausible) to both groups, inasmuch as one can assume that the primes altered people’s desire to defend their prior opinions, but not the priors per se. That said, it is also worth highlighting that I find no evidence of significant backlash in the adversarial partisan context created in Study 4, which is consistent with the findings from Studies 1 to 3.

Discussion
The importance of what citizens know about politics depends on the assumption that they can refine their opinion when faced with new information. The theory of partisan-motivated reasoning presents a formidable challenge to civic competence, since it suggests that people will remain unmoved or bolster their prior opinions when confronted with counter-attitudinal information. I find only conditional support for this claim.

Across the four studies I found that people are more rational informational processors than they are often credited with. For the most part, people revised their views according to the direction and quality of new information. More importantly, partisans updated their opinions in

Consistent with this assumption, I find that neither priming nor its interaction with partisanship had a significant effect on ACA attitudes among those in the placebo group.
very similar ways and often converged toward the evidence. Evidence of motivated reasoning was observed as well, but only under the most favorable theoretical conditions (e.g., when exposed to arguments replete with partisan attacks). Consistent with recent studies (e.g., Guess and Coppock 2018; Wood and Porter 2018), I found no evidence of backlash effects. Overall, these results suggest that partisan-motivated reasoning is more conditional than is often assumed (e.g., Taber and Lodge 2000). To the extent that people process political information in biased ways, they may do so because they are induced to feel defensive about their partisan viewpoints, but not by default.

To be clear, I do not interpret these findings as evidence that partisan-motivated reasoning never (or rarely) affects how citizens see the polarized political world, where public officials routinely exchange insults. If anything, the findings from Study 4, in particular, appear to indicate that the evocative messages used in Taber and Lodge (2006) may well have activated the directional goal and exacerbated attitude polarization. Given the increasingly adversarial current political information environment, one may also argue that this article explains why the theory of partisan-motivated reasoning is more relevant today than in the past.

But my findings suggest that, in the right circumstances, evidence can change partisan minds. And these circumstances are not as limited as previously thought. People are expected to have strong priors and emotional attachment to polarized and salient issues such as the ACA—conditions that are likely to attenuate the treatment effects of new information. But we saw fairly sensible opinion updating in the experiments involving such issues. One may expect people to become particularly impervious to contradictory-information during an election campaign, when they fervently want their party to win. But this expectation is inconsistent with the findings of the
observational analysis (Study 2), which drew on a story that broke near the end of the 2016 presidential campaign—arguably the most combative election in recent years.

I acknowledge there is an important body of evidence demonstrating “backfire” effects, whereby people strengthen their prior opinions when exposed to counterevidence (Nyhan and Reifler 2010; Nyhan et al. 2014). These findings are more directly at odds with mine, because they document the effect of factual information—not ideological arguments, as in Taber and Lodge (2006). Yet it is also worth noting that the prevalence of such a backlash is in dispute, as more recent studies have found little or mixed evidence (Guess and Coppock 2018; Hill 2017; Wood and Porter 2016). Taken as a whole, further clarifying the bounding conditions of motivated reasoning remains a crucial avenue for future research. To that end, I discuss three conditions under which my findings may not hold.

First, the experiments presented above were designed to isolate the effect of a single piece of information. One important possibility unexamined in this study is that the force of counterevidence arises only in the absence of a challenge and recedes to null or even backfires in a competitive environment. Studies on the inoculation theory (McGuire 1964) have found that warning people about future persuasive attempts and preemptively discrediting the argument helps people resist them (e.g., Pfau et al. 2001), even when the “preemption” does not provide specific evidence against the forthcoming message (see Banas and Rains 2010 for a meta-analysis). Conspiracy theorists, partisan media commentators and (some) politicians frequently accuse the “mainstream” media of dishonesty and bias (see Jamieson and Cappella 2008). Doing so may lead people to think that contradictory information simply proves the other side is biased, and thus reinforce their prior opinions. Future research should examine this possibility.
Second, the generalizability of the experiments presented in this research should depend on the extent to which the effects of evidence are moderated by the characteristics of the political issue in question. People are expected to have strong priors and emotional attachment to polarized and salient issues: the two issues examined in this study were chosen precisely for this reason. But at least for certain issues, people may not change their minds after hearing facts and arguments. It is worth noting, in this regard, that the experiments focused on “valence issues” for which the end goals are uncontroversial: most people want better and cheaper healthcare for everyone. The disagreement is about the means—i.e., can the ACA achieve these goals? One can at least imagine some strong empirical evidence that can provide a straightforward answer to questions like this. But the core disagreement between the opposing sides of moral issues such as pro-life/pro-choice boils down to the question of what’s right and wrong. Defining an empirical approach that would tease out the effects of motivated bias from the effects of value differences for such issues awaits future work.

Third, certain features of the treatment messages may have made it more likely to find results consistent with the evidence-based persuasion model. And I do not claim that the messages are representative of political messages in the current environment. Notably, the effects of counter-attitudinal information were attenuated when they contained uncivil comments. One can imagine that even less civil versions of the treatment messages could make people’s partisan identity even more salient, triggering more defensive motivated reasoning and attitude polarization. I leave this question for future research as well.

Importantly, the messages were atypical of the usual political discourse in that the participants in the experiments received a wealth of statistical evidence that is more detailed and probably better explained than the political arguments they typically encounter in other contexts.
But that was precisely the point of the experiments—to examine how people behave in a counterfactual condition that helps them understand the evidence and the argument and make up their minds. The finding that under these conditions they do follow a rational belief updating model has important implications for the debate about citizen competence and how to improve the political information environment.

Reference


Corner, Adam, Lorraine Whitmarsh, and Dimitrios Xenias. "Uncertainty, scepticism and attitudes towards climate change: biased assimilation and attitude polarisation."

*Climatic change* 114: 463-478.


Druckman, James N and Mary McGrath. 2018. Climate Change Preference Formation: Motivated Reasoning, Framing, and Unanswered Questions


Guess, Andrew, and Alexander Coppock. 2018. "Does counter-attitudinal information cause backlash? Results from three large survey experiments." British Journal of Political Science


Appendix A: Treatment Messages

Study 1 Messages

Strong Con

A checkup for the Affordable Care Act reveals a warning sign (ACA version)

Since the passage of the Affordable Care Act, health experts have been keeping close taps on how the law is changing America’s health care system.

What is the prognosis, almost three years into implementation? Despite some successes, Obamacare is failing to address one of the most serious problems of America’s health care system: the rising costs.

This isn't surprising to many health economists who had argued that the ACA would accelerate growth in health care costs from the beginning.

Here’s why: The ACA requires health insurance providers to offer health insurance policies at the same price to all persons, regardless of their health conditions. This regulation would almost certainly increase medical costs for healthy people and lead some of them to exit the insurance market, causing costs to rise even more.

It is extremely important to have enough healthy people in the market to control the rising health care prices, but the ACA does just the opposite.

Because of this “adverse selection” problem, the health economists have said that the law would make medical care even more expensive than would have been the case otherwise, and we would see much faster growth in health spending over the next ten years.

Now, there is mounting evidence that the health economists were right.

1. Earlier this year, the Kaiser Family Foundation released an analysis showing that premiums in the ACA Marketplaces were rising by 10.1% on average nationwide, and above 30% in some states.

2. A new study by a Yale economist finds that, during the first two quarters after the reform, premiums in the individual health insurance market increased by 24.4% than what they would have without Obamacare across all states.

3. According to the 2015 annual health benefits survey by the Kaiser Family Foundation, the average deductible for employer-sponsored health insurance has increased by 22.0% over the two years after the reform.

4. The latest national health expenditure data released by the Centers for Medicaid and Medicare Services shows that the annual growth in national spending on health insurance was 6.2% in 2014. This was much higher than the annual growth rate before the reform (3.0%).

So no matter how you look at the data, the evidence is clear. The Affordable Care Act is not sustainable, and is likely to implode down the road if the current trend continues.

Then, what should be done? This question continues to frustrate many legislators and experts. What is unhelpful, though, is the unwillingness to recognize the warning signs.

Weak Con

A checkup for the Affordable Care Act reveals a warning sign (ACA version)

Since the passage of the Affordable Care Act, health experts have been keeping close taps on how the law is changing America’s health care system.
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Because of this “adverse selection” problem, the health economists have said that the law would make medical care even more expensive than would have been the case otherwise, and we would see much faster growth in health spending over the next ten years.

Now, there is mounting evidence that the health economists were right.

1. Earlier this year, the Kaiser Family Foundation released an analysis showing that premiums in the ACA Marketplaces were rising by 4.7% in Cheyenne, Wyoming.
2. A new study by a Yale economist finds that, during the first two quarters after the reform, premiums in the individual health insurance market increased by 1.4% than what they would have without Obamacare in Maryland.
3. According to the 2015 annual health benefits survey by the Kaiser Family Foundation, the average premium for employer-sponsored health insurance has increased by 7.3% over the two years after the reform.
4. The latest data released by the American Society for Aesthetic Plastic Surgery shows that the annual growth in spending on cosmetic surgeries was 8.5% in 2015. This was higher than the annual growth rate before the reform (7.5%).

So no matter how you look at the data, the evidence is clear. The Affordable Care Act is not sustainable, and is likely to implode down the road if the current trend continues.

Then, what should be done? This question continues to frustrate many legislators and experts. What is unhelpful, though, is the unwillingness to recognize the clear warning signs.

Strong Pro

A checkup for the Affordable Care Act reveals a positive prognosis (ACA version)

Since the passage of the Affordable Care Act, health experts have been keeping close taps on how the law is changing America’s health care system.

