Pre-analysis plan: Depolarizing political facts

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Abstract

When Democrats and Republicans give different answers to factual questions, it may be because they sincerely hold different beliefs about the world. An alternative explanation is that partisans prefer to make statements that match their identities, even when they know those statements are probably false. Two recent studies (Prior et al., 2015; Bullock et al., 2015) showed that when respondents are offered monetary incentives for correct answers, the response gap between Democrats and Republicans decreases–evidence for the latter, "partisan cheerleading" account. In this pre-analysis plan, I describe a survey experiment to test whether these findings travel from valence to non-valence issues.

1 Introduction

There has recently been a spike in media commentary (as of yet based on little scientific investigation) saying that US politics has moved to a contestation of facts rather than of opinions (Thompson, 2016; Davies, 2016; Wilhelm, 2016). Indeed, Democrats and Republicans have different factual beliefs about crime (Shani, 2009), the economy (including unemployment rates, the deficit, inflation, and future incomes; Bartels 2002; Conover et al. 1987; Gerber and Huber 2010), and a host of other issues (Jerit and Barabas, 2012). Media coverage of an issue seems to worsens rather than improve this partisan bias, suggesting that availability of information is not the problem (Jerit and Barabas, 2012).

For our purposes, existing explanations for this factual disagreement fall into two categories. On the one hand, Democrats and Republicans may be exposed to different facts, or process them differently. They come away with different perceptions of the world. On the other hand, people typically prefer to make statements that align with their party identity. Perhaps partisan respondents like to state partisan versions of the facts regardless of what they really believe. Two recent articles (Bullock et al., 2015; Prior et al., 2015) have used monetary incentives for correct statements to try and distinguish between these explanations. In this study, I will investigate whether these findings carry over to questions on which there is more partisan disagreement–that is, to facts which are more explicitly incongruent with the identities of either Republicans or Democrats.

2 Background

To distinguish between these explanations, two recent studies have incentivized partisan respondents to give correct answers to factual questions. The incentives are meant to override expressive benefits, encouraging partisans to admit that they know the inconvenient truth.

In the first study, Prior et al. (2015) found that when asked about the state of the economy (government debt, unemployment, etc.), partisans were more likely to give answers that cast their party in a positive light. However, when the researchers paid respondents $2 for each economic question they could answer correctly, there was a 5% increase in accurate answers. A similar effect arose when the researchers simply told respondents that "it is really important that you answer these questions as accurately as you can."

The second study, by Bullock et al. (2015), again used monetary incentives to uncover partisan cheerleading. One key difference with the Prior et al. (2015) study is that the authors asked factual questions about a broader range of topics, including the economy, Bush approval rates, and Iraq and Afghanistan war casualties. Moreover, in a second experiment, Bullock et al. (2015) introduced small payments for "don't know" answers. These payments gave an option to respondents who did not know the answer to the question, but were willing to refrain from giving the partisan answer in exchange for a small bonus.

Both with and without "don't know" payments, the authors found that paying respondents for correct answers decreased the partisan gap. In this study, I will apply the incentive method to two non-valence topics: climate change and immigration. This allows us to see whether the approach continues to work when the factual questions are not about the performance of one's party in office, but rather about states of the world that are more or less compatible with the party's ideology. I will also explore how three factors moderate the incentive effect: size of the partisan gap, difficulty and respondent education.

3 Design

This design consists of a panel set-up with two phases. Note that this pre-analysis plan was updated after pre-treatment (phase 1) data had been collected, but before post-treatment (phase 2) data came in.

3.1 Sample and procedure

Respondents (n = 300) were recruited via Amazon Mechanical Turk. I used a short demographic questionnaire to filter out some of the Democratic respondents, so that the number of Democratic and Republican respondents would be approximately equal. The design consists of two phases for each respondent, both asking the same set of True/False questions on politically loaded facts. Some questions have answers that are more compatible with Democrat worldviews, while other answers be compatible with a Republican perspective (see next section). In the pre-treatment phase, none of the respondents were rewarded for correct answers. In the post-treatment phase, some respondents will be rewarded for correct answers, while others are not. The two phases are

spaced between two weeks apart, so that most respondents will not remember their previous answers.

