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.

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

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, which may be because partisans trust different sources of information or because partisans pay attention to different issues, topics, and politicians (e.g., Stroud 2008*a*; 2010). To the extent that partisan gaps in political knowledge and misinformation stem from different 'tastes' in politics, the gaps are similar to other types of gaps — see research on gaps in gender (Dolan 2011; Barabas et al. 2014) and race (Abrajano 2015).

Selective exposure is generally made worse by "motivated skepticism" (Taber and Lodge 2006; Stroud 2008*b*). 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. People may be less likely to remember uncongenial information.

When people encounter information that conflicts with their predispositions, they ex-

perience cognitive discomfort, which they try to minimize by employing a variety of defense mechanisms (e.g., Abelson 1959; Festinger 1962). Specifically, they avoid exposing themselves to sources that provide them with uncongenial information, distrust such information when they do come across it, and do not work as hard to retain it (Bartels 2002; Jerit and Barabas 2012; Lodge and Taber 2013). Partisanship helps reduce cognitive discomfort by acting as a "perceptual screen," filtering in congenial facts that comport with an individual's partisan worldview while filtering out those that challenge it (Campbell et al. 1960; Zaller 1992).

To summarize, it is possible that the observed partisan gaps in political knowledge in survey research reflect actually excisiting knowledge gaps, which originate in partisans knowing different things, holding different types of misinformation or being ignorant about different aspects of politics.

Partian Gaps As Artifact of Survey Design

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

One reason why partisan gaps may be inflated is because surveys encourage people to guess when they don't know. Guesses, in turn, cause structured error. Minimally, if we don't adjust for random guessing, guesses cause us to think that more people know the thing than they do. But guesses by partisans on partisan consequential items have a structure to them. Partisans either use affect as a guide to infer the answer. For instance, asked about what happened to the federal deficit during the Obama administration, Republicans, thinking Democrats cause bad things infer that deficits increased under Obama. Alternately, a longer reasoning chain may ensue — regarding Democrats as generally insouciant about deficits, may infer, without actually knowing, that it increased.

Surveys also encourage respondents to respond 'expressively,' highlighting partisan motivations than accuracy motivations. (Zaller 1992) 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 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)).

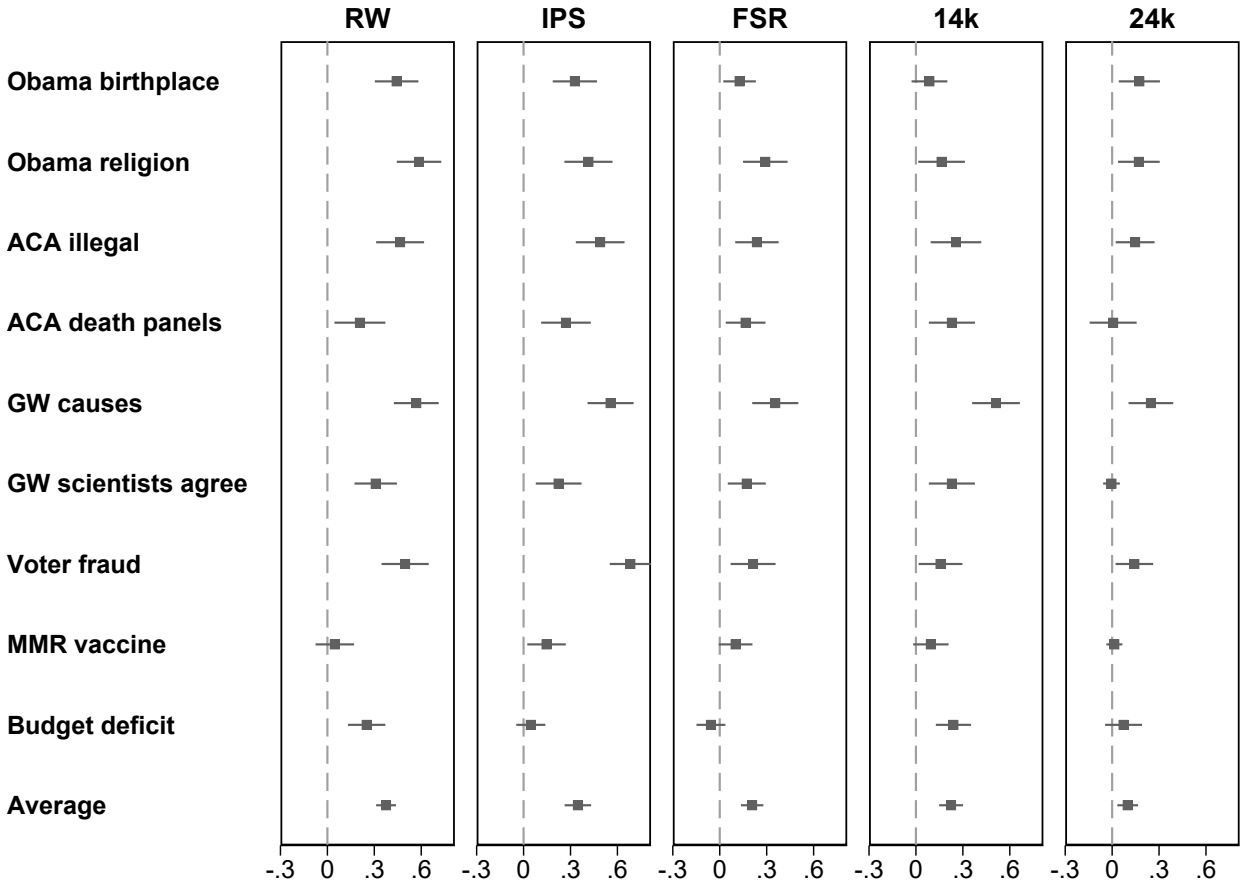
Partisan Knowledge Gaps (MTurk)