What is the prognosis, almost three years into implementation? Despite some problems, Obamacare is successfully addressing one of the most serious problems of America’s health care system: the rising costs.

This isn’t surprising to many health economists who had argue that the ACA would slow down growth in health care costs from the beginning.

Here's why: the ACA provides several incentives for previously uninsured healthy people to join the insurance pool. Before the ACA, medical costs were so high mainly because those buying insurance were sicker than average, which in turn led some healthy people to exit the insurance market, causing costs to rise even more.

It is extremely important to have enough healthy people in the market to control the rising health care prices, and the ACA does just that.

Since the ACA solves this “adverse selection” problem, the health economists have said that the law would make medical care less expensive than would have been the case otherwise, and we would see much slower growth in health spending over the next ten years.

Now, there is mounting evidence that that the health economists were right.
1. Confirming the health economists’ key assumption about expanding the insurance pool, an analysis by the Department of Health and Human Services indicates that the uninsured rate for non-elderly adults has decreased by 43%, over the two years after the reform.

2. According to a report by the Kaiser Family Foundation, the overall premium for employer-sponsored health insurance rose by 3.8% each year since the reform. By contrast, during the Bush years, premiums increased on average by 8.8% each year.

3. According to the latest data released by the Centers for Medicaid and Medicare Services, the annual growth in national out-of-pocket spending was 1.3% in 2014. Again this is lower than the annual growth rates under Bush (5.6% on average).

4. Earlier this year, Kaiser Family Foundation released an analysis showing premiums in the Obamacare Marketplaces decreased by 0.7% nationwide, after accounting for tax credits. In comparison, the national individual health insurance premium had increased by 10 to 12% per year before the reform, according to an analysis by an MIT economist.

So no matter how you look at the data, the evidence is clear. The Affordable Care ACT is fixing the problem that would have made the system far worse than it is now.

Of course, the law is not perfect by any means and there should be debates about how to make more progresses. What is unhelpful, though, is the unwillingness to recognize the positive signs.

Weak Pro

A checkup for the Affordable Care Act reveals a positive prognosis (ACA version)

Since the passage of the Affordable Care Act, health experts have been keeping close taps on how the law is changing America’s health care system.

What is the prognosis, almost three years into implementation? Despite some problems, Obamacare is successfully addressing one of the most serious problems of America’s health care system: the rising costs.

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It is extremely important to have enough healthy people in the market to control the rising health care prices, and the ACA does just that.

Since the ACA solves this “adverse selection” problem, the health economists think that the law would make medical care less expensive than would have been the case otherwise, and we would see much slower growth in health spending over the next ten years.

Now, there is mounting evidence that that the health economists were right.

1. Confirming the health economists’ key assumption about expanding the insurance pool, a recent Gallup poll indicates that the uninsured rate for U.S. adults (ages 18 or older) has decreased by 1% point over 2015.

2. According to the data released by the Centers for Medicaid and Medicare Services, private sector spending on medical research rose by 5.2% since the reform. By contrast, during the Bush years, private sector spending on medical research increased on average by 7.2% each year.

3. According to the 2015 survey by the American Society for Aesthetic Plastic Surgery, the annual growth in spending on cosmetic surgeries was 8.5% in 2015. Again this was lower than the annual growth rates under Bush (9.8% on average).

4. Earlier this year, the Kaiser Family Foundation released an analysis showing premiums in the Obamacare Marketplaces decreased by 7.1% in Louisville, Kentucky. In comparison, the national individual health insurance premium had increased by 10 to 12% per year before the
reform, according to an analysis by an MIT economist. So no matter how you look at the data, the evidence is clear. The Affordable Care ACT is fixing the problem that would have made the system far worse than it is now. Of course, the law is not perfect by any means and there should be debates about how to make more progresses. What is unhelpful, though, is the unwillingness to recognize the positive signs.

Placebo

Germans Forget Postwar History Lesson on Debt Relief in Greece Crisis

It is not hard to notice hypocrisy in Germany’s insistence that Athens must agree to more painful austerity before any sort of debt relief can be put on the table: The main creditor demanding that Greeks be made to pay for past profligacy benefited not so long ago from more lenient terms.

But beyond serving as a reminder of German hypocrisy, the history offers a more important lesson: These sorts of things have been dealt with successfully before. The 20th century offers a rich road map of policy failure and success addressing sovereign debt crises.

The good news is that by now economists generally understand the contours of a successful approach. “I’ve seen this movie so many times before,” said Carmen M. Reinhart, a professor at the Kennedy School of Government at Harvard who is perhaps the world’s foremost expert on sovereign debt crises. “It is very easy to get hung up on the idiosyncrasies of each individual situation and miss the recurring pattern.”

The recurring, historical pattern? Major debt overhangs are only solved after deep write-downs of the debt’s face value. The longer it takes for the debt to be cut, the bigger the necessary write-down will turn out to be. Nobody should understand this better than the Germans. It’s not just that they benefited from the deal in 1953, which underpinned Germany’s postwar economic miracle.

Twenty years earlier, Germany defaulted on its debts from World War I, after undergoing a bout of hyperinflation and economic depression that helped usher Hitler to power. It is a general lesson about the nature of debt from the World War I defaults of more than a dozen countries in the 1930s to the Brady write-downs of the early 1990s.

Both of these episodes were preceded by a decade or more of negotiations and rescheduling plans that — not unlike Greece’s first bailout programs — extended the maturity of debts and lowered their interest rate. But crises ended and economies improved only after the debt was cut. A new study found sharp economic rebounds after the 1934 defaults — which cut debtors’ foreign indebtedness by at least 43 percent, on average — and the Brady plan, which sliced debtors’ burdens by an average of 36 percent.

The crisis exit in both episodes came only after deep face-value debt write-offs had been implemented. Softer forms of debt relief, such as maturity extensions and interest rate reductions, are not generally followed by higher economic growth or improved credit ratings.

Yet Policy makers have yet to get this. It took a decade or more from the onset of the Latin American debt crisis to the Brady deal. Brazil alone had six debt restructurings. Similarly, the generalized defaults of 1934 followed more than a decade of failed half-measures. Does Greece have to wait that long, too?

Study 3 Messages

Equality Strong

On income inequality, Republicans have a data problem

According to The Washington Post’s Philip Rucker and Dan Balz, “Economic mobility, and the feeling of many Americans that they are being shut out from the nation’s prosperity, will be a defining theme of the 2016 campaign.”

Republican presidential hopefuls have signaled their interest in addressing the issue of stagnating
working-class incomes. “[O]nly conservative principles can solve it by removing the barriers to upward mobility,” as one conservative Super PAC puts.

How, exactly? Republicans offer the familiar recipe of smaller government, significant tax cuts across the board and fewer regulations — a strategy that would help business, boost growth, create jobs and ultimately boost working-class incomes.

Democrats, of course, have different solutions — more active government, higher taxes on the rich, lower taxes on the poor, and higher minimum wages. They promise that these policies will raise incomes for the working class, which will in turn create a larger number of consumers and a more dynamic economy overall.

Voters called upon to bet on these promises often find themselves much in the dark. Americans looking for skillful economic leadership from the White House would be better served by considering the long-term economic performance of Democratic and Republican presidents.

People readily grasp the diagnostic value of long-term performance in other walks of life. A judge has ruled that poker is more skill than luck; though luck may beat skill in any given hand, the better player is very likely to win in the long run. And on this front, Republicans have a data problem.

Economists and political scientists have demonstrated that, since the 1950s, low-income families have been much better off when a Democrat is president than when a Republican is, in just about every aspect (faster income growth, lower unemployment, and so forth).

The chart below is a prime example. It shows average income growth under Democratic presidents has been higher than Republican ones across the income spectrum, but especially for families at the bottom 20%. The average incomes of these families have grown more than 24 times as fast under Democratic presidents (2.512%) as they have under Republican presidents (0.103%).

Annual income growth by income level under Democratic and Republican presidents (1949-2014)

Source: Census Bureau Historical Income Tables

Some may be tempted to attribute all this to random luck. But the odds are very slim; when a football team beats its “rival” team by wide margins, and do so again and again, over an extended period time, it becomes harder and harder to think it’s just a coincidence.

More formally, a regression analysis (a standard statistical technique) indicates that there is about a 1 in 1000 chance that a difference this big would pop up simply because the Democrats got lucky, when there’s nothing inherently better about their policies.

Of course, as investment advisers always say, “Past performance does not guarantee future results.” Nevertheless, for low-income voters making a bet on their financial future, the past performance of Democrats and Republicans in the White House provides important evidence about how a Democratic or a Republican president would be likely to play whatever cards they are dealt over the next four years.

Equality Weak
On income inequality, Republicans have a data problem

According to The Washington Post’s Philip Rucker and Dan Balz, “Economic mobility, and the feeling of many Americans that they are being shut out from the nation’s prosperity, will be a defining theme of the 2016 campaign.”

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People readily grasp the diagnostic value of long-term performance in other walks of life. A judge has ruled that poker is more skill than luck; though luck may beat skill in any given hand, the better player is very likely to win in the long run. And on this front, Republicans have a data problem.

Economists and political scientists have demonstrated that, since the 1950s, low-income families have been slightly better off when a Democrat is president than when a Republican is.

The chart below is a prime example. It shows average income growth under Democratic presidents has been higher than Republican ones across the income spectrum, but especially for families at the bottom 20%. The average incomes of these families have grown more than 1.2 times as fast under Democratic presidents (1.066%) as they have under Republican presidents (0.895%).