With this design, we can compare the change in the responses for those who stayed in the no-incentive condition (control-then-control), to the change for those who moved to the incentive condition (control-then-treatment). The expectation is that the incentivized, control-then-treatment respondents will move towards the correct answers. More to the point, the movement should be larger for those respondents whose partisan identity runs counter to the correct answer to the question. These are the people who might have given the wrong answer (while knowing better) without incentives, but will move to the correct answer once incentives are in place.

The fact that treatment status is varied within (rather than between) respondents should increase the power of our treatment-control comparisons. Meanwhile, the presence of a control-then-control group allows us to exclude the possibility that participants' answers changed only because of learning effects between the first and second phase (for example, because respondents looked up answers, talked with others or continued to think about the questions). Moreover, the control-then-control group allows us to exclude from the analysis any questions which are found not to have a partisan gap before the incentives treatment, as we expect no effect for those questions. If we exclude those questions from analysis, regression to the mean implies that partisan gaps for the non-excluded questions are expected to decrease between the first and second phase. Without a control-then-control condition, we could not account for that possibility.

3.2 Factual questions and pilot study

To ensure that the set of factual questions asked of respondents was adequate to address our research questions, a pilot study was built into the design. That is, the first group of respondents who participated in the pre-treatment condition were asked a broad set of True/False questions on immigration and climate change. As results came in, I dropped any questions whose partisan gaps (percentage correct among Republicans versus Democrats) were substantively small. In addition, I retained two questions about economic performance under President Obama, to allow comparison with earlier paper. See Appendix A for details on the questions fielded.

Questions that are filtered out based on these criteria were not fielded among the rest of the pre-treatment respondents, and were not included in the post-treatment phase. As a result, some respondents answered more questions than others in their pre-treatment phase. However, since pilot respondents and post-pilot respondents are selected into control-then-control and control-then-treatment at the same rate, pilot respondents can be analyzed as part of the full sample without biasing our estimates.

Respondents are given 20 seconds to answer each question. Bullock et al. (2015) showed that this response time (plus clear instructions) effectively discourages the large majority of MTurk participants from looking up answers, even when incentivized. They checked this both by asking participants about cheating and by including a few difficult placebo questions, to which most respondents could not know the answer without cheating. To verify this, I will ask all participants at the end of the study whether they looked up the answer

to some of the questions (after reassuring them that their response will not influence their pay). Any questions for which a respondent looked up the answer will be dropped from the analyses for that respondent.

Finally, to analyze how the effect of incentives varies with question difficulty, we require sufficiently reliable difficulty estimates. As I mentioned above, these difficulty estimates are based on the pre-treatment correct rate among independents. For that reason, I will oversample independents in the pre-treatment phase until we can estimate their correct rate with a confidence interval spanning less than 10 percentage points on each question. [1]

3.3 Source bias

As respondents answer these questions, it is possible that they perceive some bias in the sources on which these questions are based. When incentivized to give the correct answer, what respondents offer may not be the truth they believe in, but the truth as represented by these sources. To evaluate this alternative explanation, I will tell respondents what source the correct answer for each question was based on. After the factual questions (but before revealing the answers), I will ask respondents whether they believe each source tends to present facts in a pro-Democrat, pro-Republican, or mostly neutral fashion (see Appendix A for question wordings). We can then analyze whether the incentive effects, if any, continue to exist after we control for respondents' perception of the bias in our sources.

4 Planned analyses

The unit of analysis is a respondent-question pair. In each of these pairs, the correct response will either be convenient (-1) or inconvenient (1) given the partisanship of the respondent. Independent respondents will get a convenience score of 0 on all questions, since expressive benefits should not pull them toward either answer. Most analyses will include partisans who are "leaners", i.e. people who see themselves as independent but closer to one party than another. The dependent variable in all analyses is whether, in each respondent-question pair, the respondent moved from an incorrect to a correct answer (1), did not move (0), or moved from a correct to an incorrect answer (-1).

