

A Measurement Gap? Effect of the Survey Instrument on the Partisan Knowledge Gap

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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.

In a series of experiments, we find that partisan gap reduces to close to

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](#)). For instance, when Americans were quizzed at the end of Bill Clinton's first term in 1996 about whether the budget deficits increased, decreased, or remained the same, 39% of Democrats correctly identified that the budget deficit had decreased, only 25% of Republicans did the same ([Achen and Bartels 2016](#), 280). There are two broad explanations for these gaps. The first is that partisan gaps on partisan consequential knowledge and misinformation items are a result of the fact that partisans know different things. The second theory is that partisans gaps are an artifact of the survey design.

Partisan Gaps in Knowledge

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There are two broad explanations for these gaps. The first is that partisan gaps on partisan consequential knowledge and misinformation items are a result of partisans knowing different things. The second theory is that partisan gaps are an artifact of the survey interview process.

Partisan Differences in Beliefs

Partisan gaps in survey measures of political knowledge and misinformation may reflect *actual differences* in what partisans believe. These differences in beliefs may, in turn, stem from selective exposure to information—partisans being exposed to more congenial than uncongenial information. Selective exposure to information can stem from a variety of processes. Even without partisans favoring congenial information, it could be that because of the kinds of people that partisans are, certain information is more readily available. For instance, African Americans, who overwhelmingly identify as Democrats, may be more exposed to negative consequences of economic downturns and may hence have different beliefs about economic conditions than Caucasians, a majority of whom identify as Republicans. Similarly, selective exposure may stem from different ‘tastes’ in politics. For instance, partisans of different stripes may be interested in different policies, politicians, etc. Taken thus, the gaps are similar to other types of knowledge gaps across groups—see research on gaps in gender ([Dolan 2011](#); [Barabas et al. 2014](#)) and race ([Abrajano 2015](#)). Conventionally, however, partisan gaps are thought to stem from information avoidance—people find information that is dissonant to their worldview to be painful and work to avoid it (e.g., [Abelson 1959](#); [Festinger 1962](#)).

Whatever the cause, the effect of selective exposure is undoubtedly made worse by “motivated skepticism” ([Taber and Lodge 2006](#); [Stroud 2008](#)). People are more skeptical of uncongenial than congenial information. Therefore, they may be more likely to follow up and do the due diligence to disprove uncongenial information. Or they may simply be more likely to distrust and ignore uncongenial information. People may also be less likely to remember uncongenial information.

To summarize, it is possible that the observed partisan gaps in political knowledge in survey research reflect actual differences in beliefs.

Artifact of Survey Design

Artifact of Survey Design

Partisan gaps on partisan consequential knowledge and misinformation items on surveys may be an *artifact of questionnaire design*.

The answers to survey questions about factual beliefs reflect a mixture of beliefs, inferences, cheating, expressive responding, and guesses. Inferences, cheating, and guessing cause structured error in our estimates, by inflating our estimates of how many people believe something. Our estimates of partisan gap in beliefs also suffer. Primarily, inferences with a partisan tint and expressive responding—responding to questions about beliefs to indicate partisan positions—inflate the estimates. On partisan consequential items—items where the right answer has implications about how good the party looks—inferences with a partisan tint are likely common. For instance, when partisans don't the answer to a question, they likely use affect as a guide to infer the answer. For instance, when asked about what happened to the federal deficit during the Obama administration, Republicans, thinking Democrats cause bad things, may infer that deficits increased under Obama. Alternately, partisans may rely on stereotypical inference. Republicans may think of Democrats as generally indifferent to deficits, and hence may infer, without actually knowing, that it increased under Mr. Obama.

The extent to which survey responses are contaminated by responses other than strongly held beliefs depends on survey features. Surveys encourage respondents to respond 'expressively' by highlighting partisan motivations than accuracy motivations. ([Zaller 1992](#)) The 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 Berinsky.