Annual income growth by income level under Democratic and Republican presidents (1953-2014)

Some may be tempted to attribute all this to random luck. But the odds are arguably slim. When a football team beats its “rival” team more than half the time over an extended period of time, it may no longer be a coincidence.

More formally, a regression analysis (a standard statistical technique) indicates that there is less than a 3 in 7 chance that a difference like this would pop up simply because the Democrats got lucky, when there’s nothing inherently better about their policies.

Of course, as investment advisers always say, “Past performance does not guarantee future results.” Nevertheless, for low-income voters making a bet on their financial future, the past performance of Democrats and Republicans in the White House provides important evidence about how a Democratic or Republican president would be likely to play whatever cards they are dealt over the next four years.
GDP Strong

On the economy, Republicans have a data problem

Primary season far from over. Both major parties will be doing a lot of politicking, voting, and arm-twisting between now and the conventions in July.

But, when all is said and done, the presidential race is likely to come down to the economy as usual. Republicans and Democrats will make their pitch to claim superior economic know-how over the opponent using the generic talking points many voters have heard all too much.

Republican presidential hopefuls offer the familiar recipe of smaller government, significant tax cuts across the board and fewer regulations — a strategy that would help business, boost growth, and create jobs.

Democrats, of course, have different solutions — more active government, higher taxes on the rich, lower taxes on the poor, and higher minimum wages. They promise that these policies will strengthen the middle class and create a more dynamic economy overall.

Voters called upon to bet on these promises often find themselves much in the dark. Americans looking for skillful economic leadership from the White House would be better served by considering the long-term economic performance of Democratic and Republican presidents.

People readily grasp the diagnostic value of long-term performance in other walks of life. A judge has ruled that poker is more skill than luck; though luck may beat skill in any given hand, the better player is very likely to win in the long run. And on this front, Republicans have a data problem.

Economists and political scientists have demonstrated that, since the 1950s, the U.S. economy has performed much better when a Democrat is president than when a Republican is in just about every aspect (faster growth, lower unemployment, higher stock market returns and so forth).

The chart below is a prime example. It shows that real GDP has grown twice as fast under Democrats (4.624%) as it has under Republicans (2.123%), over a span of six decades. It is clear at a glance that GDP growth rises when Democrats get elected and falls when Republicans do, across all 8 cases of party changes in the White House. There are no exceptions.

Average annual growth by Democratic and Republican terms (1949-2015)

Source: National Bureau of Economic Research
Some may be tempted to attribute all this to random luck. But the odds are very slim; just like winning 8 hands in a row in a one-on-one poker game is a very unlikely thing to happen, unless the winning player has better skills.

More formally, a regression analysis (a standard statistical technique) indicates that there is less than 1 in 1000 chance that a difference like this would pop up, simply because Democrats got lucky, when there’s nothing inherently better about their policies.

Of course, as investment advisers always say, “Past performance does not guarantee future results.” Nevertheless, for voters making a bet on America’s economic future, the past performance of Democrats and Republicans in the White House provides important evidence about how a Democratic or Republican president would be likely to play whatever cards they are dealt over the next four years.

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People readily grasp the diagnostic value of long-term performance in other walks of life. A judge has ruled that poker is more skill than luck; though luck may beat skill in any given hand, the better player is very likely to win in the long run. And on this front, Republicans have a data problem.

Economists and political scientists have demonstrated that, since the 1950s, the U.S. economy has performed slightly better when a Democrat is president than when a Republican is.

The chart below is a prime example. It shows that real GDP has grown 1.06 times as fast under Democrats (3.233%) as it has under Republicans (3.043%), over a span of six decades. It is may be noticeable at a glance that GDP growth usually rises when Democrats get elected (with the exception of Carter) and falls when Republicans do (with the exceptions of Nixon and Regan). Across all 8 cases of party changes in the White House there are are only 3 exceptions.

Average annual GDP growth by Democratic and terms (1951-2015)
Some may be tempted to attribute all this to random luck. But the odds are arguably slim; just like winning 5 hands out of 8 in a one-on-one poker game could be an unlikely thing to happen, unless the winning player has better skills.

More formally, a regression analysis (a standard statistical technique) indicates that there is about 2 in 5 chance that a difference like this would pop up, simply because Democrats got lucky, when there’s nothing inherently better about their policies.

Of course, as investment advisers always say, “Past performance does not guarantee future results.” Nevertheless, for voters making a bet on America’s economic future, the past performance of Democrats and Republicans in the White House provides important evidence about how a Democratic or Republican president would be likely to play whatever cards they are dealt over the next four years.

Placebo

Germans Forget Postwar History Lesson on Debt Relief in Greece Crisis

It is not hard to notice hypocrisy in Germany’s insistence that Athens must agree to more painful austerity before any sort of debt relief can be put on the table: The main creditor demanding that Greeks be made to pay for past profligacy benefited not so long ago from more lenient terms.

But beyond serving as a reminder of German hypocrisy, the history offers a more important lesson: These sorts of things have been dealt with successfully before. The 20th century offers a rich road map of policy failure and success addressing sovereign debt crises.

The good news is that by now economists generally understand the contours of a successful approach. “I’ve seen this movie so many times before,” said Carmen M. Reinhart, a professor at the Kennedy School of Government at Harvard who is perhaps the world’s foremost expert on sovereign debt crises. “It is very easy to get hung up on the idiosyncrasies of each individual situation and miss the recurring pattern.”

The recurring, historical pattern? Major debt overhangs are only solved after deep write-downs of the debt’s face value. The longer it takes for the debt to be cut, the bigger the necessary write-down will turn out to be. Nobody should understand this better than the Germans. It’s not just that they benefited from the deal in 1953, which underpinned Germany’s postwar economic miracle.
Twenty years earlier, Germany defaulted on its debts from World War I, after undergoing a bout of hyperinflation and economic depression that helped usher Hitler to power. It is a general lesson about the nature of debt from the World War I defaults of more than a dozen countries in the 1930s to the Brady write-downs of the early 1990s.

Both of these episodes were preceded by a decade or more of negotiations and rescheduling plans that — not unlike Greece’s first bailout programs — extended the maturity of debts and lowered their interest rate. But crises ended and economies improved only after the debt was cut. The chart below shows sharp economic rebounds after the 1934 defaults — which cut debtors’ foreign indebtedness by at least 43 percent, on average — and the Brady plan, which sliced debtors’ burdens by an average of 36 percent.

The crisis exit in both episodes came only after deep face-value debt write-offs had been implemented. Softer forms of debt relief, such as maturity extensions and interest rate reductions, are not generally followed by higher economic growth or improved credit ratings.

Yet policy makers have yet to get this. It took a decade or more from the onset of the Latin American debt crisis to the Brady deal. Brazil alone had six debt restructurings. Similarly, the generalized defaults of 1934 followed more than a decade of failed half-measures. Does Greece have to wait that long, too?

Study 4 Messages

Civil Pro

Obamacare was working

Although Congress failed to “repeal and replace” Obamacare, the political and legal turmoil over health care is far from settled. To understand this issue better, it is important to consider how the health care law was performing before the Trump administration took office.

Despite some problems, Obamacare was actually successfully addressing one of the most serious problems of America’s health care system: its rising costs.

Here is why: Obamacare provides several incentives for previously uninsured healthy people to join the insurance pool. Before Obamacare, medical costs were so high mainly because those buying insurance were sicker than average. The high costs led some healthy people to exit the insurance market, which caused costs to rise even more.

It is extremely important to have enough healthy people in the market to control rising health care prices, and Obamacare did just that.

By the end of 2016, various studies had already shown that Obamacare was working.
1. According to a report by the Kaiser Family Foundation, the overall premium for employer-sponsored health insurance rose by 3.8% after the reform. By contrast, during the Bush years, premiums increased on average by 8.8% each year.
2. According to data released by the Centers for Medicaid and Medicare Services, the annual growth in national out-of-pocket spending became 1.3% in the year following the implementation of the
law. Again this was much lower than the annual growth rates under the Bush administration (5.6% on average).

3. The Kaiser Family Foundation released an analysis showing premiums in the Obamacare Marketplaces decreased by 0.7% nationwide, after accounting for tax credits. In comparison, the national individual health insurance premium had increased by 10 to 12% per year before the reform.

No matter how you look at the data, the evidence was clear. Obamacare was fixing the problem that would have made the system far worse than it might have been.

Uncivil Pro

Republicans, get your facts straight! Obamacare was working!

Although idiotic Republicans in Congress failed to “repeal and replace” Obamacare, the political and legal turmoil over health care is far from settled. To understand this issue better, it is important to consider how the health care law was performing before the despicable and irresponsible Trump administration took office.

Despite some problems, Obamacare was actually successfully addressing one of the most serious problems of America’s health care system: its rising costs. Repealing Obamacare is the dumbest thing we can possibly do.

Here is why: Obamacare provides several incentives for previously uninsured healthy people to join the insurance pool. Before Obamacare, medical costs were so high mainly because those buying insurance were sicker than average. The high costs led some healthy people to exit the insurance market, which caused costs to rise even more.

It is extremely important to have enough healthy people in the market to control rising health care prices, and Obamacare did just that. President Trump doesn’t seem to understand this fundamental aspect of the law. And Republicans in Congress are lying about it as usual!

Not surprisingly, the facts are not on the stupid Republicans’ side. By the end of 2016, various studies had already shown that Obamacare was working.

1. According to a report by the Kaiser Family Foundation, the overall premium for employer-sponsored health insurance rose by 3.8% after the reform. By contrast, during the disastrous Bush years, premiums increased on average by 8.8% each year.