4.1 Incentives for depolarization

Naturally, we would expect to see more respondents move to correct answers in the control-then-treatment condition than in the control-then-control condition. But if some of the incorrect pre-treatment responses were due to cheerleading, and the treatment is effective at reducing it, then we will see this movement disproportionately among those partisans who must face an inconvenient truth in answering the question.

I will start by running a basic linear model with robust standard errors and the following explanatory variables: (1) treatment versus control group, (2)

[1] I will only collect this sample, and perform the question difficulty analyses, if we find a significant treatment effect in the simpler model. After all, analyzing moderators of the incentive effect is most relevant if that effect is itself large.

convenient versus inconvenient, and (3) the interaction between the two. To illustrate the results, I will use bar plots showing the number of respondents in each category (-1, 0, 1), grouped by treatment group and question convenience. In the appendix, I will include two robustness checks: an ordered logit model, and a model where partisan leaners are excluded.

Partisan cheerleading leads us to expect that incentives will have different effects on Democrats and Republicans. But we also expect those two groups to have different pre-treatment correct rates. For example, on a question where the correct answer is inconvenient for Democrats: (1) more Democrats should get the question wrong pre-treatment, and (2) among those respondents who get it wrong pre-treatment, more Democrats than Republicans should change to the right answer once incentivized. The reason is that the some Democrats were getting the question wrong because they were cheerleading. To disentangle these two effects, I will run a second analysis using only those respondent-question pairs where the respondent answered the question incorrectly in the pre-treatment phase. Model specifications are the same as above, though now the outcome variable is binary. Once again, I will include an alternative nonlinear (logistic) model in the appendix.

Finally, I will check the alternative explanation that respondents change their responses because they know what they are "supposed" to say. To explore this, I will add to the base model a variable indicating the perceived bias (from -3 to 3) of the question's source according to the respondent, as well as an interaction between that variable and treatment group. I hypothesize that we will continue to see a significant two-way interaction term between treatment group and convenience (measuring the differential effect of incentives on inconvenient questions in the absence of bias).

4.2 Moderators of the incentive effect

Next, I will investigate what features of a respondent-question pair make the treatment most effective. To that end, I will introduce two new question characteristics: independent pre-treatment correct rate, and pre-treatment partisan gap. The first indicator is simply the estimated percentage of political independents who get the question correct in the absence of incentives. As noted above, it measures question difficulty. The second indicator is the estimated distance between correct rates among Democrats and Republicans in the absence of incentives. This distance will be largest (1) when Democrats and Republicans have opposite beliefs, or (2) when they are highly motivated by their identities to give opposite answers. I hypothesize that incentives will work best on low-difficulty questions with large partisan gaps. I also hypothesize that the treatment will work best on highly educated respondents, as they are most likely to know the correct answer to these questions.

To test these hypotheses, I will conduct the following analyses. First, I will expand the basic linear model with the following indicators: (1) independent correct rate, (2) interactions between independent correct rates and all three original variables (including the treatment-by-convenience interaction), (3) partisan gap, and (4) interactions between partisan gap and all of the original variables. If the new three-way interactions are statistically and substantively significant, this means that the effect of incentives varies with the issue at hand as hypothesized.

Finally, I will run a separate linear model with all the original variables, respondent education (as measured on an eight-point scale), and interaction terms between education and all three original variables. Again, the quantity of interest is the three-way interaction between treatment group, convenience (of the correct answer for the respondent), and education. If results were different for nonlinear models in the previous section, then I will also add in the appendix nonlinear models for the analyses in this section.

4.3 Question-level analyses and comparison with economics

To conclude, I will run a separate analysis for each question, including the two economics questions that serve as a comparison with existing studies. I will include plots showing the estimated treatment effect (i.e. size of the convenience-treatment interaction term) for each question. Though I expect large error terms for these question-level analyses, they should help us explore what facts are and are not sensitive to incentives, as well as compare our non-valence topics to a previously studied valence issue.

