

A Measurement Gap? Effect of Survey Instruments on Partisan Knowledge Gaps

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Abstract

Conventional wisdom suggests large, persistent gaps between partisans' stores of political knowledge, fanning concerns about democratic accountability. We reconsider the frequency and size of these "partisan knowledge gaps," in series of experiments. Our findings suggest that knowledge gaps—when they do exist—stem more from motivated responding than genuine differences in factual knowledge.

Two Theories of Partisan Gaps

Research shows that partisan gaps in political knowledge are wide and widespread ([Bartels 2002](#); [Jerit and Barabas 2012](#); [Lodge and Taber 2013](#)).

There are two broad ways partisan gaps in political knowledge can come into existence. It could be that partisan gaps are a result of the fact that partisans know different things—be it knowledge or misinformation. Or partisan gaps could be an artifact of the survey design.

Partisan Gaps in Knowledge

Partisan gaps in survey measures of political knowledge may reflect actual gaps in the political knowledge of partisans. These gaps in political knowledge could be due to two factors. First, partisans know different things because they are in different filter bubbles (*CITES*) or echo chambers (*CITES*). Selective exposure (even conditional on no biases in memory, etc.) can lead partisans to know different correct and incorrect things about the world.

Selective exposure is generally made worse by “motivated skepticism” (*CITES*). People are more skeptical of uncongenial than congenial information and thus may be more likely to follow-up and do the due diligence to disprove an uncongenial fact or may just take uncongenial information to be untrue and move past it.

Lastly, people may be less likely to remember uncongenial information.

Partisan Gaps As Artifact of Survey Design

Partisan gaps in survey responses may also emerge as an artifact of questionnaire design. Following this argument, knowledge gaps emerge because questionnaires are designed in a way that they encourage respondents to provide answers that are congenial with their ideological or partisan predispositions.

Some respondents who don't know the answer make an educated guess from other

things they do know. This is hard to tell from both knowledge and blind guessing but not the same as either. Some inferences, for closed-ended questions, are a matter of eliminating options. A respondent who does not know the correct option to be correct but does know all the others to be incorrect will choose the correct one despite not having previously known it to be true. A respondent who likewise does not know the correct option to be correct but knows fewer than $C - 1$ of C (e.g., only one or two of four) response options to be incorrect, increases his or her chance of choosing the correct one despite not knowing it to be true. In this case, his or her response is presumably a compound of inference, in reducing the choice set, and blind guessing among the remaining options. Other inferences are from side information—on the basis of other knowledge. The “logic” is typically a matter of either stereotypical or hedonic thinking. Either will sometimes produce a correct response. Asked about what happened to the federal deficit during the Obama administration, some people, regarding Democrats as generally insouciant about deficits, may infer, without actually knowing, that it increased. So may some Republicans, preferring to think ill of Democratic administrations (and frowning on an increased deficit).

This can be due to two factors.

One, respondents give expressive answers that align with their partisanship or ideology to questions they might not know the answers to

Two, respondents guess the answer to a question and use partisan related cues in the question to guide their guesses

The latter explanation has attracted a bunch of research. Some research shows that up to half of the partisan gaps are a result of expressive responding (??). Though see some other research. Our paper tries to disambiguate the two explanations by mounting a series of survey experiments. We start w

(Zaller 1992)

What are factors in current questionnaire design that could encourage partisan gaps?

Empirical implications of the theories

Inflationary features — Don't know (cite bullock who prices DK), social proof, guessing encouraging, and not accounting for guessing.

What are the empirical implications of each theory, what should we see in the data if each argument was right

Theory 1: partisan gaps should not be affected by changes to the questionnaire design. the questionnaire design does not affect what people hold to be true (correctly or incorrectly) or what they are ignorant about

Theory 2: partisan gaps should become smaller/disappear once questionnaires are changed and all partisan knowledge gap encouraging features have been removed

- Real World (RW): The RW condition reflects the real-world standards most closely—it does not feature a 'Don't Know', it often features social proof about the incorrect answer, for instance, "Some people believe Barack Obama was not born in the United States, but was born in another country" on a question about where Mr. Obama was born, and some neutral information about the topic, like "According to the Constitution, American presidents must be 'natural born citizens'" on the birthplace question, that may encourage the ignorant to take a guess.
- No DK + SP + GE: It never includes the 'Don't Know,' it always includes neutral information that encourages people to take a guess, and it also includes social proof about the incorrect answer.
- DK + SP + No GE: The FSR standard adds a 'Don't Know' and removes from the question stem any neutral information that is likely to cause people to offer a substantive response when they don't know.
- DK + No SP + No GE: The best version of the multiple-choice question—no social proof,

no guessing encouraging neutral wording, and a don't know—while maintaining commensurability with other items.

- Confidence Scoring: Respondents rate the claim on a 0 to 10 scale going from 'definitely false' to 'definitely true.' The question is inspired by other attempts to take account of confidence in distinguishing misinformation from incorrect responses stemming from processes like inference, unlucky guessing, and such (see, for instance, ([Pasek, Sood and Krosnick 2015](#))).

Partisan Knowledge Gaps (MTurk)

Data and Research Design

In a first survey on Amazon Mechanical Turk (MTurk) in April 2017, we randomly assigned 1,059 respondents to either closed-ended or truth-scale questions about four items. In the closed-ended version of the survey the participants received five options as answers, including a “Don’t Know” option. In the truth-scale version of the survey respondents were asked to access the truth of the four statements that were answer options in the closed-ended questions. The question in this section of the survey covered the Affordable Care Act (2), the effect of greenhouse gases (1), the consequences of president Trump’s (then) recent executive order on immigration. We further asked all participants two closed-ended questions about the development of the federal deficit under presidents Bush and Obama. Respondents had the following response options: increased (correct in both cases), remained about the same, decreased, and don’t know. Both questions were then followed by a probe. Participants were randomly assigned to an open-ended follow-up question that asked them why they chose this response or a closed-ended ended version that gave them eight options to choose. The exact question wording for each of the items is presented in [Appendix SI 3](#).

In a second survey on Amazon Mechanical Turk (MTurk) in July 2017, we randomly assigned 1,253 respondents to one of five conditions—Real World (RW), Iron Pyrite Standard (IP), Fewer Substantive Responses (FSR), 14k Gold Standard (14k), and the 24k Gold Standard (24k). In each condition respondents answered 9 misinformation items, ranging from citizenship and religion of Obama to whether global warming is happening or not. (The exact question wording for each of the items is presented in [Appendix SI 2](#).) Respondents assigned to RW and IP saw a simple preface: “Now here are some questions about what you may know about politics and public affairs,” while in all the other conditions, they were reassured that it is ok to not know answers to these questions and to commit to not looking up answers or ask-

ing anyone and to mark don't know when they don't know. (Again, see [Appendix SI 2](#) for the specific wording.) The RW condition reflects the real-world standards most closely—it does not feature a 'Don't Know', it often features social proof about the incorrect answer, for instance, “Some people believe Barack Obama was not born in the United States, but was born in another country” on a question about where Mr. Obama was born, and some neutral information about the topic, like “According to the Constitution, American presidents must be ‘natural born citizens’” on the birthplace question, that may encourage the ignorant to take a guess.