2. According to data released by the Centers for Medicaid and Medicare Services, the annual growth in national out-of-pocket spending became 1.3% in the year following the implementation of the law. Again this was much lower than the annual growth rates under the utterly incompetent Bush administration (5.6% on average).

3. The Kaiser Family Foundation released an analysis showing premiums in the Obamacare Marketplaces decreased by 0.7% nationwide, after accounting for tax credits. In comparison, the national individual health insurance premium had increased by 10 to 12% per year before the reform.

No matter how you look at the data, the evidence was clear. Obamacare was fixing the problem that would have made the system far worse than it might have been. Republicans just don’t know what they’re doing. And if you’re still chanting “repeal and replace Obamacare,” you are either living inside your own bubble or don’t understand how health care policies work at all.

Civil Con

Obamacare wasn’t working

Although Congress failed to “repeal and replace” Obamacare, the political and legal turmoil over health care is far from settled. To understand this issue better, it is important to consider how the health care law was performing before the Trump administration took office.

Despite some successes, Obamacare was actually failing to address one of the most serious problems of America’s health care system: its rising costs. This wasn’t surprising to many who had argued that Obamacare would slow down growth in health care costs.

Here’s why: Obamacare requires health insurance providers to offer health insurance policies at the same price to all persons, regardless of their health conditions. This regulation would almost certainly
increase medical costs for healthy people and lead some of them to exit the insurance market, causing costs to rise even more.

It is extremely important to have enough healthy people in the market to control rising health care prices, but Obamacare did just the opposite.

By the end of 2016, various studies had already shown that Obamacare wasn’t working.

1. The Kaiser Family Foundation released an analysis showing that premiums in Obamacare Marketplaces were rising by 10.1% on average nationwide, and above 30% in some states.

2. According to the health benefits survey by the Kaiser Family Foundation, the average deductible for employer-sponsored health insurance increased by 22.0% over the two years after the implementation of Obamacare.

3. The national health expenditure data released by the Centers for Medicaid and Medicare Services showed that the annual national spending on health insurance grew by 6.2% in the year following the implementation of the law. This was much higher than the annual growth rate before the health care law (3.0%).

No matter how you look at the data, the evidence was clear. Obamacare was not sustainable and was likely to implode in the future if such trends continued.

Uncivil Pro

Democrats, get your facts straight! Obamacare wasn’t working!

Although Congress failed to “repeal and replace” Obamacare—the law passed by idiotic Democrats—the political and legal turmoil over health care is far from settled. To understand this issue better, it is important to consider how the health care law was performing before the Trump administration took office following the despicable and irresponsible Obama administration.

Despite some successes, Obamacare was actually failing to address one of the most serious problems of America’s health care system: its rising costs. Maintaining Obamacare is the dumbest thing we can possibly do.

Here’s why: Obamacare requires health insurance providers to offer health insurance policies at the same price to all persons, regardless of their health conditions. This regulation would almost certainly increase medical costs for healthy people and lead some of them to exit the insurance market, causing costs to rise even more.

It is extremely important to have enough healthy people in the market to control rising health-care prices, but Obamacare did just the opposite. President Obama didn’t seem to understand this fundamental flaw of the law. And Democrats in Congress are lying about it as usual!

Not surprisingly, the facts are not on the stupid Democrats’ side. By the end of 2016, various studies had already shown that Obamacare wasn’t working.

1. The Kaiser Family Foundation released an analysis showing that premiums in Obamacare Marketplaces were rising by 10.1% on average nationwide, and above 30% in some states.

2. According to the health benefits survey by the Kaiser Family Foundation, the average deductible for employer-sponsored health insurance increased by 22.0% over the two years after the implementation of Obamacare.

3. The national health expenditure data released by the Centers for Medicaid and Medicare Services showed that the annual national spending on health insurance grew by 6.2% in the year following the implementation of the law. This was much higher than the annual growth rate before the stupid health care law (3.0%).

No matter how you look at the data, the evidence was clear. Obamacare was not sustainable and was likely to implode in the future if such trends continued. Democrats just don’t know what they’re doing. And if you’re still chanting “defend Obamacare,” you’re either living inside your own bubble or don’t understand how health care policies work at all.

Placebo
It is not hard to notice hypocrisy in Germany’s insistence that Athens must agree to more painful austerity before any sort of debt relief can be put on the table: The main creditor demanding that Greeks be made to pay for past profligacy benefited not so long ago from more lenient terms.

But beyond serving as a reminder of German hypocrisy, the history offers a more important lesson: These sorts of things have been dealt with successfully before. The 20th century offers a rich road map of policy failure and success addressing sovereign debt crises.

The good news is that by now economists generally understand the contours of a successful approach. “I’ve seen this movie so many times before,” said Carmen M. Reinhart, a professor at the Kennedy School of Government at Harvard.

Major debt overhangs are only solved after deep write-downs of the debt’s face value. The longer it takes for the debt to be cut, the bigger the necessary write-down will turn out to be.

Nobody should understand this better than the Germans. It’s not just that they benefited from the deal in 1953, which underpinned Germany’s postwar economic miracle.

Twenty years earlier, Germany defaulted on its debts from World War I, after undergoing a bout of hyperinflation and economic depression that helped usher Hitler to power. It is a general lesson about the nature of debt from the World War I defaults of more than a dozen countries in the 1930s to the Brady write-downs of the early 1990s.

A new study found sharp economic rebounds after the 1934 defaults — which cut debtors’ foreign indebtedness by at least 43 percent, on average — and the Brady plan, which sliced debtors’ burdens by an average of 36 percent.

The crisis exit in both episodes came only after deep face-value debt write-offs had been implemented. Softer forms of debt relief, such as maturity extensions and interest rate reductions, are not generally followed by higher economic growth or improved credit ratings.
Appendix B: Survey Questionnaires

Study 1

\textit{Attitudes toward the ACA (Wave 1; 2; 3; 4)} was constructed by combining the five items, and scaled to 0-1 where 1 indicates the strongest support (Cronbach’s alpha = 0.96).

In general, do you support or oppose the health care reform law passed in 2010? This law is called the Affordable Care Act, and sometimes referred to as Obamacare.

- Support; Oppose; Neither support nor oppose
- Is your support [opposition] strong or not so strong?
  - Strong; Not so strong
- Do you lean toward supporting or opposing the health care reform law, or do you not lean either way?
  - Supporting; Opposing; Do not lean either way

Would you vote to repeal the health care reform law, if you were in Congress today?

- Definitely yes; Probably yes; Might or might not; Probably not; Definitely not; Not sure

On the whole, the health care reform law is changing the American health care system...

- Definitely for the better; Probably for the better; Neither for the better nor worse; Probably for the worse; Definitely for the worse

In the long run, the overall impacts of the health care reform law on the American people will be...

- Definitely good; Probably good; Neither good nor bad; Probably bad; Definitely bad

In the long run, the overall impacts of the health care reform law on you and your family will be...

- Definitely good; Probably good; Neither good nor bad; Probably bad; Definitely bad

\textit{Belief that the ACA saves costs (Wave 1)} was measured by combining the following three items, and scaled to run from 0 to 1 where 1 indicates the strongest belief that the ACA saves health care costs (Cronbach’s alpha = 0.77). “Not sure” responses were coded 0.5.

In terms of health care costs, the reform law is changing the American health care system...

- Definitely for the better; Probably for the better; Neither for the better nor worse; Probably for the worse; Definitely for the worse; Not sure

Based on what you have heard, the probability that the law slows down growth in health care costs over the next ten years is...

- Extremely high (95% chance); Fairly high (80% chance); A little high (65% chance); Neither high nor low (50/50); A little low (35% chance); Fairly low (20% chance); Extremely low (5% chance); Not sure

Based on what you have heard, the probability that the law accelerates growth in health care costs over the next ten years is...

- Extremely high (95% chance); Fairly high (80% chance); A little high (65% chance); Neither high nor low (50/50); A little low (35% chance); Fairly low (20% chance); Extremely low (5% chance); Not sure

\textit{Party Identification (Wave 1)} was measured by the following questionnaire, and scaled 0-1 where 1 indicates “Strong Democrat”

Generally speaking, do you think of yourself as a Democrat, a Republican, an Independent or something else?