Empirical implications of the theories

To disambiguate between the two explanations, we mount a series of survey experiments. If partisan gaps are a result of actual differences, minor differences in question wording and response options stem should principally have little effect on the gap. On the other hand if the gaps are sensitive to question and response attributes, it suggests that some of the partisan gaps may not be founded in differences in strongly held beliefs. The argument goes that partisan gaps emerge because surveys are designed in a way that encourage respondents to provide answers that are congenial to them even when they don't have strongly held beliefs about the question at hand. Inflationary features — not including don't know (cite bullock who prices DK), social proof, guessing encouraging, and not accounting for guessing. Our hunch is that if you take out the inflationary features, the partisan gaps go down.

- 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 order to test the conditionality of partisan knowledge gaps in survey data we fielded four surveys that test the effect different aspects of survey and question design can have on (partisan) response patterns. In studies 1 and 2, we used Amazon Mechanical Turk (MTurk) to ask participants a variety of knowledge questions in different designs. These items aim at examining how survey instructions, question wording, response options, and response design in the survey affect partisans to respond to questions in specific ways. In studies 3 and 4, we examine the role of question wording on response behavior in more detail by focusing on the effect that partisan-related auxiliary information can have on response patterns.

Studies 1 and 2

Both surveys were fielded in the second quarter of 2017. In the first study, 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 asking anyone and to mark don’t know when they don’t know. (Again, see [Appendix SI 2](#) for the specific wording.)

In the second study, we randomly assigned 1,059 respondents to either closed-ended or confidence coding questions of four items. The topics and answer options of these ques-

tions were identical to study 1 and included questions about the Affordable Care Act (2), the effect of greenhouse gases (1), and the consequences of then-president Trump’s executive order on immigration(1). In the multiple choice version of the survey the participants received five options as answers, including a “Don’t Know” option. In the confidence coding version of the survey respondents were asked to report the confidence with which they knew an item to be correct or incorrect. In this treatment the individuals were asked the same questions as in the multiple choice treatment and they had to report the confidence with which they considered each of the four statements that were answer options in the multiple choice questions to be correct or incorrect. Participants were also 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](#).

Studies 3 and 4

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 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

Study 1

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

Table 1: Partisan Gaps in Knowledge in different question designs

	Multiple Choice	Likert Scale
Congenial	0.07*	0.03*
	[0.02; 0.11]	[0.00; 0.07]
(Intercept)	0.19*	0.08*
	[0.15; 0.24]	[0.05; 0.12]
R ²	0.24	0.25
Survey item FE	Yes	Yes
N Clusters	480	422
Num. obs.	1920	1688

* Null hypothesis value outside the confidence interval.

arm (first column), the Republicans are, on average, 30 percentage points more likely 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.