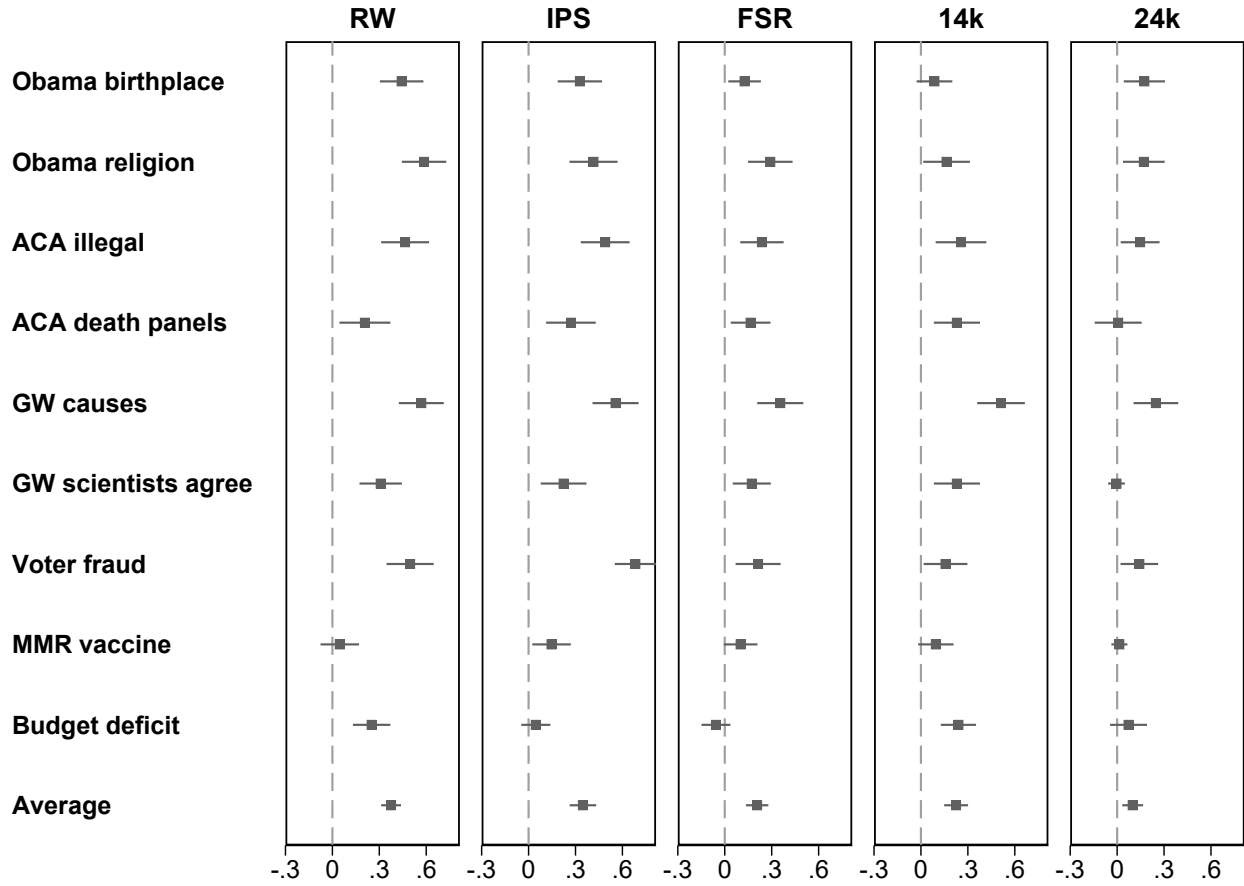
The Iron Pyrite Standard or the Fool's Gold Standard reflects the standard likely to inflate the number of incorrect responses the most. It never includes the 'Don't Know,' it always includes neutral information that encourages people to take a guess, and it also includes social proof about the incorrect answer.

The FSR standard adds a 'Don't Know' and removes from the question stem any neutral information that is likely to cause people to offer a substantive response when they don't know. The 14k gold standard gives us the best version of the multiple-choice question while maintaining commensurability with other items. The 14k, vis-a-vis FSR removes social proof from the stem as well.

The 24k standard asks respondents to rate the claim on a 0 to 10 scale going from 'definitely false' to 'definitely true.' The question is inspired by other attempts to take account of confidence in distinguishing misinformation from incorrect responses stemming from processes like inference, unlucky guessing, and such (see, for instance, ([Pasek, Sood and Krosnick 2015](#))).

We start by summarising the average partisan gap for each survey item and each treatment arm from the MTurk sample. [Figure 1](#) shows the results. Each marker represents how much more congenial the responses of the Republicans are to the Democrats. In the RW treatment arm (first column), the Republicans are, on average, 30 percentage points more likely

Figure 1: Partisan Gap by Treatment Arm (MTurk)



Each point is the estimated gap between Republican partisans and Democratic partisans for how congenial their responses are to their own party. Columns indicate the five different treatment arms described in [Data and Research Design](#). Rows indicate the nine individual survey items described in [Appendix SI 2](#) plus their average. Each point is the estimated β from estimating $1\{\text{party-congenial response}\}_i = \alpha + \beta \text{Rep}_i + \varepsilon_i$ for each of items and each of the five arms. Horizontal bars are 95% confidence intervals constructed from robust standard errors.

than the Democrats to have party-congenial responses. The subsequent four columns in [Figure 1](#) show that, while the estimated differences in party-congenial responses are precise (the narrow bars), the differences attenuated substantially depending on the treatment arms.

The attenuation is most pronounced when comparing the RW to the 24k arms (first vs. last columns). In the 24k arm, Republicans are, on average, only about 10 percentage points more likely to have party-congenial responses, a drop larger than 50 percent. [Figure 1](#) therefore gives us the first indication that partisan gaps arise, at least in part, from questionnaire artefacts

present in the different survey arms.

Results: MTurk

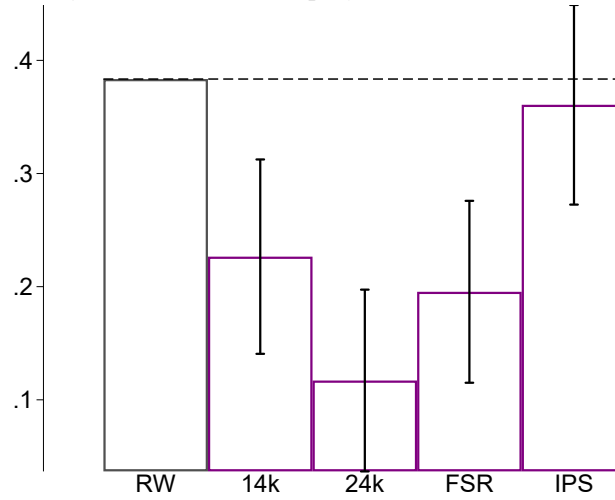
We formalize the above observation as follows. We regress the dependent variable, an indicator of whether the response is party-congenial, on the interaction of partisanship and the treatment arm:

$$y_{ijk} = \alpha + \beta(Rep)_i + \gamma(Arm)_k + \delta_k(Rep_i \times Arm_k) + (survey\ item)_j + \varepsilon_{ijk} \quad (1)$$

for respondent i , survey item j , and treatment arm k . β is the difference in partisan knowledge gaps, which corresponds to [Figure 1](#). A positive estimate suggests that Republicans are more likely than Democrats to have a party-congenial response. We focus on the δ 's, which capture how the different treatment arms affect observed partisan knowledge gaps (difference between columns in [Figure 1](#)). The baseline treatment arm is always RW, so δ captures how the four treatment arms—having the same questions with different questionnaire artefacts—mediates partisan knowledge gaps. We include the survey item fixed effects to allow each item to elicit some constant amount of partisan gap, if any, from the respondents. Standard errors are clustered at the respondent level.

[Table 1](#) reports the results from estimating [Equation \(1\)](#). Column (1) includes just the Republican variable, which is significant and consistent with conventional wisdom about gaps in partisan knowledge (e.g. [Bullock et al. 2015](#); [Laloggia 2018](#)). Column (2) includes only the treatment arms, and three of them elicit differences in partisan gaps that are statistically different from the baseline RW arm. While the treatment arm estimates are not as large as the Republican variable in column (1), it is still substantial evidence of how variable the estimated knowledge gap can be in the presence of questionnaire artefacts. Moreover, it is variable in a way that is independent of partisanship. Without accounting for partisanship, for instance, the average respondent assigned to the 24k arm is 17 percentage points less likely to give a

Figure 2: Partisan Gap by Treatment Arm: MTurk



Difference between bars indicates the predicted partisan gap by the treatment arms. Bars reconstructed from the interactions of the Republican indicator with the treatment arms as reported in column (3) of [Table 1](#). The baseline arm is RW. Capped vertical bars are 95% confidence intervals.

party-congenial response than the RW arm ($p < 0.001$). This gap is approximately two-thirds of the estimated effect of partisanship on the partisan knowledge gap.