- Democrat; Republican; Independent; Other
- Would you call yourself a strong Democrat or a not very strong Democrat [Republican]?
  - Strong Democrat [Republican]; Not very strong Democrat [Republican]
Do you think of yourself as closer to the Democratic Party, the Republican Party, or neither?
- Closer to the Democratic Party; Closer to the Republican Party; Neither

Wave 1 Attention Screener (Those who failed this question were not invited to Wave 2)
Recent research on decision making shows that choices are affected by context. To help us understand how people make decisions, we are interested in information about you. Specifically, we are interested in whether you actually take the time to read the directions. To show that you have read the instructions, please ignore the question below about how you are feeling and instead check Interested, Bored and none of the above option as your three choices. Please check all words that describe how you are currently feeling.
- Excited; Distressed; Interested; Upset; Bored; Guilty; Scared; Hostile; Enthusiastic; None of the above

Citizenship (Wave 1; non-US citizens were not invited to Wave 2)
Are you a U.S. citizen? (Your answer will NOT affect HIT approval)
- Yes; No

Wave 2 Attention Screener (Before Treatment; Studies 2, 4 used this screener)
When a big news story breaks people often go online to get up-to-the-minute details on what is going on. We want to know which websites people trust to get this information. We also want to know if people are paying attention to the question. To show that you’ve read this much, please ignore the question and select the Drudge Report and the NPR website and none of the above as your three answers.
When there is a big news story, which is the one news website you visit first? (Please only choose one)

Study 2

Exposure to the Premium Increase Story. The Obama administration released the prices for Obamacare health plans this [last] week. Over the past few days [week], have you seen or heard any news about the 2017 health insurance rates?
- Yes; No; Not Sure
According to the news reports, the 2017 premiums for health plans under the Affordable Care Act will...
- Decrease; Stay about the same; Increase; I don’t know

Study 3

Belief about the major parties’ performance on growing the national economy was measured based on the following five items and rescaled to 0-1 where 1 indicates the pro-Democratic side.
Over the past few decades, which party do you think has done a better job of handling the national economy? (*This item was measured twice before and after treatment)
- Definitely Democrats; Probably Democrats; Not much difference between them; Probably Republicans; Definitely Republicans; Not sur
Which party do you think will do a better job of handling the national economy over the next four years?
• Definitely Democrats; Probably Democrats; Not much difference between them; Probably Republicans; Definitely Republicans; Not sure
Do you expect the national economy to get better, stay about the same, or get worse than now, if a Democratic candidate wins the 2016 Presidential Election?
• Definitely better; Probably better; About the same; Probably worse; Definitely worse; Not sure
Do you expect the national economy to get better, stay about the same, or get worse than now, if a Republican candidate wins the 2016 Presidential Election?
• Definitely better; Probably better; About the same; Probably worse; Definitely worse; Not sure
Between Democratic and Republican economic policies, which do you think will generate faster economic growth?
• Definitely Democratic; Probably Democratic; Not much difference between them; Probably Republican; Definitely Republican; Not sure

Belief about the major parties’ performance on handling income inequality was measured based on the following five items and rescaled to 0-1 where 1 indicates the pro-Democratic side.
Over the past few decades, which party do you think has done a better job of handling income inequality? (*This item was measured twice before and after treatment)
• Definitely Democrats; Probably Democrats; Not much difference between them; Probably Republicans; Definitely Republicans; Not sure
Which party do you think will do a better job of handling income inequality over the next four years?
• Definitely Democrats; Probably Democrats; Not much difference between them; Probably Republicans; Definitely Republicans; Not sure
Do you expect income distribution to become more equal, or less equal than now, if a Democratic candidate wins the 2016 Presidential Election?
• Definitely more equal; Probably more equal; About the same; Probably less equal; Definitely less equal; Not sure
Do you expect income distribution to become more equal, or less equal than now, if a Republican candidate wins the 2016 Presidential Election?
• Definitely Democrats; Probably Democrats; Not much difference between them; Probably Republicans; Definitely Republicans; Not sure
Between Democratic and Republican economic policies, which do you think will reduce income inequality more?
• Definitely Democratic; Probably Democratic; Not much difference between them; Probably Republican; Definitely Republican; Not sure

Study 4

Attitudes toward the ACA was constructed by combining the four items and scaled to 0-1 where 1 indicates the strongest support.
In general, do you support or oppose the health care reform law passed in 2010? This law is called the Affordable Care Act, and sometimes referred to as Obamacare.
• Support; Oppose; Neither support nor oppose
Is your support [opposition] strong or not so strong?
• Strong; Not so strong
Do you lean toward supporting or opposing the health care reform law, or do you not lean either way?
• Supporting; Opposing; Do not lean either way
Would you vote to repeal the health care reform law, if you were in Congress today?
- Definitely yes; Probably yes; Might or might not; Probably not; Definitely not; Not sure

Thinking about the American health care system as a whole, keeping the Affordable Care Act (Obamacare) as the law of the land will be...
- Definitely beneficial; Probably beneficial; Neither beneficial nor harmful; Probably harmful; Definitely harmful; Not sure

Keeping the Affordable Care Act (Obamacare) as the law of the land will make health care..
- Much less expensive; Somewhat less expensive; Neither more nor less expensive; Somewhat more expensive; Much more expensive

Belief that the ACA makes health care less expensive was constructed by combining the four items and scaled to 0-1 where 1 indicates the strongest support.

Thinking about the American health care costs, keeping the Affordable Care Act (Obamacare) as the law of the land will be...
- Definitely beneficial; Probably beneficial; Neither beneficial nor harmful; Probably harmful; Definitely harmful; Not sure

Keeping the Affordable Care Act (Obamacare) as the law of the land will make health care..
- Much less expensive; Somewhat less expensive; Neither more nor less expensive; Somewhat more expensive; Much more expensive

Repealing the Affordable Care Act (Obamacare) as the law of the land will make health care..
- Much less expensive; Somewhat less expensive; Neither more nor less expensive; Somewhat more expensive; Much more expensive
### Appendix C: Full Regression Results with Alternative Specifications

#### Study 1

**Table C1: Average Treatment Effects (Study 1)**

<table>
<thead>
<tr>
<th>Pretreatment Covariates</th>
<th>Treatment 1: Strong Con (β₁₁)</th>
<th>Treatment 2: Weak Con (β₁₂)</th>
<th>Treatment 3: Weak Pro (β₂₁)</th>
<th>Treatment 4: Strong Pro (β₂₂)</th>
<th>Pretreatment ACA Attitude</th>
<th>Pretreatment Cost Belief</th>
<th>Party Identification (Continuous; 0-1)</th>
<th>Intercept</th>
<th>N</th>
</tr>
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<tbody>
<tr>
<td>Shirkers Dropped</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>1219</td>
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<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>1385</td>
</tr>
<tr>
<td>No</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>1516</td>
</tr>
<tr>
<td>Note. * p &lt; 0.05, p &lt; 0.1. OLS estimates with robust standard errors in parentheses. Point estimates without covariates are generally similar to those with covariates but far less precise.</td>
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**Table C2: Difference in Treatment Effects by Partisanship (Study 1)**

<table>
<thead>
<tr>
<th>Pretreatment Covariates</th>
<th>Treatment 1: Strong Con (β₁₁)</th>
<th>Treatment 2: Weak Con (β₁₂)</th>
<th>Treatment 3: Weak Pro (β₂₁)</th>
<th>Treatment 4: Strong Pro (β₂₂)</th>
<th>Pretreatment ACA Attitude</th>
<th>Pretreatment Cost Belief</th>
<th>Party Identification (Continuous; 0-1)</th>
<th>Intercept</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shirkers Dropped</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>1219</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>1385</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>1516</td>
</tr>
<tr>
<td>Note. * p &lt; 0.05, p &lt; 0.1. OLS estimates with robust standard errors in parentheses. Figure 2 in the main text plots the estimates reported in Columns 1.</td>
<td></td>
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Table C3: Difference in Treatment Effects by Pretreatment ACA Support (Study1)

<table>
<thead>
<tr>
<th>Treatment 1: Strong Con (β1)</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
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<tr>
<td>Attitude toward ACA</td>
<td>0.038*</td>
<td>-0.048*</td>
<td>-0.040</td>
<td>-0.051*</td>
<td>-0.096*</td>
<td>-0.083*</td>
<td>-0.109*</td>
<td>-0.101*</td>
</tr>
<tr>
<td>Belief in ACA’s Effect on Cost</td>
<td>(0.017)</td>
<td>(0.016)</td>
<td>(0.024)</td>
<td>(0.023)</td>
<td>(0.023)</td>
<td>(0.022)</td>
<td>(0.027)</td>
<td>(0.026)</td>
</tr>
<tr>
<td>Treatment 2: Weak Con (β2)</td>
<td>-0.027*</td>
<td>-0.028*</td>
<td>-0.065*</td>
<td>-0.058*</td>
<td>-0.066*</td>
<td>-0.063*</td>
<td>-0.112*</td>
<td>-0.103*</td>
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<tr>
<td></td>
<td>(0.016)</td>
<td>(0.016)</td>
<td>(0.023)</td>
<td>(0.023)</td>
<td>(0.026)</td>
<td>(0.024)</td>
<td>(0.028)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>Treatment 3: Weak Pro (β3)</td>
<td>0.065*</td>
<td>0.060*</td>
<td>0.043*</td>
<td>0.034</td>
<td>0.078*</td>
<td>0.086*</td>
<td>0.052*</td>
<td>0.057*</td>
</tr>
<tr>
<td></td>
<td>(0.018)</td>
<td>(0.017)</td>
<td>(0.025)</td>
<td>(0.025)</td>
<td>(0.024)</td>
<td>(0.023)</td>
<td>(0.029)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>Treatment 4: Strong Pro (β4)</td>
<td>0.096*</td>
<td>0.088*</td>
<td>0.074*</td>
<td>0.065*</td>
<td>0.128*</td>
<td>0.135*</td>
<td>0.099*</td>
<td>0.107*</td>
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<tr>
<td></td>
<td>(0.019)</td>
<td>(0.018)</td>
<td>(0.027)</td>
<td>(0.027)</td>
<td>(0.024)</td>
<td>(0.023)</td>
<td>(0.029)</td>
<td>(0.028)</td>
</tr>
<tr>
<td>Supporter (β5)</td>
<td>0.043</td>
<td>0.047</td>
<td>0.564*</td>
<td>0.557*</td>
<td>-0.054</td>
<td>-0.052</td>
<td>0.274*</td>
<td>0.273*</td>
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<td></td>
<td>(0.035)</td>
<td>(0.033)</td>
<td>(0.021)</td>
<td>(0.020)</td>
<td>(0.044)</td>
<td>(0.042)</td>
<td>(0.024)</td>
<td>(0.023)</td>
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<tr>
<td>Strong Con × Supporter (γ1)</td>
<td>-0.075*</td>
<td>-0.063*</td>
<td>-0.065*</td>
<td>-0.046</td>
<td>-0.061*</td>
<td>-0.064*</td>
<td>-0.030</td>
<td>-0.029</td>
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<tr>
<td></td>
<td>(0.022)</td>
<td>(0.022)</td>
<td>(0.031)</td>
<td>(0.030)</td>
<td>(0.028)</td>
<td>(0.027)</td>
<td>(0.034)</td>
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<td>Weak Con × Supporter (γ2)</td>
<td>-0.021</td>
<td>-0.022</td>
<td>0.026</td>
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<td>Weak Pro × Supporter (γ3)</td>
<td>-0.056*</td>
<td>-0.053*</td>
<td>-0.019</td>
<td>-0.011</td>
<td>0.004</td>
<td>-0.004</td>
<td>0.044</td>
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<td>(0.021)</td>
<td>(0.021)</td>
<td>(0.030)</td>
<td>(0.029)</td>
<td>(0.028)</td>
<td>(0.027)</td>
<td>(0.035)</td>
<td>(0.033)</td>
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<tr>
<td>Strong Pro × Supporter (γ4)</td>
<td>-0.069*</td>
<td>-0.062*</td>
<td>-0.050</td>
<td>-0.031</td>
<td>-0.005</td>
<td>-0.011</td>
<td>0.028</td>
<td>0.034</td>
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<tr>
<td></td>
<td>(0.022)</td>
<td>(0.021)</td>
<td>(0.032)</td>
<td>(0.031)</td>
<td>(0.029)</td>
<td>(0.028)</td>
<td>(0.035)</td>
<td>(0.033)</td>
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Pretreatment ACA Attitude 0.791* 0.899* 0.301* 0.299* 0.303 (0.053) (0.052) (0.066) (0.063)
A CA Attitude × Supporter 0.009 -0.010 0.019 0.020 (0.070) (0.068) (0.083) (0.079)
Pretreatment Cost Belief 0.116* 0.099* 0.431* 0.423* 0.038 (0.037) (0.049) (0.047)
Cost Belief × Supporter -0.053 -0.047 -0.024 -0.006 (0.048) (0.047) (0.062) (0.064)
Party Identification (Continuous; 0-1) 0.078* 0.077* 0.063* 0.073* 0.023 (0.024) (0.028) (0.027)
Partisanship (continuous) × Supporter -0.002 -0.001 0.001 -0.013 (0.035) (0.034) (0.038) (0.037)
Intercept 0.011 0.016 0.229* 0.234* 0.103* 0.099* 0.312* 0.309* 0.014 (0.014) (0.016) (0.016) (0.022) (0.021) (0.019) (0.019)
N 1364 1492 1364 1492 1364 1492 1364 1492