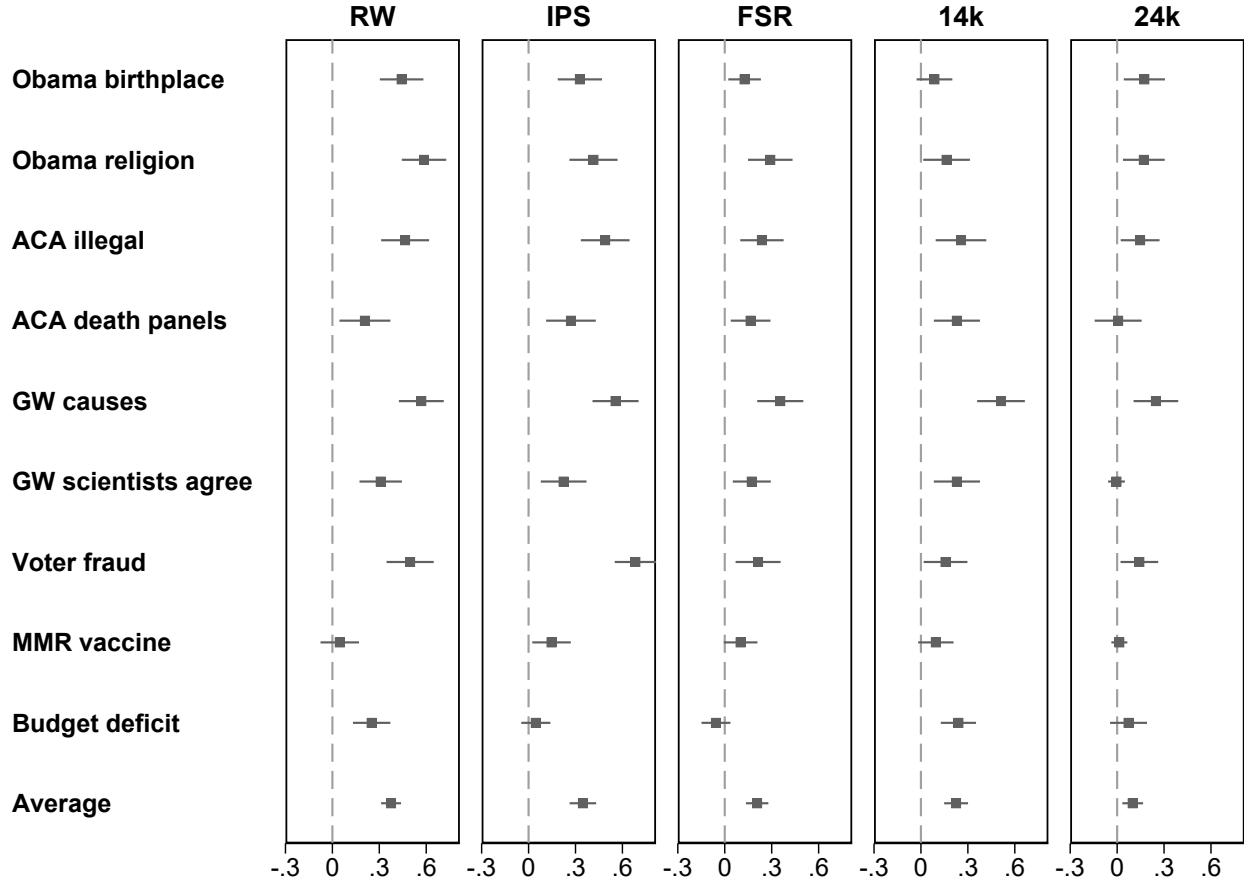
The attenuation is most pronounced when comparing the RW to the 24k arms (first vs. last columns). In the 24k arm, Republicans are, on average, only about 10 percentage points more likely to have party-congenial responses, a drop larger than 50 percent. [Figure 1](#) therefore gives us the first indication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

Study 2

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

Figure 1: Partisan Gap by Treatment Arm (MTurk)



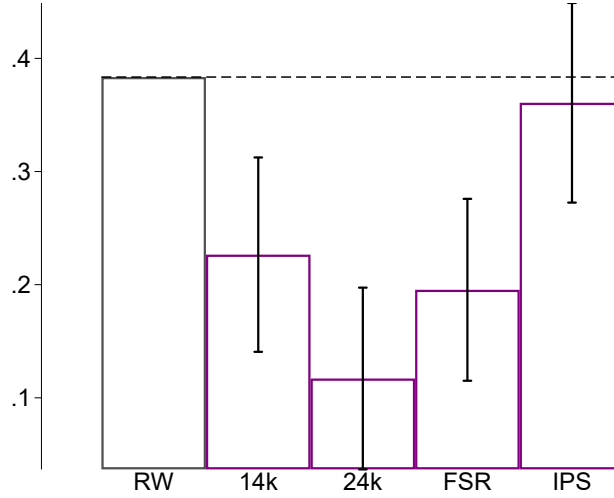
Each point is the estimated gap between Republicans and Democrats for how congenial their responses are to their own party. Columns indicate the five different treatment arms described in [Data and Research Design](#). Rows indicate the nine individual survey items described in [Appendix SI 2](#) plus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

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

Figure 2: Partisan Gap by Treatment Arm: MTürk



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 2](#). The baseline arm is RW. Capped vertical bars are 95% confidence intervals.

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 2](#) 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 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

Table 2: 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.

gap.

In column (3) of [Table 2](#), 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.

Impact of Partisan Cues on Partisan Gaps

Partisan Cues

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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?"