In column (3) of [Table 1](#), we include the interaction of partisanship and treatment arms. Now the Republican variable captures the partisan gap in the RW arm (corresponding to column (1) of [Figure SI 1.1](#)). The Republican and treatment arms interactions reveal the extent to which partisan knowledge gap changes across the different treatment arms.

[Figure 2](#) shows the estimates in absolute terms. For the FSR interaction term, just adding a ‘Don’t Know’ response option reduces the estimated partisan knowledge gap by half ($p < 0.001$). The largest reduction is 71 percent ($p < 0.001$), which comes from the 24k arm. This arm allows respondents to rate their responses on a 0 to 10 scale from ‘definitely false’ to ‘definitely true’ instead of a false and true option. Including self-reported characteristics of respondents in columns (4)–(6) does not change this conclusion. Overall, the MTurk sample reveals that measured partisan knowledge gaps are highly sensitive to different questionnaire artefacts in the same questions.

Table 1: Partisan Knowledge Gaps: MTurk

	(1)	(2)	(3)	(4)	(5)	(6)
Republican=1	0.256*** (0.016)		0.375*** (0.030)	0.258*** (0.016)		0.374*** (0.029)
14k		−0.090*** (0.025)	−0.023 (0.022)		−0.093*** (0.025)	−0.026 (0.021)
24k		−0.165*** (0.022)	−0.064*** (0.018)		−0.166*** (0.022)	−0.066*** (0.017)
FSR		−0.074** (0.025)	−0.000 (0.022)		−0.075** (0.024)	−0.004 (0.021)
IPS		−0.010 (0.028)	−0.000 (0.022)		−0.014 (0.028)	−0.005 (0.021)
Republican=1 × 14k			−0.156*** (0.044)			−0.157*** (0.044)
Republican=1 × 24k			−0.265*** (0.042)			−0.266*** (0.041)
Republican=1 × FSR			−0.196*** (0.042)			−0.186*** (0.041)
Republican=1 × IPS			−0.024 (0.046)			−0.021 (0.045)
Constant	0.165*** (0.006)	0.314*** (0.020)	0.182*** (0.017)	−0.008 (0.946)	1.794+ (1.083)	0.483 (0.878)
R ²	0.329	0.270	0.354	0.335	0.277	0.361
Survey item FE	Yes	Yes	Yes	Yes	Yes	Yes
Demographic controls	.	.	.	Yes	Yes	Yes
Items	9	9	9	9	9	9
Respondents	794	794	794	793	793	793
Respondent-items	6,893	6,893	6,893	6,884	6,884	6,884

All models are linear probability models where the dependent variable indicates whether the response to a survey item is congenial to party affiliation. Demographic controls include age cohort, gender, education level (college degree, high school, no high school, post-graduate, and some college), and race (Hispanic, Asian, Black, White, Others). All models include the nine survey item fixed effects. Standard errors are clustered at the respondent level. Significance levels: + 0.1 * 0.05 ** 0.01 *** 0.001.

Partisan Knowledge Gaps via Partisan Cues

Partisan Cues

The aim of the study is to present experimental evidence about effect of partisan cues in the question stem on responses by partisans. For the purpose of the study, we examine closed-ended items asking about policy-relevant facts or objective performance, particularly those

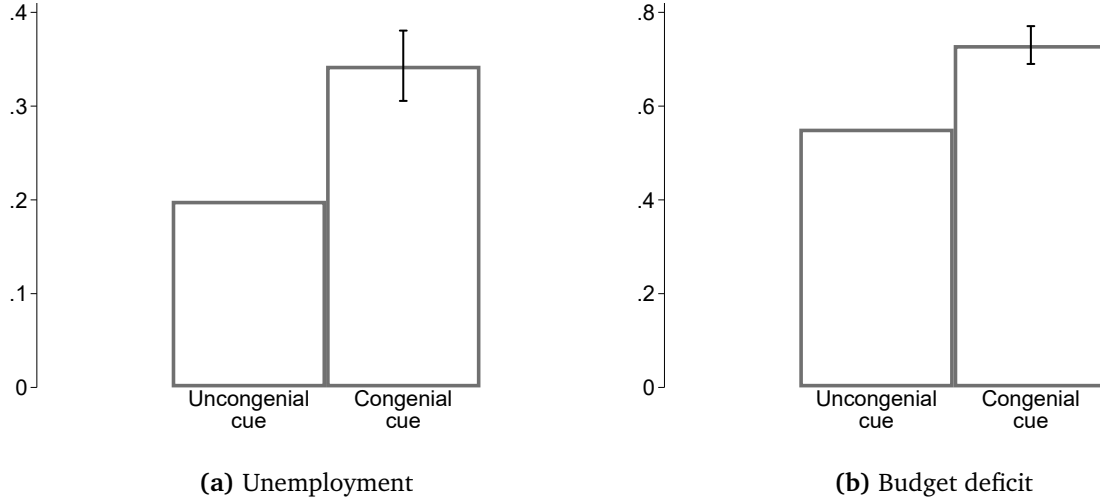
items stirring affective consistency, stereotyping, or both. In the first case, items whose correct response option one side or the other would like to disbelieve, or at least one of whose incorrect response options one side or the other would like to believe, or both; in the second case items whose correct response option defies stereotype, or at least one of whose incorrect response options conforms to stereotype, or both.

For exploring the research question, we exploit two datasets—a national survey conducted by YouGov, and a telephone survey of a random sample of adults in Texas. The YouGov survey interviewed 2000 respondents between July 10th and 12th, 2012. In Texas, a total of 1003 interviews were conducted between September 10th and 21st, 2012.

In the YouGov survey, respondents were randomly assigned to factual questions with either a Republican or Democratic cue in the stem. In a question about whether “since 2010 midterm elections, the unemployment rate [had] gone up, down, or remained the same, or couldn’t you say?”, we inserted either the phrase “when Republicans regained control of the U.S. Congress” or “when Democrats retained control of the Senate” right after the first phrase. We employed a similar manipulation for the question on budget deficit, asking how the budget deficit had fared “since the 2010 midterm elections, when Republicans regained control of the U.S. Congress (or “when Democrats retained control of the Senate”), has the budget deficit gone up, gone down, remained the same, or couldn’t you say?”

In the Texas survey, we added another condition to the above design – no partisan cue in the stem. So a third of the respondents were assigned to a question that simply read, “since the 2010 midterm elections, has the unemployment rate gone up, gone down, or remained the same? Or couldn’t you say?” For the second question we changed our design to – no partisan cue, Democratic cue, and Democratic cue plus the following introduction “based on what you have heard”. The question read, “since January 2009, have federal taxes increased, decreased, or remained the same or couldn’t you say?.” The second version gave respondents a Democratic cue by changing the initial part of the sentence; the question now read, “Since Barack Obama

Figure 3: Partisan Knowledge Gaps with Partisan Cues: YouGov Survey



Bars indicate the predicted percent of responses saying that unemployment or the budget deficit have gone up (correct responses) as reported in Table 2 (columns (1) and (4)). Capped vertical bars indicate 95% confidence intervals.

took office. . .” The third version prepended a cue designed to encourage guessing to the second version; the version read, “Based on what you have heard, since Barack Obama took office, . . .”

Results: Partisan Knowledge Gaps with Partisan Cues (YouGov)

We start with the YouGov survey to provide experimental evidence that cues in survey questions can affect responses to questions about policy-relevant and objectively verifiable facts. This survey includes questions about changes in unemployment and the budget deficit since the 2010 midterm elections, with manipulated partisan cues in the stem.