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A Appendix A: Factual and bias questions

A.1 Factual questions

A.1.1 Introduction

We will show you a series of statements and ask if they are true or false. You will also see the source for each correct answer.

Please don't look up the answers or ask someone else. If you don't know an answer, just give us your best guess. You will have 20 seconds to answer each question before you automatically continue to the next.

A.1.2 Climate Change

Items retained into post-treatment phase:

- True or False: more than 90% of scientists believe that climate change is almost definitely caused by humans. source for correct answer: NASA. (correct answer: True)
- True or False: temperature records after 1998 show no global warming. source for correct answer: the National Oceanic and Atmospheric Administration. (correct answer: False)
- True or False: the Earth is warming up at about ten times faster today than it does after an ice age. Source for correct answer: NASA. (correct answer: True)
- True or False: If sea levels keep on rising at their current rate, most of the land mass of Florida will be flooded by 2050. Source for correct answer: the National Oceanic and Atmospheric Administration. (correct answer: False)
- True or False: scientists have proven that Hurricane Sandy was caused by man-made climate change. Source for correct answer: the National Oceanic and Atmospheric Administration. (correct answer: False)

Items dropped because of small partisan gaps:

- True or False: the temperature on Earth has already gone up by more than 5 F over the past century. Source for correct answer: NASA. (correct answer: False)
- True or False: the Earth is warmer now than it has been in the past 1,000 years. Source for correct answer: NASA. (correct answer: True)

A.1.3 Immigration

Items retained into post-treatment phase:

- True or False: the foreign born population in the US has more than doubled since 1990. Source for correct answer: the Pew Research Center. (correct answer: True)
- True or False: Immigrants to the U.S. commit crimes at a higher rate than native-born Americans. Source for correct answer: Justice Quarterly. (correct answer: False)
- True or False: More than half of all Fortune 500 companies were founded by immigrants (people born outside the US). Source for correct answer: Partnership for a New American Economy. (correct answer: False)
- True or False: At the moment, only 1% of the US-Mexican border has a wall or fence. Source for correct answer: the Pew Research Center. (correct answer: False)

Items dropped because of small partisan gaps:

- True or False: About as many illegal immigrants are in the U.S. today as when President Obama's term began in 2009. Source for correct answer: the Pew Research Center. (correct answer: True)
- True or False: Almost 40% of Republicans think the US should accept Syrian refugees. Source for correct answer: the Pew Research Center. (correct answer: False)

The following item was dropped because deportation could reasonably be construed either as a valence issue or a non-valence issue:

- True or False: President Obama deported more illegal immigrants than President George W. Bush. Source for correct answer: the Pew Research Center. (correct answer: True)

A.1.4 Exploratory items

A number of items were retained into the post-treatment phase though they are not planned to be included in the analyses. These items were fielded to explore the relationship between non-valence items (i.e., the climate change and immigration items on which this study focuses) and valence items.

- True or False: the public debt of the U.S. government increased by over 85% over the course of President Obama's term (2009-2016). Source for correct answer: Department of the Treasury. (correct answer: True)
- True or False: the U.S. employment rate increased by about half over the course of President Obama's term (2009-2016). Source for correct answer: Bureau of Labor Statistics. (correct answer: False)

A.2 Bias questions

In this study, we asked you about climate change facts coming from a number of organizations. For each of these organizations, can you tell us whether you think it provides information that overstates the risks of climate change, understates the risks of climate change, or is mostly accurate? [scale from -3 to +3]

- the National Aeronautics and Space Administration (NASA)
- the National Oceanic and Atmospheric Administration (NOAA)

Next, we asked you about immigration facts coming from different organizations. For each of these organizations, can you tell us whether you think it provides information that overstates the problems caused by immigration in this country, understates them, or is mostly accurate? [scale from -3 to +3]

- Pew Research Center
- Justice Quarterly
- Center for Investigative Reporting

Finally, we asked you about economics facts coming from the Department of the Treasury. Can you tell us whether you think the Department of the Treasury provides information that overstates the performance of the economy under Obama, understates it, or is mostly accurate? [scale from -3 to +3]