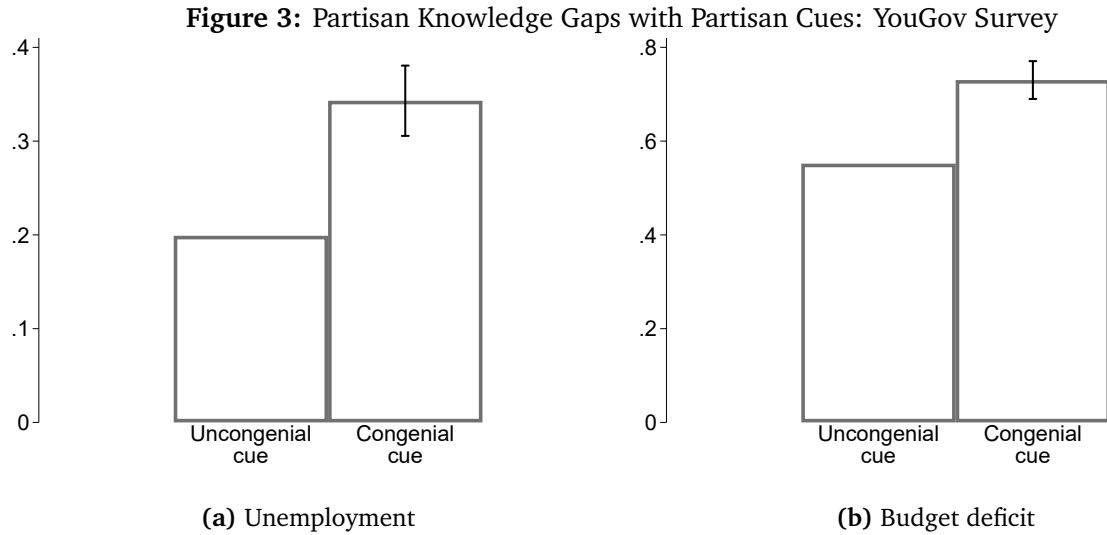
In the Texas survey, we added another condition to the above design – no partisan cue in the stem. So a third of the respondents were assigned to a question that simply read, "since the 2010 midterm elections, has the unemployment rate gone up, gone down, or remained the same? Or couldn't you say?" For 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 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

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



Bars indicate the predicted percent of responses saying that unemployment or the budget deficit have gone up (correct responses) as reported in Table 3 (columns (1) and (4)). Capped vertical bars indicate 95% confidence intervals.

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 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 3).

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 ($p < 0.001$). Pre-

Table 3: 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.

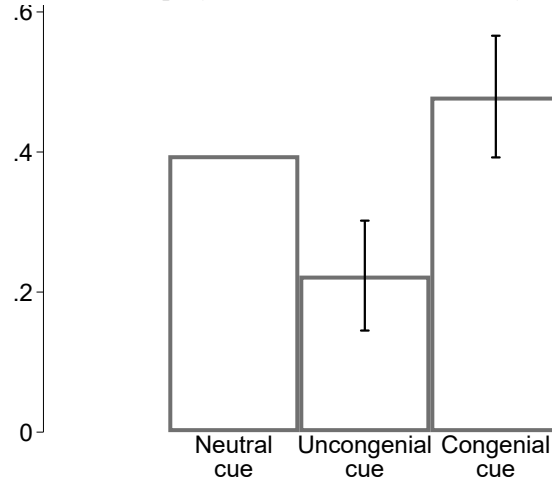
sumably, we observe this congenial cue effect because the question stem holds the other party responsible for the increase in unemployment and deficit, which are both undesirable.¹

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

¹Figure 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.

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 4](#). Capped vertical bars indicate 95% confidence intervals.

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 ($p < 0.001$). 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 4](#).

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 5](#), we observe that randomly receiving a congenial cue still leads to a higher correct response rate of 21.5 percentage points relative to receiving 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

Table 4: 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.

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.

Table 5: 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.