Data and Research Design

In 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 Afforcable 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, descreased, 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 randomlyassigned 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

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 $1\{party\text{-}congenial\ response\}_i = \alpha + \beta Rep_i + \varepsilon_i$ for each of items and each of the five arms. Horizontal bars are 95% confidence intervals constructed from robust standard errors.

asking anyone and to mark don't know when they don't know. (Again, see Appendix SI 2 for the specific wording.)

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

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

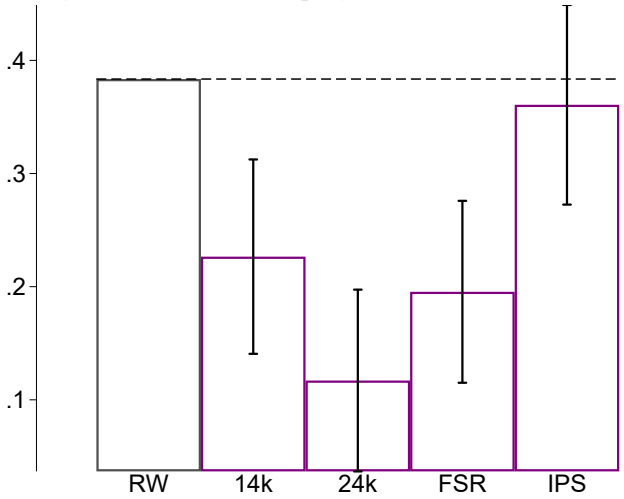
We formalize the above observation as follows. We regress the dependent variable, an indicator of whether the response is party-congenial, on the interaction of partisanship and the treatment arm:

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

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

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.

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 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

Table 1: Partisan Knowledge Gaps: MTurk

	(1)	(2)	(3)	(4)	(5)	(6)
Republican=1	0.256***		0.375***	0.258***		0.374***
	(0.016)		(0.030)	(0.016)		(0.029)
14k		−0.090***	−0.023		−0.093***	−0.026
		(0.025)	(0.022)		(0.025)	(0.021)
24k		−0.165***	−0.064***		−0.166***	−0.066***
		(0.022)	(0.018)		(0.022)	(0.017)
FSR		−0.074**	−0.000		−0.075**	−0.004
		(0.025)	(0.022)		(0.024)	(0.021)
IPS		−0.010	−0.000		−0.014	−0.005
		(0.028)	(0.022)		(0.028)	(0.021)
Republican=1 × 14k			−0.156***			−0.157***
			(0.044)			(0.044)
Republican=1 × 24k			−0.265***			−0.266***
			(0.042)			(0.041)
Republican=1 × FSR			−0.196***			−0.186***
			(0.042)			(0.041)
Republican=1 × IPS			−0.024			−0.021
			(0.046)			(0.045)
Constant	0.165***	0.314***	0.182***	−0.008	1.794+	0.483
	(0.006)	(0.020)	(0.017)	(0.946)	(1.083)	(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.

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

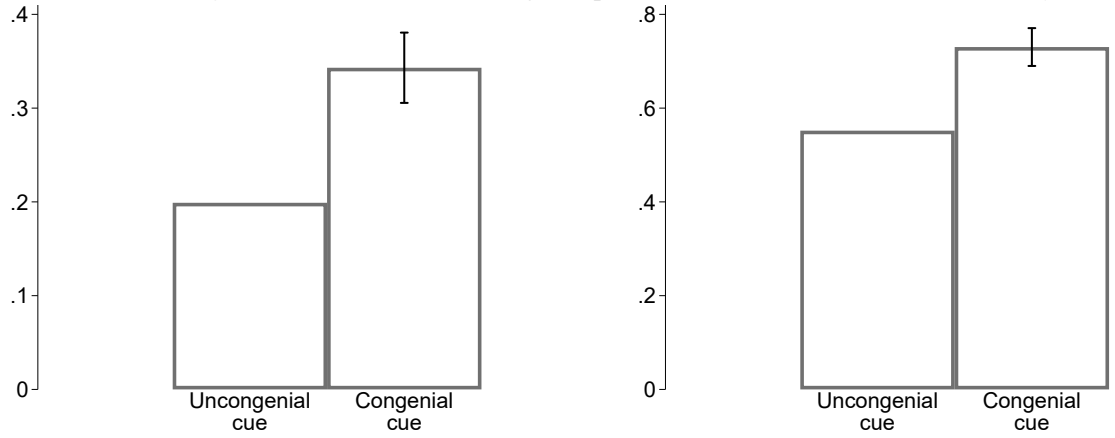
The aim of the study is to present experimental evidence about effect of partisan cues in the question stem on responses by partisans. For the purpose of the study, we examine closed-ended items asking about policy-relevant facts or objective performance, particularly those items stirring affective consistency,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

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



(a) Unemployment **(b)** Budget deficit

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.