Shirkers Dropped Yes No Yes No Yes No Yes No
Pretreatment Covariates Yes Yes No No Yes Yes No No

Note. * p < 0.05 † p < 0.1. OLS estimates with robust standard errors in parentheses. These results are not shown in the main text.

Study 2

Table C4: Average Effects of Exposure to the Coverage of 2017 ACA Premium Increases (Placebo Test)

<table>
<thead>
<tr>
<th>Exposure to Story</th>
<th>(1) W3 Attitude toward ACA</th>
<th>(2) W3 Belief in ACA’s Effect on Cost</th>
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<tbody>
<tr>
<td>W2ACA Attitude</td>
<td>0.397*</td>
<td>0.130*</td>
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<tr>
<td>(0.056)</td>
<td>(0.059)</td>
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<td>W2 Cost Belief</td>
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<td>0.226*</td>
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<td>(0.027)</td>
<td>(0.046)</td>
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</tr>
<tr>
<td>W1 ACA Attitude</td>
<td>0.536*</td>
<td>0.097*</td>
</tr>
<tr>
<td>(0.058)</td>
<td>(0.056)</td>
<td></td>
</tr>
<tr>
<td>W1 Cost Belief</td>
<td>-0.006</td>
<td>0.353*</td>
</tr>
<tr>
<td>(0.032)</td>
<td>(0.051)</td>
<td></td>
</tr>
<tr>
<td>PID (Continuous; 0-1)</td>
<td>0.091*</td>
<td>0.036</td>
</tr>
<tr>
<td>(0.024)</td>
<td>(0.026)</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.004</td>
<td>0.057*</td>
</tr>
<tr>
<td>(0.011)</td>
<td>(0.018)</td>
<td></td>
</tr>
</tbody>
</table>

N 685 685

Note. * p < 0.05 † p < 0.1. OLS estimates with robust standard errors in parentheses.
<table>
<thead>
<tr>
<th>Exposure to Story</th>
<th>(1) W4 Attitude toward ACA</th>
<th>(2) W4 Belief in ACA’s Effect on Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W3 ACA Attitude</td>
<td>0.473*</td>
<td>0.131*</td>
</tr>
<tr>
<td></td>
<td>(0.059)</td>
<td>(0.060)</td>
</tr>
<tr>
<td>W3 Cost Belief</td>
<td>0.109*</td>
<td>0.395*</td>
</tr>
<tr>
<td></td>
<td>(0.035)</td>
<td>(0.051)</td>
</tr>
<tr>
<td>W2ACA Attitude</td>
<td>0.146*</td>
<td>-0.061</td>
</tr>
<tr>
<td></td>
<td>(0.072)</td>
<td>(0.065)</td>
</tr>
<tr>
<td>W2 Cost Belief</td>
<td>-0.041</td>
<td>0.082*</td>
</tr>
<tr>
<td></td>
<td>(0.035)</td>
<td>(0.049)</td>
</tr>
<tr>
<td>W1 ACA Attitude</td>
<td>0.133*</td>
<td>0.030</td>
</tr>
<tr>
<td></td>
<td>(0.066)</td>
<td>(0.067)</td>
</tr>
<tr>
<td>W1 Cost Belief</td>
<td>0.021</td>
<td>0.192*</td>
</tr>
<tr>
<td></td>
<td>(0.037)</td>
<td>(0.092)</td>
</tr>
<tr>
<td>PID (Continuous; 0-1)</td>
<td>0.103*</td>
<td>0.036</td>
</tr>
<tr>
<td></td>
<td>(0.024)</td>
<td>(0.029)</td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.008</td>
<td>0.039*</td>
</tr>
<tr>
<td></td>
<td>(0.013)</td>
<td>(0.018)</td>
</tr>
</tbody>
</table>

N = 685

Note. * p < 0.05  + p < 0.1. OLS estimates with robust standard errors in parentheses. Figure 3 in the main text plots the estimates reported in Columns 1.

Table C6: Effects of Exposure to the Coverage of 2017 ACA Premium Increases by Partisanship (Study 2)

<table>
<thead>
<tr>
<th>Exposure to Story</th>
<th>(1) W4 Attitude toward ACA</th>
<th>(2) W4 Belief in ACA’s Effect on Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W3 ACA Attitude</td>
<td>0.591*</td>
<td>0.027</td>
</tr>
<tr>
<td></td>
<td>(0.102)</td>
<td>(0.134)</td>
</tr>
<tr>
<td>W3 Cost Belief</td>
<td>-0.020</td>
<td>0.398*</td>
</tr>
<tr>
<td></td>
<td>(0.044)</td>
<td>(0.099)</td>
</tr>
<tr>
<td>W2ACA Attitude</td>
<td>-0.104</td>
<td>-0.226*</td>
</tr>
<tr>
<td></td>
<td>(0.099)</td>
<td>(0.112)</td>
</tr>
<tr>
<td>W2 Cost Belief</td>
<td>-0.004</td>
<td>0.056</td>
</tr>
<tr>
<td></td>
<td>(0.050)</td>
<td>(0.092)</td>
</tr>
<tr>
<td>W1 ACA Attitude</td>
<td>0.251*</td>
<td>0.262*</td>
</tr>
<tr>
<td></td>
<td>(0.111)</td>
<td>(0.150)</td>
</tr>
<tr>
<td>W1 Cost Belief</td>
<td>0.053</td>
<td>0.175+</td>
</tr>
<tr>
<td></td>
<td>(0.063)</td>
<td>(0.094)</td>
</tr>
<tr>
<td>PID (Continuous; 0-1)</td>
<td>0.030</td>
<td>0.061</td>
</tr>
<tr>
<td></td>
<td>(0.054)</td>
<td>(0.102)</td>
</tr>
<tr>
<td>Democrat (Dummy)</td>
<td>-0.084</td>
<td>-0.123+</td>
</tr>
<tr>
<td></td>
<td>(0.052)</td>
<td>(0.065)</td>
</tr>
<tr>
<td>Exposure to Story × Democrat</td>
<td>0.014</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>(0.022)</td>
<td>(0.032)</td>
</tr>
<tr>
<td>W3 ACA Attitude × Democrat</td>
<td>-0.222+</td>
<td>0.110</td>
</tr>
<tr>
<td></td>
<td>(0.126)</td>
<td>(0.153)</td>
</tr>
<tr>
<td>W3 Cost Belief × Democrat</td>
<td>0.196*</td>
<td>-0.014</td>
</tr>
<tr>
<td></td>
<td>(0.066)</td>
<td>(0.117)</td>
</tr>
<tr>
<td>W2ACA Attitude × Democrat</td>
<td>-0.097</td>
<td>0.027</td>
</tr>
<tr>
<td></td>
<td>(0.070)</td>
<td>(0.112)</td>
</tr>
<tr>
<td>W2 Cost Belief × Democrat</td>
<td>0.378*</td>
<td>0.241+</td>
</tr>
<tr>
<td></td>
<td>(0.140)</td>
<td>(0.141)</td>
</tr>
<tr>
<td>W1 ACA Attitude × Democrat</td>
<td>-0.125</td>
<td>-0.281</td>
</tr>
<tr>
<td></td>
<td>(0.144)</td>
<td>(0.172)</td>
</tr>
<tr>
<td>W1 Cost Belief × Democrat</td>
<td>-0.030</td>
<td>0.087</td>
</tr>
<tr>
<td></td>
<td>(0.082)</td>
<td>(0.117)</td>
</tr>
<tr>
<td>Partisanship (continuous) × Democrat</td>
<td>0.109</td>
<td>0.023</td>
</tr>
<tr>
<td></td>
<td>(0.079)</td>
<td>(0.122)</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.030</td>
<td>0.063*</td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
<td>(0.031)</td>
</tr>
</tbody>
</table>