Discussion and Conclusion

Our results clarify our understanding of partisan knowledge gaps in important ways. The gap in what partisans believe is much smaller than what a naive reading of the survey gaps may suggest. This finding may seem to contradict the literature on selective exposure and motivated reasoning but that research field has also had a reckoning. More recent studies show that most people consume very little political news (Prior 2007; Flaxman, Goel and Rao 2016), and the news that they do consume is relatively ideologically balanced (Flaxman, Goel and Rao 2016; Garz et al. 2018; Gentzkow and Shapiro 2011; Guess 2020). There is some motivated learning (Hill 2017; Jerit and Barabas 2012; Khanna and Sood 2018) but the effects are small, and people exhibit little partisan bias in their recall of information (Khanna and Sood 2018). Other scholars have pointed out that Democrats and Republicans respond to current events in a similar fashion, bringing into question the existence of motivated learning in the first place (Gerber and Green 1999; Kernell and Kernell 2019). Therefore, the conventional wisdom regarding the individual-level mechanisms thought to produce large knowledge gaps may be flawed.

One argument is that 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](#)). ANES questions suffer from a series of inflationary features —

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](#)).

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 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

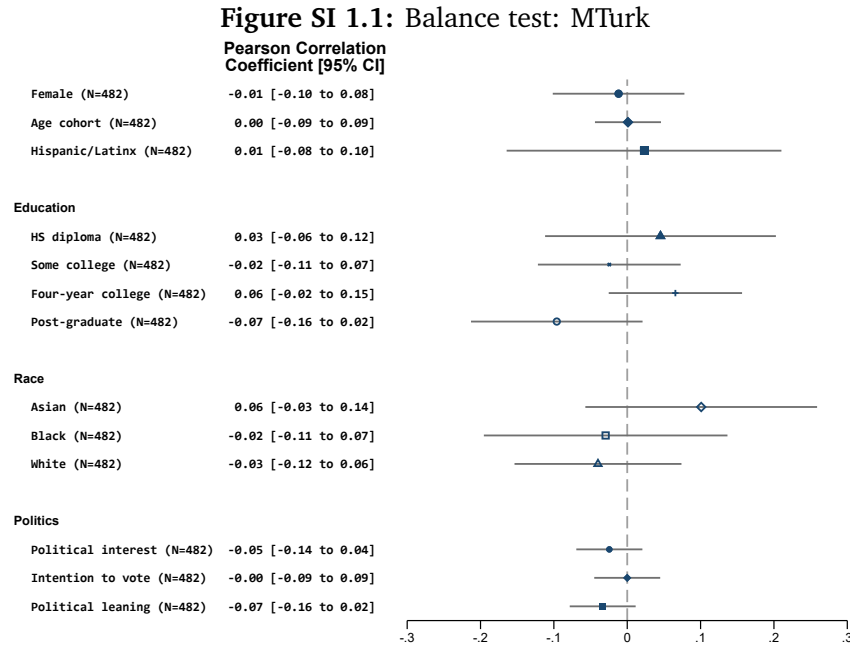


Figure shows the results from a balance test for the Amazon Mechanical Turk sample. Self-reported characteristics of respondents are compared between the respondents assigned to the 24k arm and the RW arm as described in [Data and Research Design](#). Rows are self-reported characteristics. Second column 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