Using the YouGov survey responses, we estimate

$$\text{correct response}_i = \alpha + \beta(\text{congenial cue})_i + \varepsilon_i, \quad (2)$$

where the dependent variable is the indicator for whether the response to the question is correct. As discussed above in ?? , we model the correct response rate as dependent on whether the cue presented to individuals is congenial to responding correctly. Specifically, the congenial

Table 2: Partisan Knowledge Gaps with Partisan Cues: YouGov

	Unemployment has gone up			Deficit has gone up		
	(1)	(2)	(3)	(4)	(5)	(6)
Congenial cue	0.144*** (0.019)	0.111*** (0.025)	0.112*** (0.026)	0.178*** (0.021)	0.182*** (0.030)	0.190*** (0.029)
Republican		0.067** (0.025)	0.071** (0.027)		0.232*** (0.030)	0.162*** (0.031)
Congenial cue × Republican		0.069+ (0.038)	0.071+ (0.039)		−0.009 (0.040)	−0.009 (0.039)
Constant	0.199*** (0.012)	0.168*** (0.016)	3.170+ (1.874)	0.552*** (0.015)	0.443*** (0.021)	7.056*** (1.837)
R ²	0.026	0.041	0.069	0.035	0.090	0.190
Demographic controls	.	.	Yes	.	.	Yes
Respondent-items	2,104	2,104	2,066	2,104	2,104	2,066

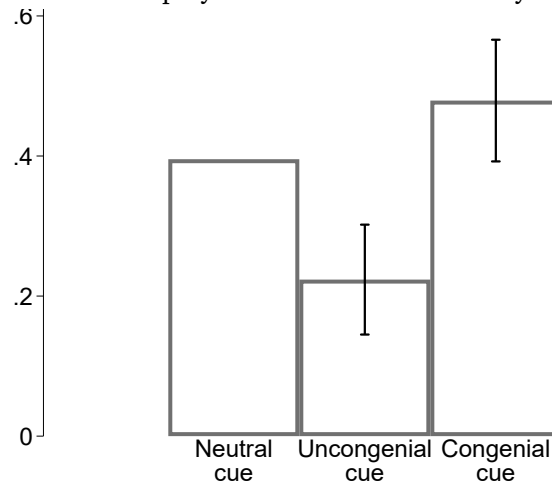
Dependent variables are indicators for whether the individual responded that unemployment or the budget deficit had gone up since the 2010 midterm elections (which are the correct responses). Congenial cue is an indicator of whether the question stem includes the cue towards getting the correct response. For Democrats, this is when the question stem includes the cue “when Republicans gained control of the US Congress.” For Republicans, this is when the question stem includes the cue “when Democrats retained control of the Senate.” Demographic controls include age cohort, gender, education level, marital status, employment status, news interest, family income, and race. Standard errors are heteroskedasticity-robust. All models are linear probability models. Significance levels: + 0.1 * 0.05 ** 0.01 *** 0.001.

cue indicator is coded as one when a Democrat receives a question stem with the cue “when Republicans gained control of the US congress.” This cue manipulates Democrats into blaming the Republicans by suggesting that unemployment has gone up, which is the correct response. The reverse happens for Republicans. The congenial cue for Republicans is coded as one when they receive the cue “When Democrats retained control of the Senate.”

Panel (a) of [Figure 3](#) shows that, by manipulating the partisan cue that respondents receive, the probability of getting the correct response for the unemployment question differs by 14 percentage points ($p < 0.001$, reported in [Table 2](#)).

Panel (b) of [Figure 3](#) shows that this systematic difference is not unique to the unemployment question. We reestimate [Equation \(2\)](#) where the dependent variable is getting the correct response that the budget deficit has gone up. When the individuals get a congenial cue, they are 18 percentage points more likely to get the correct response ($p < 0.001$). Presumably, we observe this congenial cue effect because the question stem holds the other party

Figure 4: Partisan Gap by Treatment Arm: Texas Lyceum, Unemployment



Bars indicate the predicted percent of responses saying that unemployment has gone up (correct response) as reported in column (1) of [Table 3](#). Capped vertical bars indicate 95% confidence intervals.

responsible for the increase in unemployment and deficit, which are both undesirable.¹

Results: Partisan Knowledge Gaps with Partisan Cues (Texas Lyceum)

We further supplement our results with the Texas Lyceum survey, which includes a third cue: a neutral cue. For the question about unemployment in this survey, in addition to congenial and uncongenial cues, individuals can also be randomly assigned a neutral cue where the additional question stem assigning blame to a party is absent, giving us a total of three groups: (i) no cue, (ii) congenial cue, and (iii) uncongenial cue.

[Figure 4](#) shows that our results above still hold when we include a neutral cue. Compared to individuals who received a neutral cue, individuals who receive an uncongenial cue are 17 percentage points less likely to get the correct answer that unemployment has gone up

¹[Figure SI 1.2](#) show that there is some heterogeneity in how the congenial cue affects Republicans as opposed to Democrats. However, the effect is not unique to either party since partisans of both types are more likely to get the correct response when randomly assigned the congenial cue.

Table 3: Partisan Knowledge Gaps with Partisan Cues: Texas Lyceum, Unemployment

	Unemployment has gone up		
	(1)	(2)	(3)
Congenial cue	0.084 ⁺ (0.044)	0.088 (0.061)	0.072 (0.066)
Uncongenial cue	-0.172*** (0.040)	-0.134** (0.050)	-0.164** (0.058)
Republican		0.273*** (0.058)	0.203** (0.074)
Congenial cue x Republican		0.009 (0.085)	0.030 (0.091)
Uncongenial cue x Republican		-0.065 (0.075)	-0.042 (0.084)
Constant	0.395*** (0.030)	0.236*** (0.041)	0.056 (0.170)
R ²	0.048	0.118	0.170
Demographic controls	.	.	Yes
Respondent-items	758	758	752

Dependent variable is an indicator for whether the individual responded that unemployment has gone up since the 2010 midterm elections (which is the correct response). Congenial cue is an indicator of whether the question stem includes the cue towards getting the correct response. For Democrats, this is when the question stem includes the cue “when Republicans regained control of the US Congress.” For Republicans, this is when the question stem includes the cue “when the Democrats retained control of the Senate.” Demographic controls include age cohort, gender, education level, marital status, number of children, children school enrollment, family income, religion, liberalism/conservatism, and race. Standard errors are heteroskedasticity-robust. All models are linear probability models. Significance levels: + 0.1 * 0.05 ** 0.01 *** 0.001.

($p < 0.001$). Individuals who receive a congenial cue are 8 percentage points more likely to get the correct answer ($p < 0.1$). These results are tabulated in [Table 3](#).

Finally, we examine the federal taxes question in the Texas Lyceum survey, where individuals are asked whether federal taxes have increased, decreased, or remained the same. For this question, individuals are randomly assigned (i) the Democratic cue “Since Barack Obama took office”, (ii) the Democratic cue with an additional cue that encourages guessing “Based on what you have heard, since Barack Obama took office...”, and (iii) a neutral stem.

Based on the estimates in [Table 4](#), we observe that randomly receiving a congenial cue still leads to a higher correct response rate of 21.5 percentage points relative to receiving

Table 4: Partisan Knowledge Gaps with Partisan Cues: Texas Lyceum, Federal Taxes

	Responded “Gone up”		Responded “Don’t Know”	
	(1)	(2)	(3)	(4)
Congenial cue	0.215*** (0.051)	0.171** (0.056)	−0.077* (0.036)	−0.081* (0.038)
Uncongenial cue	−0.298*** (0.042)	−0.228*** (0.048)	−0.063 (0.042)	−0.077 (0.050)
Congenial w/ guessing cue	0.091+ (0.052)	0.042 (0.057)	−0.074* (0.036)	−0.066+ (0.038)
Uncongenial w/ guessing cue	−0.290*** (0.040)	−0.234*** (0.047)	−0.038 (0.041)	−0.051 (0.043)
Constant	0.381*** (0.031)	−0.223 (0.177)	0.187*** (0.025)	0.884*** (0.180)
R ²	0.151	0.219	0.009	0.126
Demographic controls	.	Yes	.	Yes
Respondent-items	758	752	758	752

Dependent variables are indicators for whether the individual responded that federal taxes had gone up since the 2010 midterm elections (which are the correct responses) or “don’t know”. Congenial cue is an indicator of whether the question stem includes the cue towards getting the correct response. Only Republicans are able to get a congenial cue for these questions. This happens when Republicans receive the question stem that includes the cue “since Barack Obama took office.” Separately, individuals can also be assigned a cue that encourages guessing. This happens when the question stem includes “Based on what you have heard, since Barack Obama took office...” Demographic controls include age cohort, gender, education level, marital status, number of children, children school enrollment, family income, religion, liberalism/conservatism, and race. Standard errors are heteroskedasticity-robust. All models are linear probability models. Significance levels: + 0.1 * 0.05 ** 0.01 *** 0.001.

a neutral cue ($p < 0.001$). On the other hand, an uncongenial cue leads to a lower correct response of 29.8 percentage points ($p < 0.001$). We also estimate how the cue that encourages guessing affects the “Don’t Know” response rate. Presumably, a cue that encourages guessing would lead to a lower response rate for Don’t Know. We find that the guessing cues do not have a very different effect from cues that do not.