N = 596

Note. * p < 0.05  + p < 0.1. OLS estimates with robust standard errors in parentheses. Figure 3 in the main text plots the estimates reported in Columns 1.
Table C7: Average Treatment Effects (Study 3)

<table>
<thead>
<tr>
<th>Pretreatment Covariates</th>
<th>Shirkers Dropped</th>
<th>N</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>1203</td>
<td>0.037*</td>
<td>0.045*</td>
<td>0.035</td>
<td>0.035</td>
<td>0.046*</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1070</td>
<td>0.037*</td>
<td>0.045*</td>
<td>0.035</td>
<td>0.035</td>
<td>0.046*</td>
<td>0.007</td>
</tr>
</tbody>
</table>

Note. * p < 0.05  p < 0.1. OLS estimates with robust standard errors in parentheses.

Table C8: Difference in Treatment Effects by Partisanship (Study 3)

<table>
<thead>
<tr>
<th>Pretreatment Covariates</th>
<th>Shirkers Dropped</th>
<th>N</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>1203</td>
<td>0.037*</td>
<td>0.045*</td>
<td>0.035</td>
<td>0.035</td>
<td>0.046*</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1070</td>
<td>0.037*</td>
<td>0.045*</td>
<td>0.035</td>
<td>0.035</td>
<td>0.046*</td>
<td>0.007</td>
</tr>
</tbody>
</table>

Note. * p < 0.05  p < 0.1. OLS estimates with robust standard errors in parentheses.
Table C9: Average Treatment Effects (Study 4)

<table>
<thead>
<tr>
<th>Pretreatment Covariates</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment 1: Civil Con ($\beta_1$)</td>
<td>-0.073*</td>
<td>-0.079*</td>
<td>-0.078*</td>
<td>-0.093*</td>
<td>-0.126*</td>
<td>-0.122*</td>
<td>-0.129*</td>
<td>-0.133*</td>
</tr>
<tr>
<td>Treatment 2: Uncivil Con ($\beta_2$)</td>
<td>-0.032*</td>
<td>-0.040*</td>
<td>-0.029</td>
<td>-0.043*</td>
<td>-0.073*</td>
<td>-0.077*</td>
<td>-0.071*</td>
<td>-0.080*</td>
</tr>
<tr>
<td>Treatment 3: Civil Pro ($\beta_3$)</td>
<td>0.048*</td>
<td>0.044*</td>
<td>0.045*</td>
<td>0.034*</td>
<td>0.078*</td>
<td>0.076*</td>
<td>0.074*</td>
<td>0.068*</td>
</tr>
<tr>
<td>Treatment 4: Uncivil Pro ($\beta_4$)</td>
<td>0.046*</td>
<td>0.040*</td>
<td>0.033*</td>
<td>0.024</td>
<td>0.070*</td>
<td>0.063*</td>
<td>0.060*</td>
<td>0.051*</td>
</tr>
<tr>
<td>Pretreatment ACA Attitude</td>
<td>0.662*</td>
<td>0.624*</td>
<td>0.442*</td>
<td>0.413*</td>
<td>(0.010)</td>
<td>(0.009)</td>
<td>(0.011)</td>
<td>(0.009)</td>
</tr>
<tr>
<td>Party Identification (Continuous; 0-1)</td>
<td>0.182*</td>
<td>0.203*</td>
<td>0.159*</td>
<td>0.172*</td>
<td>(0.012)</td>
<td>(0.010)</td>
<td>(0.013)</td>
<td>(0.010)</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.080*</td>
<td>0.091*</td>
<td>0.604*</td>
<td>0.613*</td>
<td>0.176*</td>
<td>0.189*</td>
<td>0.549*</td>
<td>0.557*</td>
</tr>
<tr>
<td>N</td>
<td>3464</td>
<td>4495</td>
<td>3471</td>
<td>4504</td>
<td>3464</td>
<td>4495</td>
<td>3471</td>
<td>4504</td>
</tr>
<tr>
<td>Shrakers Dropped</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Note. * p < 0.05 ; p < 0.1. OLS estimates with robust standard errors in parentheses. Results not shown in the main text.

Table C10: Difference in Treatment Effects by Partisanship (Study 4)

<table>
<thead>
<tr>
<th>Pretreatment Covariates</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment 1: Civil Con ($\beta_1$)</td>
<td>-0.090*</td>
<td>-0.093*</td>
<td>-0.068*</td>
<td>-0.060*</td>
<td>-0.112*</td>
<td>-0.111*</td>
<td>-0.097*</td>
<td>-0.088*</td>
</tr>
<tr>
<td>Treatment 2: Uncivil Con ($\beta_2$)</td>
<td>-0.064*</td>
<td>-0.074*</td>
<td>-0.057*</td>
<td>-0.051*</td>
<td>-0.078*</td>
<td>-0.084*</td>
<td>-0.073*</td>
<td>-0.069*</td>
</tr>
<tr>
<td>Treatment 3: Civil Pro ($\beta_3$)</td>
<td>0.031*</td>
<td>0.030*</td>
<td>0.040</td>
<td>0.036</td>
<td>0.056*</td>
<td>0.060*</td>
<td>0.062*</td>
<td>0.064*</td>
</tr>
<tr>
<td>Treatment 4: Uncivil Pro ($\beta_4$)</td>
<td>0.013</td>
<td>0.015</td>
<td>0.014</td>
<td>0.020</td>
<td>0.031*</td>
<td>0.024*</td>
<td>0.031</td>
<td>0.027</td>
</tr>
<tr>
<td>Democrat ($\beta_5$)</td>
<td>0.062*</td>
<td>0.064*</td>
<td>0.506*</td>
<td>0.483*</td>
<td>-0.014</td>
<td>-0.007</td>
<td>0.364*</td>
<td>0.345*</td>
</tr>
<tr>
<td>Civil Con $\times$ Democrat ($\gamma_1$)</td>
<td>0.027</td>
<td>0.026</td>
<td>-0.001</td>
<td>-0.019</td>
<td>-0.019</td>
<td>-0.018</td>
<td>-0.039</td>
<td>-0.050*</td>
</tr>
<tr>
<td>Uncivil Con $\times$ Democrat ($\gamma_2$)</td>
<td>0.047*</td>
<td>0.050*</td>
<td>0.046</td>
<td>0.028</td>
<td>0.009</td>
<td>0.010</td>
<td>0.008</td>
<td>-0.006</td>
</tr>
<tr>
<td>Civil Pro $\times$ Democrat ($\gamma_3$)</td>
<td>0.002</td>
<td>0.018</td>
<td>0.014</td>
<td>0.013</td>
<td>0.036*</td>
<td>0.026</td>
<td>0.032</td>
<td>0.023</td>
</tr>
<tr>
<td>Uncivil Pro $\times$ Democrat ($\gamma_4$)</td>
<td>0.046*</td>
<td>0.034*</td>
<td>0.038</td>
<td>0.026</td>
<td>0.061*</td>
<td>0.060*</td>
<td>0.056*</td>
<td>0.054*</td>
</tr>
<tr>
<td>Pretreatment ACA Attitude</td>
<td>0.648*</td>
<td>0.604*</td>
<td>0.446*</td>
<td>0.411*</td>
<td>(0.016)</td>
<td>(0.013)</td>
<td>(0.016)</td>
<td>(0.013)</td>
</tr>
<tr>
<td>ACA Attitude $\times$ Democrat</td>
<td>0.012</td>
<td>0.022</td>
<td>-0.017</td>
<td>-0.015</td>
<td>(0.024)</td>
<td>(0.021)</td>
<td>(0.025)</td>
<td>(0.021)</td>
</tr>
<tr>
<td>Party Identification (Continuous; 0-1)</td>
<td>0.165*</td>
<td>0.173*</td>
<td>0.091*</td>
<td>0.110*</td>
<td>(0.038)</td>
<td>(0.034)</td>
<td>(0.041)</td>
<td>(0.036)</td>
</tr>
<tr>
<td>Partisanship (continuous) $\times$ Democrat</td>
<td>-0.087*</td>
<td>-0.079*</td>
<td>0.069</td>
<td>0.060</td>
<td>(0.046)</td>
<td>(0.041)</td>
<td>(0.051)</td>
<td>(0.045)</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.102*</td>
<td>0.115*</td>
<td>0.294*</td>
<td>0.312*</td>
<td>0.194*</td>
<td>0.207*</td>
<td>0.322*</td>
<td>0.340*</td>
</tr>
<tr>
<td>N</td>
<td>3801</td>
<td>4003</td>
<td>3801</td>
<td>4003</td>
<td>3801</td>
<td>4003</td>
<td>3801</td>
<td>4003</td>
</tr>
<tr>
<td>Shrakers Dropped</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Note. * p < 0.05 ; p < 0.1. OLS estimates with robust standard errors in parentheses. Figures 4 in the main text plots the estimates reported in Column 1.
Table C10: Differences in Treatment Effects by Partisanship and Ambivalent/Univalent Primes (Study 4)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>(1) Attitude toward ACA</th>
<th>(2) Belief in ACA’s Effect on Cost</th>
<th>(3) Pretreatment ACA Attitude</th>
<th>(4) ACA Attitude × Democrat</th>
<th>(5) ACA Attitude × Univalent</th>
<th>(6) Pretreatment Covariates</th>
<th>(7) N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment 1: Civil Con</td>
<td>-0.048*</td>
<td>-0.097*</td>
<td>-0.033</td>
<td>-0.088*</td>
<td>-0.087*</td>
<td>0.425*</td>
<td>0.399*</td>
</tr>
<tr>
<td>Treatment 2: Uncivil Con</td>
<td>-0.049*</td>
<td>-0.082*</td>
<td>-0.085*</td>
<td>-0.071*</td>
<td>-0.084*</td>
<td>0.167*</td>
<td>0.130*</td>
</tr>
<tr>
<td>Treatment 3: Civil Pro</td>
<td>0.039*</td>
<td>0.025*</td>
<td>0.022*</td>
<td>0.033*</td>
<td>0.029*</td>
<td>0.013*</td>
<td>0.030*</td>
</tr>
<tr>
<td>Treatment 4: Uncivil Pro</td>
<td>0.035*</td>
<td>0.022*</td>
<td>0.029*</td>
<td>0.033*</td>
<td>0.029*</td>
<td>0.013*</td>
<td>0.030*</td>
</tr>
<tr>
<td>Democrat</td>
<td>0.035</td>
<td>0.022</td>
<td>0.029</td>
<td>0.033</td>
<td>0.029</td>
<td>0.013</td>
<td>0.030</td>
</tr>
<tr>
<td>Shirkers Dropped</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Note. * p < 0.05 ** p < 0.1. OLS estimates with robust standard errors in parentheses. Figures 5 in the main text plots the estimates reported in Column 1.
Appendix D: Additional Findings