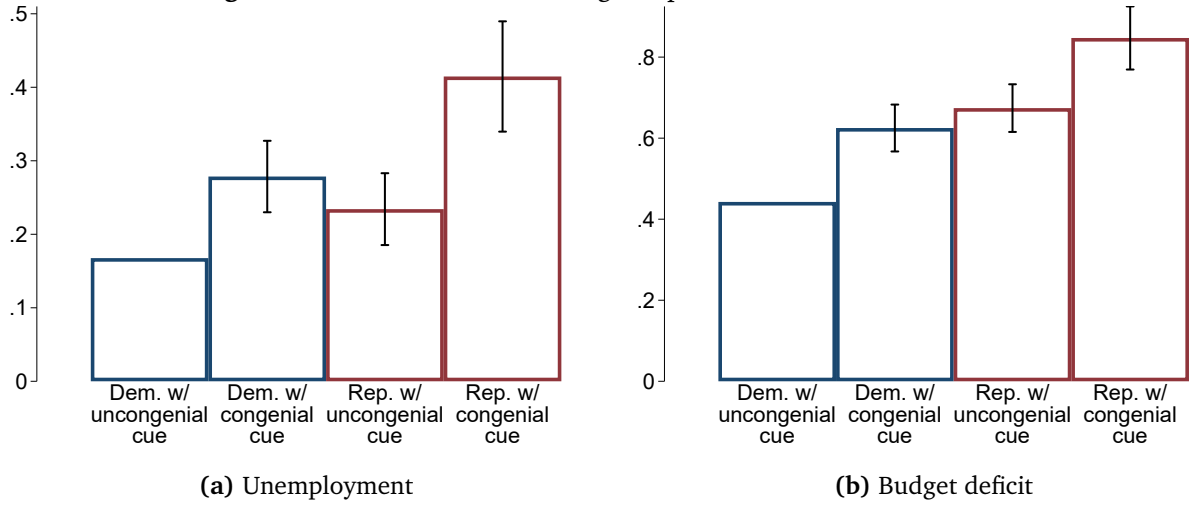


Figure shows the effect of congenial cues for the YouGov survey by partisanship. Bars indicate the predicted percent of responses saying that unemployment have gone up (correct response) as retrieved from the estimates in Table 3 (columns (2) and (5)). The estimates are obtained by estimating:

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

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 ...