Overall, we find again using the YouGov survey and Texas Lyceum survey that questionnaire artifacts, via the addition of partisan cues in the same questions, affects the measured gaps in political knowledge.

Discussion and Conclusion

Our results clarify our understanding of partisan knowledge gaps in important ways.

A potentially more satisfying explanation for this discrepancy is that such conventional wisdom is largely based on studies using data from the [American National Election Studies \(N.d.\)](#). Much of the literature on partisan knowledge gaps has built upon [Bartels \(2002\)](#), who was the first to write about these differences ([Bullock and Lenz 2019](#)). For example, using the ANES data, [Bartels \(2002\)](#) discovered that Democrats and Republicans reported different beliefs on a variety of objective facts—such as how inflation and unemployment changed over the previous eight years—while Ronald Reagan was president. In 1988, the estimated differences between Democrats and Republicans on knowledge questions ranged from approximately 12 to 36 percentage points, depending on the question.² These kinds of questions with imprecise response options—which ask about respondents’ *assessment* of politically relevant facts rather than their actual *knowledge* of such facts—are one of the most likely source of large partisan knowledge gaps. The fact that questions with imprecise response options are commonplace on one of the biggest publicly-available sources of survey data likely helps perpetuate the idea that Democrats and Republicans approach the political world with entirely different information.

Based on our results here, we suspect that the vast majority of partisan gaps—when they do appear—are more likely to be a product of motivated responding than of partisans simply knowing different things ([Bisgaard and Slothuus 2018](#); [Bullock et al. 2015](#); [Prior, Sood and Khanna 2015](#); [Schaffner and Luks 2018](#); but see [Berinsky 2017](#) and [Peterson and Iyengar 2020](#)). None of this is to say that partisan bias does not play a role in shaping how Democrats and Republicans interpret what they know; there is ample evidence to suggest that it does

²These figures have been rescaled in percentage point terms. [Bartels’s \(2002\)](#) original calculation is that “the estimated differences between Democrats and Republicans rang[e] from .249 to .715 on the -1 to +1 scales” (137).

(e.g., [Bisgaard 2015](#); [Gaines et al. 2007](#); [Khanna and Sood 2018](#)). Nor should the small size of the average gap prevent us from noting that on many of the questions, a majority of partisans on both sides of the aisle were either ignorant or misinformed about the facts: the average proportion of Republicans and Democrats who provided correct answers to these knowledge questions is about 42% each.

While this is certainly troubling for those who view political knowledge as an essential component of democratic citizenship, there is some reason for optimism. When it comes to knowledge of political facts, more often than not, there do not appear to be large imbalances between what Democrats and Republicans know. When partisan differences do emerge, we suspect that they are often more a product of biased interpretation of survey questions rather than of differential stores of knowledge. This suggests that even in a polarized political context, most Democrats and Republicans can use the same information to make collective judgments about whether to reward or punish elected officials based on performance—whether they want to, of course, is another question.

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SUPPORTING INFORMATION

SI 1 Supporting figures

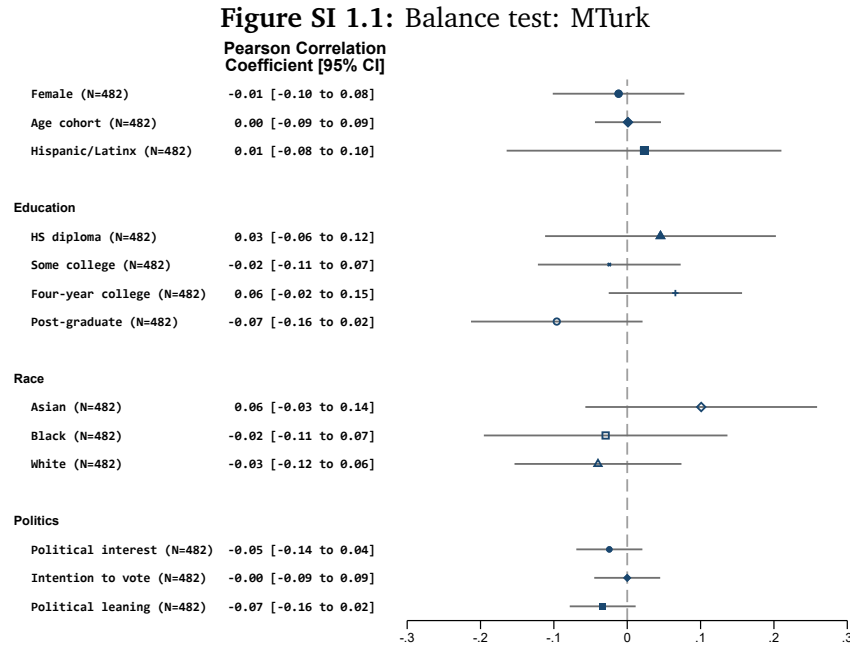


Figure shows the results from a balance test for the Amazon Mechanical Turk sample. Self-reported characteristics of respondents are compared between the respondents assigned to the 24k arm and the RW arm as described in [Data and Research Design](#). Rows are self-reported characteristics. Second column reports the correlation between characteristics and the 24k arm, and the 95% confidence intervals constructed from bootstrapped standard errors ($n=10,000$). Third column reports the estimated difference between the 24k respondents and the RW respondents. Horizontal bars are 95% confidence intervals constructed from robust standard errors.

Figure SI 1.2: Partisan Knowledge Gaps with Partisan Cues: YouGov

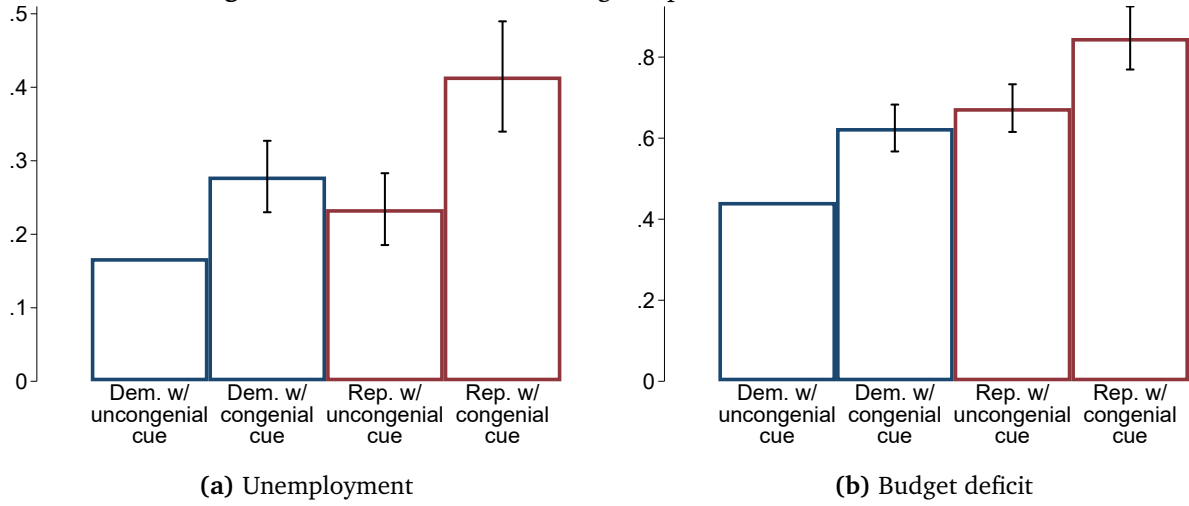


Figure shows the effect of congenial cues for the YouGov survey by partisanship. Bars indicate the predicted percent of responses saying that unemployment have gone up (correct response) as retrieved from the estimates in Table 2 (columns (2) and (5)). The estimates are obtained by estimating:

$$\text{correct response}_i = \alpha + \beta(\text{congenial cue})_i + \gamma(\text{Rep})_i + \delta(\text{congenial cue} \times \text{Rep})_i + \varepsilon_i.$$

Capped vertical bars indicate 95% confidence intervals.