Figure D1: Treatment Effects on Belief by Party ID and Individual Traits (Study 1)

A: Attitude toward ACA

1: High ACA Knowledge

2: Low ACA Knowledge

B: Belief about ACA Cost

1: High ACA Knowledge

2: Low ACA Knowledge

3: High Political Knowledge

4: Low Political Knowledge

5: Strong Prior ACA Attitude

6: Weak Prior ACA Attitude

7: Strong Partisan

8: Moderate/Leaning Partisan

Democrats

Republicans

SC

WC

WP

SP

Treatment Conditions

Treatment Conditions
Figure D2: Long-run Treatment Effects (Study 1)

A: Attitude toward ACA

B: Belief about ACA Cost

Immediate

80 Days after Treatment

160 Days after Treatment

Treatment Conditions

Difference from Control

F(4)=44.02, P<0.01

F(4)=16.45, P<0.01

F(4)=0.96, P=0.43

F(4)=4.44, P<0.01

F(4)=0.96, P=0.43

F(4)=1.19, P=0.31
Appendix E. Replications of Bartels (2008) and Blinder and Watson (2016) for the Economy Arguments

Table E1: Replications of Bartels (2008)

<table>
<thead>
<tr>
<th></th>
<th>(1) Strong</th>
<th></th>
<th>(2) Weak</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Income: 20%</td>
<td>0.024*</td>
<td></td>
<td>0.003</td>
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<tr>
<td></td>
<td>(0.008)</td>
<td></td>
<td>(0.007)</td>
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<tr>
<td>Income: 40%</td>
<td>0.004*</td>
<td></td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td></td>
<td>(0.006)</td>
<td></td>
</tr>
<tr>
<td>Income: 60%</td>
<td>0.008*</td>
<td></td>
<td>0.004</td>
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<tr>
<td></td>
<td>(0.003)</td>
<td></td>
<td>(0.006)</td>
<td></td>
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<tr>
<td>Income: 80%</td>
<td>0.011*</td>
<td></td>
<td>0.007</td>
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</tr>
<tr>
<td></td>
<td>(0.003)</td>
<td></td>
<td>(0.006)</td>
<td></td>
</tr>
<tr>
<td>Income: Top 95%</td>
<td>0.015*</td>
<td></td>
<td>0.009</td>
<td></td>
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<tr>
<td></td>
<td>(0.005)</td>
<td></td>
<td>(0.006)</td>
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</tr>
<tr>
<td>Democratic President × Income: 40%</td>
<td>-0.007</td>
<td></td>
<td>-0.002</td>
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<td></td>
<td>(0.004)</td>
<td></td>
<td>(0.009)</td>
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<tr>
<td>Democratic President × Income: 60%</td>
<td>-0.010*</td>
<td></td>
<td>-0.002</td>
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<tr>
<td></td>
<td>(0.005)</td>
<td></td>
<td>(0.009)</td>
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<tr>
<td>Democratic President × Income: 80%</td>
<td>-0.013*</td>
<td></td>
<td>-0.002</td>
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<tr>
<td></td>
<td>(0.006)</td>
<td></td>
<td>(0.009)</td>
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<tr>
<td>Democratic President × Income: Top 95%</td>
<td>-0.017*</td>
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<td>-0.001</td>
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<tr>
<td></td>
<td>(0.008)</td>
<td></td>
<td>(0.009)</td>
<td></td>
</tr>
<tr>
<td>Year (linear)</td>
<td>-0.001*</td>
<td></td>
<td>-0.001*</td>
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</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td></td>
<td>(0.000)</td>
<td></td>
</tr>
<tr>
<td>DV (1 Year Lag)</td>
<td>0.038</td>
<td></td>
<td>0.099*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.125)</td>
<td></td>
<td>(0.058)</td>
<td></td>
</tr>
<tr>
<td>DV (2 Year Lag)</td>
<td>-0.202*</td>
<td></td>
<td>-0.209*</td>
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</tr>
<tr>
<td></td>
<td>(0.088)</td>
<td></td>
<td>(0.059)</td>
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</tr>
<tr>
<td>House Majority</td>
<td>-0.076*</td>
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<tr>
<td></td>
<td>(0.035)</td>
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<td></td>
</tr>
<tr>
<td>Senate Majority</td>
<td>0.054*</td>
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<tr>
<td></td>
<td>(0.032)</td>
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<tr>
<td>Intercept</td>
<td>0.028*</td>
<td></td>
<td>0.048*</td>
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</tr>
<tr>
<td></td>
<td>(0.009)</td>
<td></td>
<td>(0.018)</td>
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</tbody>
</table>

Year: 1949-2014, 1953-2014
Clustered Standard Errors (by Year): Yes, No
Presumed Lag between Election and Responsibility: No, 1 year
N: 330, 310

Note. * p < 0.1 (two-tailed). OLS estimates. Column 1 is close, although not identical, to Bartels’ (2008) analyses. Column 2 is an intentionally bad reproduction of Bartels’ (2008) results that makes the evidence seem weaker than the closer replication. The figures in the treatment messages are based on these models. The data is from U.S. Census Bureau’s Income Limits for Each Fifth and Top 5 Percent of Families (All Races): 1947 to 2014.29

29 https://www2.census.gov/programs-surveys/cps/tables/time-series/historical-income-families/f01ar.xls.
Table E2: Replications of Blinder and Watson (2016)

<table>
<thead>
<tr>
<th></th>
<th>(1) Strong</th>
<th>(2) Weak</th>
</tr>
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<tbody>
<tr>
<td>Democratic President</td>
<td>0.025*</td>
<td>0.002</td>
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<tr>
<td></td>
<td>(0.007)</td>
<td>(0.007)</td>
</tr>
<tr>
<td>Year</td>
<td>-0.004*</td>
<td></td>
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<tr>
<td></td>
<td>(0.002)</td>
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</tr>
<tr>
<td>Year²</td>
<td>0.000*</td>
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</tr>
<tr>
<td></td>
<td>(0.000)</td>
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</tr>
<tr>
<td>Year³</td>
<td>-0.000*</td>
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<tr>
<td></td>
<td>(0.000)</td>
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<tr>
<td>DV (1 year lag)</td>
<td>-0.194</td>
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<td>(0.121)</td>
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<tr>
<td>DV (2 year lag)</td>
<td>-0.243*</td>
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<td>(0.117)</td>
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<td>DV (2 ear lag)</td>
<td>-0.183</td>
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<td>Intercept</td>
<td>0.083*</td>
<td>0.030*</td>
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<tr>
<td></td>
<td>(0.021)</td>
<td>(0.004)</td>
</tr>
<tr>
<td>Presumed Lag between Election and Responsibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Months</td>
<td>65</td>
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</tr>
<tr>
<td>15 Months</td>
<td>64</td>
<td></td>
</tr>
</tbody>
</table>

Note. * p < 0.1 (two-tailed). OLS estimates. Column 1 is close, although not identical, to Blinder and Watson’s (2016) analyses. Column 2 is an intentionally bad reproduction of Blinder and Watson (2016) that makes the evidence seem weaker than the closer replication. The bars representing Democratic and Republican averages in the figures in the treatment messages are based on these models. The bars associated with each presidential term also use 3 months and 15 months as the presumed lags between the election of a new president, and the time at which GDP growth is attributed to the newly elected president’s responsibility. The data are from U.S. Bureau of Economic Analysis’ Current-Dollar and "Real" Gross Domestic Product.¹⁰