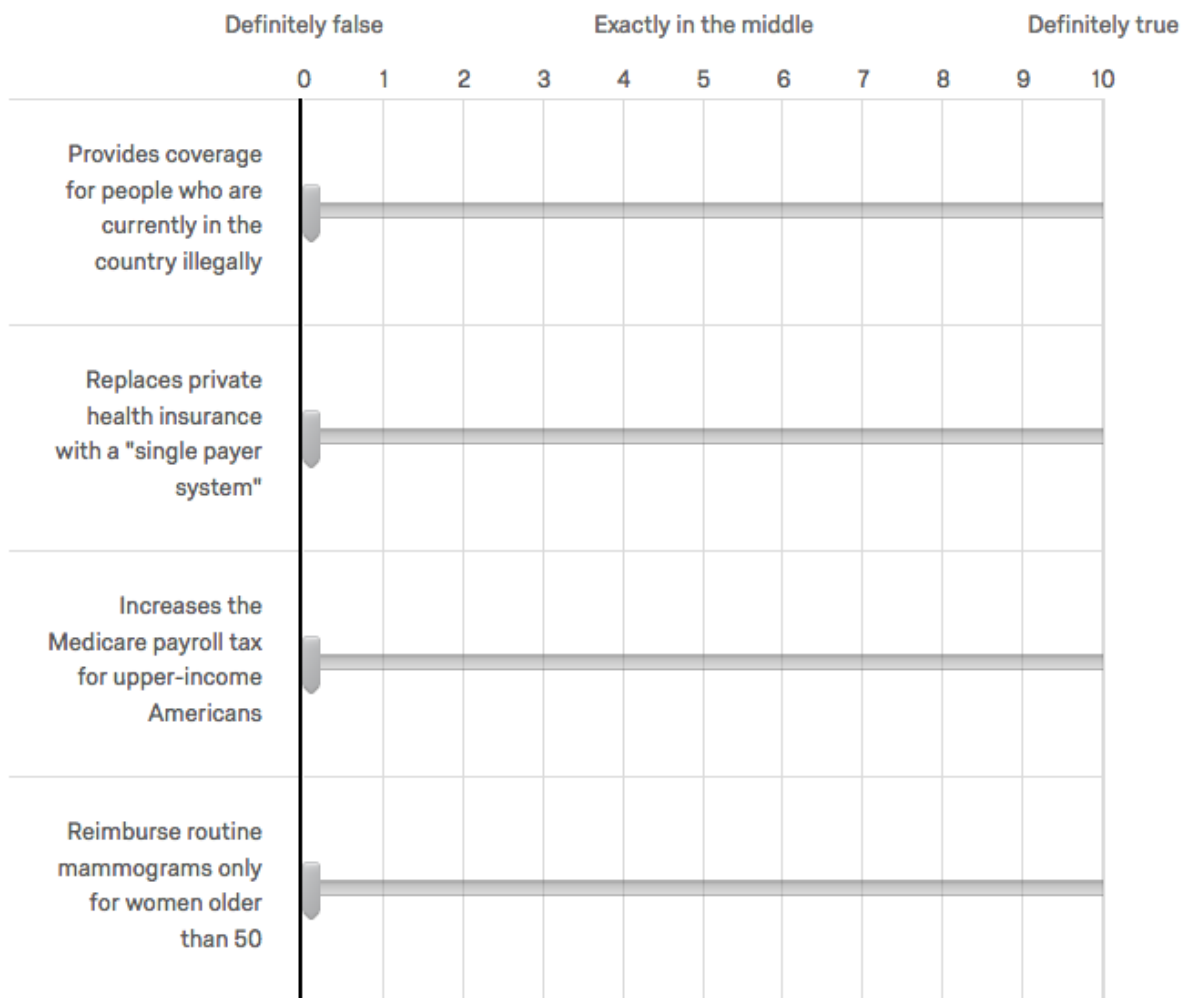


Figure SI 3.2: Greenhouse Gases Scale Question

Greenhouse gases are...