SI 2 Item Text for the MTurk Study

Preface for Different Conditions

RW, IP

Now here are some questions about what you may know about politics and public affairs.

FSR, 14k, 24k

Now here are some questions about what you may know about politics and public affairs. We are interested in measuring what people currently know and can recall on their own and are just as interested in what people don't know as in what they do know. So we'd like your agreement to just say "don't know" if you don't know the answer—without looking anything up or talking with anyone about it.

Item Text 24k

Now here are a series of statements. On a scale of 0 to 10, where 0 means definitely false, 10 means definitely true, and 5 is exactly in the middle, how definitely true or false is each statement?

- Barack Obama was born in the US (T)
- Barack Obama is a Muslim (F)
- The Affordable Care Act gives illegal immigrants financial help to buy health insurance (F)
- The Affordable Care Act does not create government panels to make decisions about end-of-life care (T)
- Temperatures around the world are increasing because of human activity, like burning coal and gasoline (T)
- Most climate scientists believe that global warming is not occurring (F)
- In the 2016 presidential election, President Trump won the majority of the legally cast votes (F)
- The vaccine for measles, mumps, and rubella (MMR) causes autism in children. (F)
- Since 2012, the annual federal budget deficit has increased. (T)

Rest of the Conditions, By Item

- Obama's Birthplace

RW and IP

According to the Constitution, American presidents must be "natural born citizens." Some people believe Barack Obama was not born in the United States, but was born in another country. Do you think Barack Obama was born in ...?

- The US
- Another country

FSR

Some people believe Barack Obama was not born in the United States, but was born in another country. Was he born in ...?

- The US
- Another country
- DK (plus DK pref)

14k

Was Barack Obama born in ...?

- the US
- Another country
- DK (plus DK pref)

- Obama Religion

RW

Do you personally believe that Barack Obama is a ...?

- Muslim
- Christian

IP

Most people have a religion. Some people believe Barack Obama is a Muslim. Do you personally believe that Barack Obama is a ...?

- Muslim
- Christian

FSR

Some people believe Barack Obama is a Muslim. Is he a ...?

- Muslim
- Christian
- DK (+ DK pref)

14k

Is Barack Obama a ...?

- Muslim
- Christian
- DK (plus DK pref)

- ACA Illegal

RW

To the best of your knowledge, would you say the Affordable Care Act...?

- Gives illegal immigrants financial help to buy health insurance
- Does not give illegal immigrants financial help to buy health insurance

IP

As you may know, there is currently talk of changing the Affordable Care Act (ACA), enacted in 2010. Some people believe that the ACA gives illegal immigrants financial help to buy health insurance. To the best of your knowledge, would you say the ACA...?

- Gives illegal immigrants financial help to buy health insurance
- Does not give illegal immigrants financial help to buy health insurance

FSR

Some people believe that Affordable Care Act gives illegal immigrants financial help to buy health insurance. Does the Affordable Care Act...?

- Give illegal immigrants financial help to buy health insurance
- Not give illegal immigrants financial help to buy health insurance
- DK (+ DK pref)

14k

Does the Affordable Care Act...?

- Give illegal immigrants financial help to buy health insurance
- Not Give illegal immigrants financial help to buy health insurance
- Don't know (+ DK pref)

- ACA—Death Panels

RW

To the best of your knowledge, would you say that the Affordable Care Act ...?

- Creates government panels to make decisions about end-of-life care
- Does not create government panels to make decisions about end-of-life care

IP

Some people believe that Affordable Care Act establishes a government panel to make decisions about end-of-life care. To the best of your knowledge, would you say that the Affordable Care Act ...?

- Creates government panels to make decisions about end-of-life care
- Does not create government panels to make decisions about end-of-life care

FSR

Some people believe that Affordable Care Act establishes a government panel to make decisions about end-of-life care. Does the Affordable Care Act...?

- Creates government panels to make decisions about end-of-life care
- Does not create government panels to make decisions about end-of-life care
- DK (+ DK pref)

14k

Does the Affordable Care Act ...?

- Creates government panels to make decisions about end-of-life care
- Does not create government panels to make decisions about end-of-life care
- DK (+ DK pref)

- Global Warming—Happening + Causes

RW

Which of the following best fits your view about this? Are temperatures around the world ...?

- Increasing because of natural variation over time, such as produced the ice age
- Increasing because of human activity, like burning coal and gasoline
- Staying about the same as they have been

IP

Recently, you may have noticed that global warming has been getting some attention in the news. Some people believe that temperatures are increasing around the world because of natural variation over time, such as produced the ice age. Which of the following best fits your view about this? Would you say that temperatures around the world are...?

- Increasing because of natural variation over time, such as produced the ice age
- Increasing because of human activity, like burning coal and gasoline
- Staying about the same as they have been

FSR

Some people believe that temperatures are increasing around the world because of natural variation over time, such as produced the ice age. Are temperatures around the world ...?

- Increasing because of natural variation over time, such as produced the ice age
- Increasing because of human activity, like burning coal and gasoline
- Staying about the same as they have been
- DK (+ DK pref)

14k

Are temperatures around the world ...?

- Increasing because natural variation over time, such as produced the ice age
- Increasing because human activity, like burning coal and gasoline
- Staying about the same as they have been
- DK (+ DK pref)

- **GW—Scientist Agreement**

RW

Just your impression, which one of the following statements do you think is most accurate?

- Most climate scientists believe that global warming is occurring.
- Most climate scientists believe that global warming is not occurring.
- Climate scientists are about equally divided about whether global warming is occurring or not

IP

As you may know, the term “global warming” refers to the claim that temperatures have been increasing around the world. Some people believe that most climate scientists believe that global warming is not occurring. Just your impression, which one of the following statements do you think is most accurate?

- Most climate scientists believe that global warming is occurring.
- Most climate scientists believe that global warming is not occurring.
- Climate scientists are about equally divided about whether global warming is occurring or not

FSR

Some people believe that most climate scientists believe that global warming is not occurring. Which one of the following statements is most accurate?

- Most climate scientists believe that global warming is occurring.
- Most climate scientists believe that global warming is not occurring.
- Climate scientists are about equally divided about whether global warming is occurring or not
- DK (+ DK pref)

14k

Which one of the following statements is most accurate?

- Most climate scientists believe that global warming is occurring.
- Most climate scientists believe that global warming is NOT occurring.
- Climate scientists are about equally divided about whether global warming is occurring or not
- DK (+ DK pref)

- Voter Fraud

RW

As you may know, President Trump has said that several million people voted illegally in the 2016 presidential election and that he won the majority of the legally cast votes. Do you believe that President Trump ...?

- Won the majority of the legally cast votes
- Did not win the majority of the legally cast votes

IP

As you may know, not everyone living in the US has the legal right to vote. President Trump has said that several million people voted illegally in the 2016 presidential election and that he won the majority of the legally cast votes. Do think that that President Trump ...?

- Won the majority of the legally cast votes
- Did not win the majority of the legally cast votes

FSR

As you may know, President Trump has said that several million people voted illegally in the 2016 presidential election and that he won the majority of the legally cast votes. Did President Trump ...?

- Won the majority of the legally cast votes
- Did not win the majority of the legally cast votes
- DK (+ DK pref)

14k

In the 2016 presidential election, did President Trump ...?

- Won the majority of the legally cast votes
- Did not win the majority of the legally cast votes
- DK (+ DK pref)

• Vaccines

RW

From what you have read or heard, do you personally think that the vaccine for Measles, Mumps, and Rubella (MMR):

- Causes autism in children
- Does not cause autism in children

IP

As you may know, most children receive the vaccine for Measles, Mumps, and Rubella (MMR). Some people believe that the MMR vaccine causes autism in children. From what you have read or heard, do you personally think that the MMR vaccine:

- Causes autism in children
- Does not cause autism in children

FSR

Some people believe that the vaccine for Measles, Mumps, and Rubella (MMR) causes autism in children. Does the MMR vaccine ...?

- Cause autism in children
- Not cause autism in children.
- DK (+ DK pref)

14k

Does the vaccine for Measles, Mumps, and Rubella (MMR) ...?

- Cause autism in children
- Not cause autism in children.
- DK (+ DK pref)

- **Obama—Budget Deficit**

RW

As you may know, the federal government runs a deficit when it spends more than it takes in. Since 2012, would you say that the annual federal budget deficit has ...

- Increased
- Stayed about the same
- Decreased

IP

As you may know, the federal government runs a deficit when it spends more than it takes in. Since 2012, with the Republicans having the majority in the U.S. House of Representatives, would you say that the annual federal budget deficit has ...

- Increased
- Stayed about the same
- Decreased

FSR

Since 2012, with the Republicans having the majority in the U.S. House of Representatives,

- has the annual federal budget deficit
- Increased
- Stayed about the same
- Decreased
- DK (+ DK pref)

14k

Since 2012, has the annual federal budget deficit ...

- Increased
- Stayed about the same
- Decreased
- DK (+ DK pref)

SI 3 Item Text for the Second MTurk Study

The second Amazon MTurk survey was fielded in April 2017 and had 1,059 participants. In this survey we made use of new questions and probes to examine the effect of question design on (partisan) knowledge. We asked the participants four questions about the Affordable Care Act (2), the effect of greenhouse gases (1), and Donald Trump's recent executive order on immigration (1).

One half of the survey respondents got a conventional closed-ended item with five options including the opportunity to mark Don't know. The other half of the respondents had to assess the truth of statements on a scale from definitely false (0) to definitely true (10).

1. Does the Affordable Care Act ...?

- CE: Provide coverage for people who are currently in the country illegally, Replace private health insurance with a "single payer system", **Increase the Medicare payroll tax for upper-income Americans**, Reimburse routine mammograms only for women older than 50, Don't know (5)
- Scale: Rating each response option above from definitely false (0) to definitely true (10). Don't know was not included. See Figure [SI 3.1](#).

2. Are greenhouse gases ...?

- CE: A cause of respiratory problems, A cause of for lung cancer, Damaging the ozone layer, **A cause of rising sea levels**, or Don't know
- Scale: Rating each response option above from definitely false (0) to definitely true (10). Don't know was not included. See Figure [SI 3.2](#).

3. And does the Affordable Care Act ...?

- CE: Create government panels to make end-of-life decisions for people on Medicare, Replace Medicare with a "public option", **Limit future increases in payments to Medicare providers**, Cut benefits to existing Medicare patients, Don't know
- Scale: Rating each response option above from definitely false (0) to definitely true (10). Don't know was not included. See Figure [SI 3.3](#).

4. Does President Trump's most recent executive order on immigration ...?

- CE: Subject immigrants living in the U.S. illegally to deportation, Strip immigrants from countries supporting terrorism of their green cards, Strip immigrants from several Muslim-majority countries of their green cards, **Temporarily ban immigrants from several majority-Muslim countries**, Don't know
- Scale: Rating each response option above from definitely false (0) to definitely true (10). Don't know was not included. See Figure [SI 3.4](#).

If the close-ended questions 3 and 4 were not answered with Don't know the respondents received one of two a follow- up question:

- OE: What made you choose that response?
- CE: What made you choose that response? I asked someone I know, I looked it up, I've read, seen, or heard that, It makes me feel good to think that, It makes sense, in view of other things I know, I just thought I'd take a shot

Figure SI 3.1: Affordable Care Act 1 Scale Question

The Affordable Healthcare Act ...

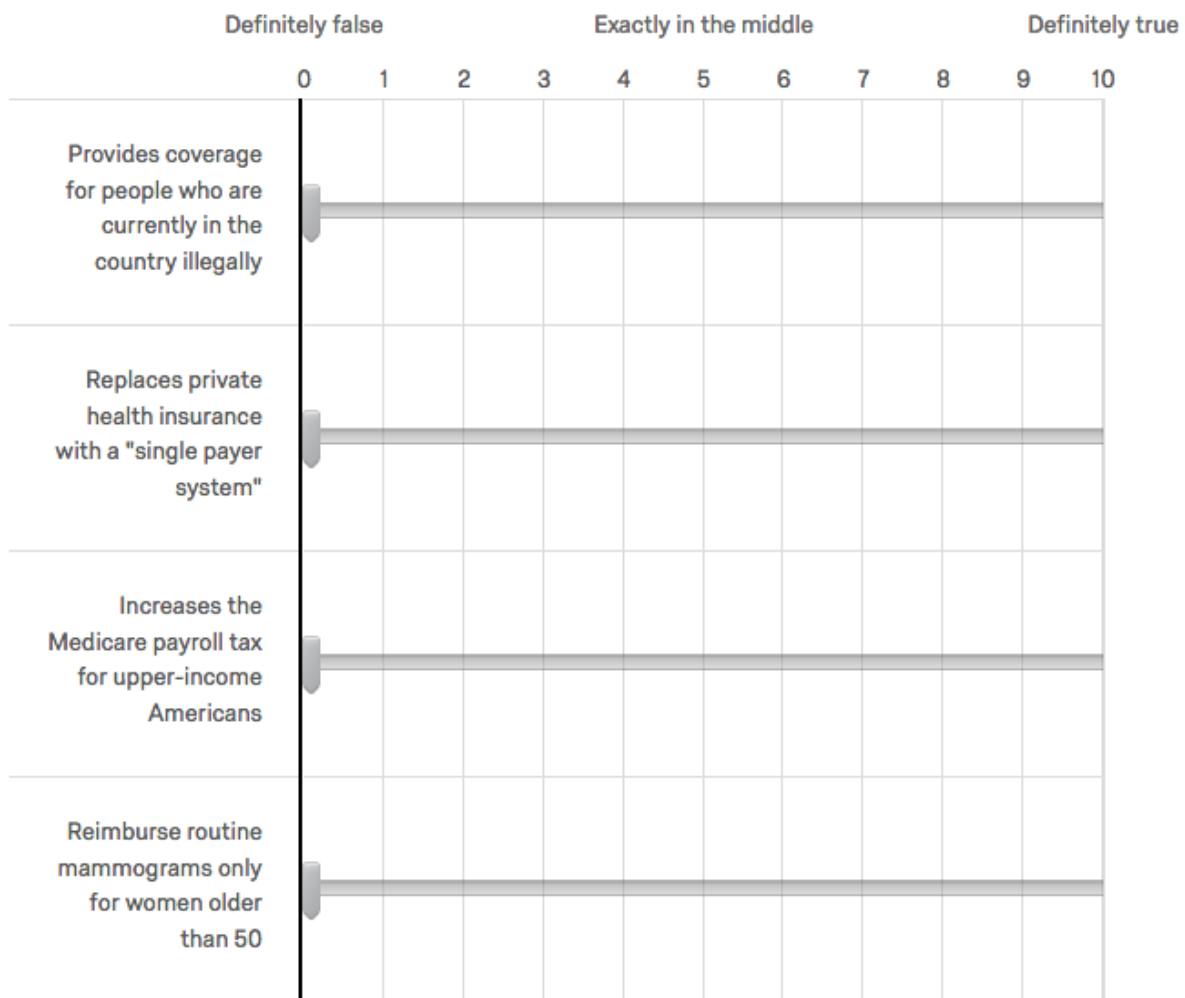


Figure SI 3.2: Greenhouse Gases Scale Question

Greenhouse gases are...