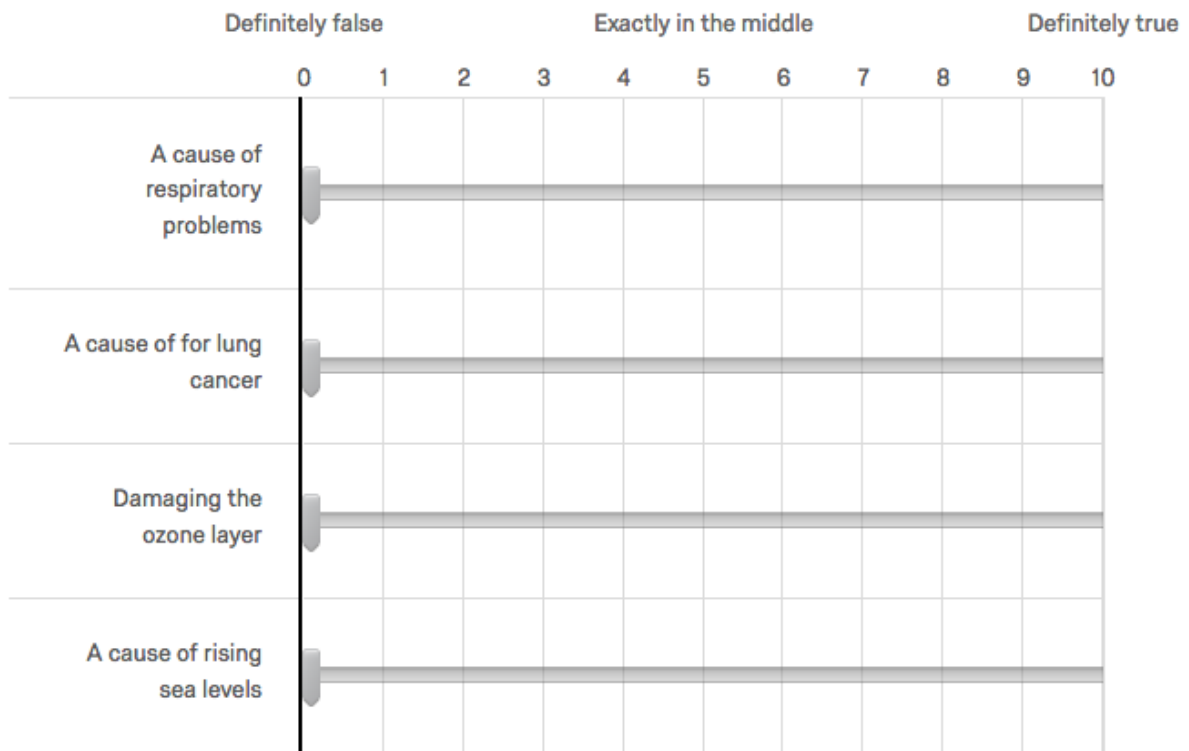
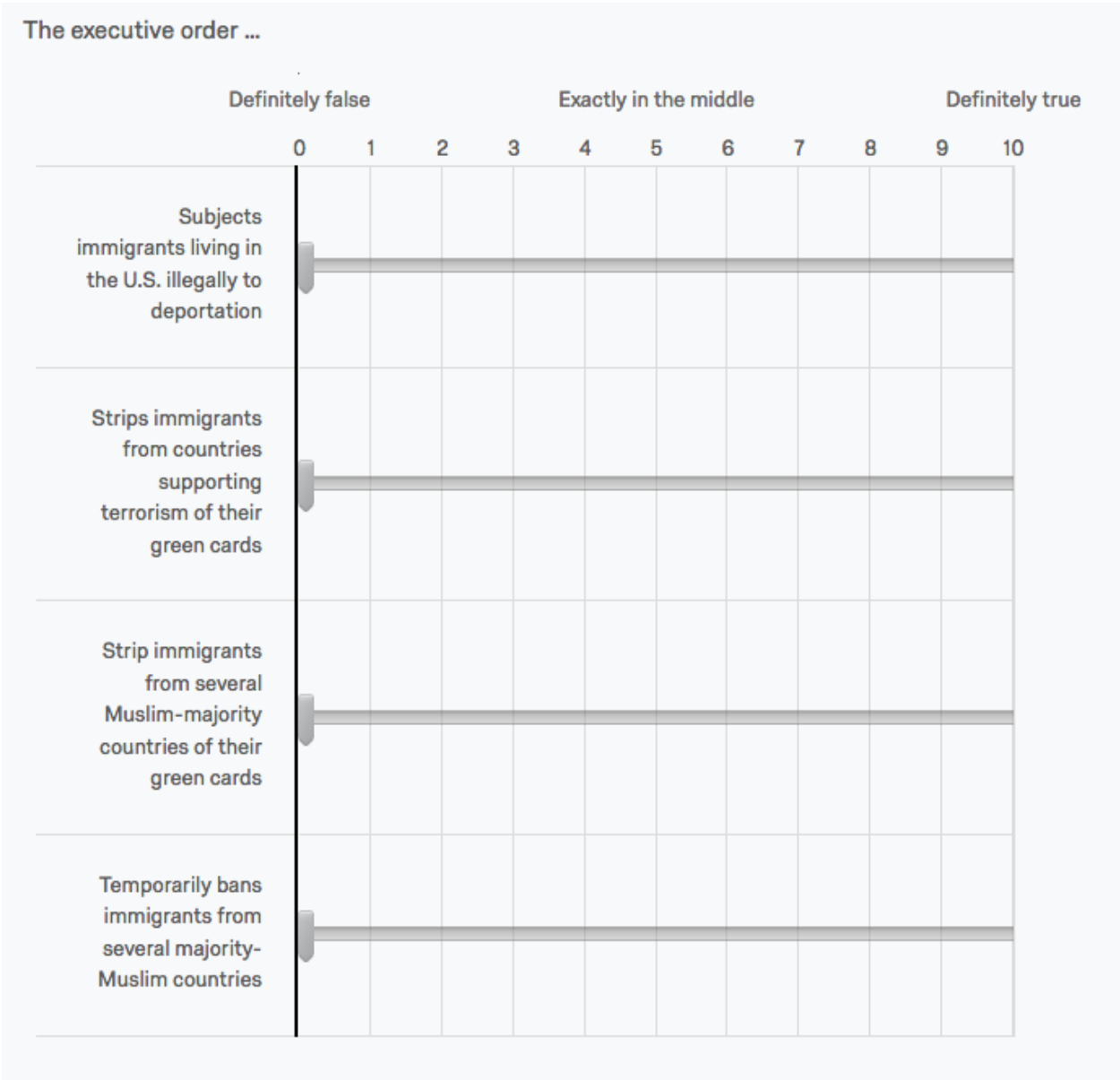


Figure SI 3.3: Affordable Care Act 2 Scale Question

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