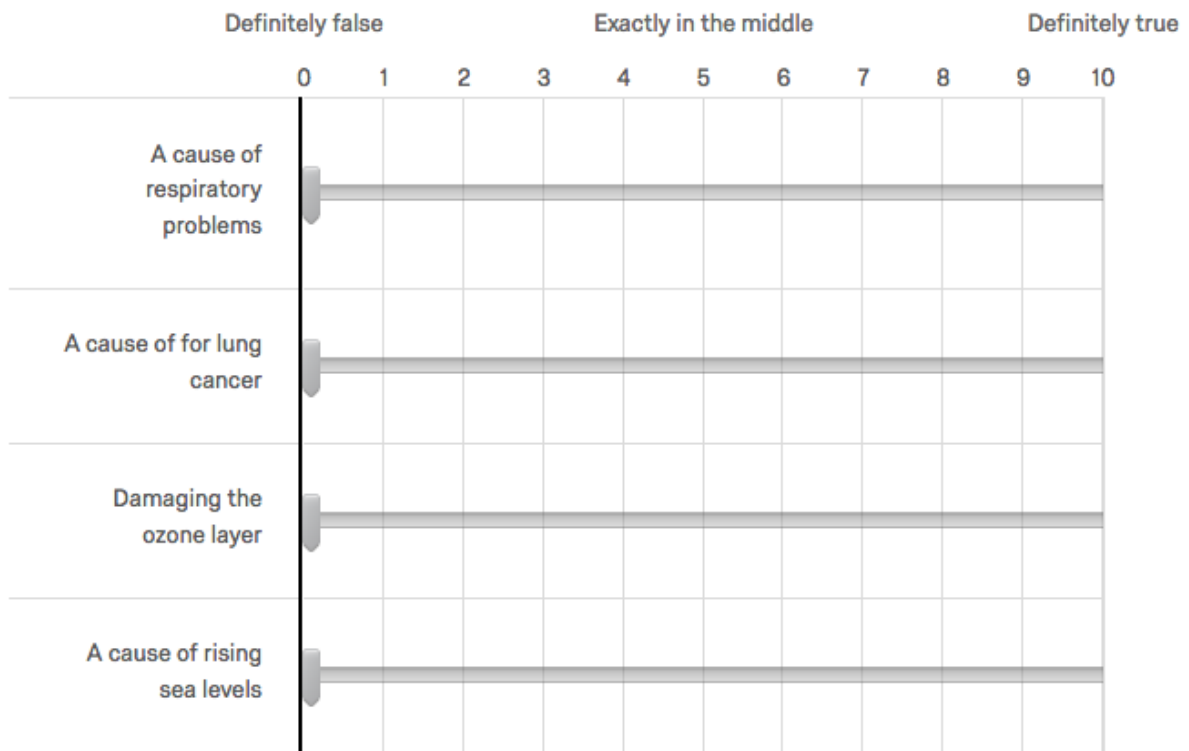
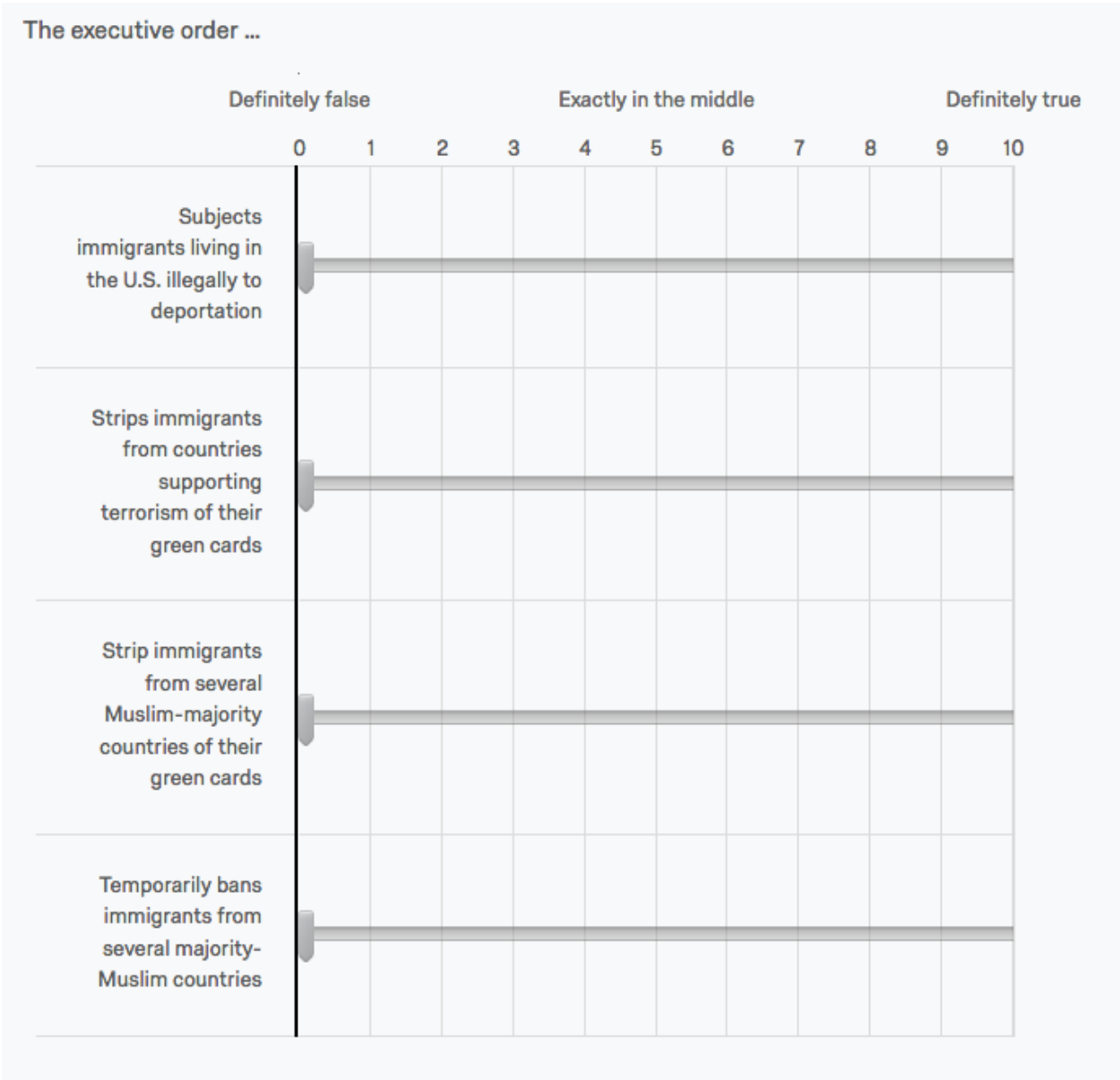


Figure SI 3.3: Affordable Care Act 2 Scale Question

The Affordable Healthcare Act ...



Figure SI 3.4: Executive Order Scale Question



Inference

The following close-ended two deficit related questions were presented to all survey participants.

1. During the time Barack Obama was president, the federal deficit: **Increased**, Remained about the same, Decreased, Don't Know
2. During the time George W. Bush was president, the federal deficit: **Increased**, Remained about the same, Decreased, Don't Know

Both questions were followed by a probe. For one half of the respondents this probe was open and for the other one the probe was closed.

- OE: What made you choose that response?
- CE: What made you choose that response? I asked someone I know, I looked it up, I've read, seen, or heard that, It makes me feel good to think that, It makes sense, in view of other things I know, I just thought I'd take a shot