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.

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***	0.111***	0.112***	0.178***	0.182***	0.190***
	(0.019)	(0.025)	(0.026)	(0.021)	(0.030)	(0.029)
Republican		0.067**	0.071**		0.232***	0.162***
		(0.025)	(0.027)		(0.030)	(0.031)
Congenial cue × Republican		0.069+	0.071+		−0.009	−0.009
		(0.038)	(0.039)		(0.040)	(0.039)
Constant	0.199***	0.168***	3.170+	0.552***	0.443***	7.056***
	(0.012)	(0.016)	(1.874)	(0.015)	(0.021)	(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.

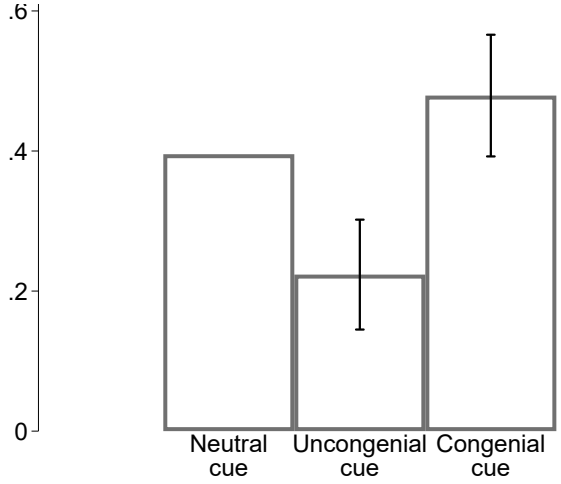
Using the YouGov survey responses, we estimate

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

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 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

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.

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 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 ($p < 0.001$). 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 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

[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^{+}	0.088	0.072
	(0.044)	(0.061)	(0.066)
Uncongenial cue	-0.172^{***}	-0.134^{**}	-0.164^{**}
	(0.040)	(0.050)	(0.058)
Republican		0.273^{***}	0.203^{**}
		(0.058)	(0.074)
Congenial cue x Republican		0.009	0.030
		(0.085)	(0.091)
Uncongenial cue x Republican		−0.065	−0.042
		(0.075)	(0.084)
Constant	0.395^{***}	0.236^{***}	0.056
	(0.030)	(0.041)	(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 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^{***}	0.171^{**}	-0.077^{*}	-0.081^{*}
	(0.051)	(0.056)	(0.036)	(0.038)
Uncongenial cue	-0.298^{***}	-0.228^{***}	-0.063	-0.077
	(0.042)	(0.048)	(0.042)	(0.050)
Congenial w/ guessing cue	0.091^{+}	0.042	-0.074^{*}	-0.066^{+}
	(0.052)	(0.057)	(0.036)	(0.038)
Uncongenial w/ guessing cue	-0.290^{***}	-0.234^{***}	-0.038	-0.051
	(0.040)	(0.047)	(0.041)	(0.043)
Constant	0.381^{***}	-0.223	0.187^{***}	0.884^{***}
	(0.031)	(0.177)	(0.025)	(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.

References

Abelson, Robert P. 1959. "Modes of Resolution of Belief Dilemmas." *Journal of Conflict Resolution* 3(4):343–352.

Abrajano, Marisa. 2015. "Reexamining the "racial gap" in political knowledge." *The Journal of Politics* 77(1):44–54.

Achen, Christopher H. and Larry M. Bartels. 2016. *Democracy for Realists: Why Elections Do Not Produce Responsive Government*. Princeton: Princeton University Press.

American National Election Studies. N.d. "American National Election Studies." Available at http://electionstudies.org/.

Barabas, Jason, Jennifer Jerit, William Pollock and Carlisle Rainey. 2014. "The question (s) of political knowledge." *American Political Science Review* 108(4):840–855.

Bartels, Larry M. 2002. "Beyond the Running Tally: Partisan Bias in Political Perceptions." *Political Behavior* 24(2):1061–1078.

Berinsky, Adam J. 2017. "Telling the Truth About Believing the Lies? Evidence for the Limited Prevalence of Expressive Survey Responding." *Journal of Politics* 80(1):211–224.

Bisgaard, Martin and Rune Slothuus. 2018. "Partisan Elites as Culprits? How Party Cues Shape Partisan Perceptual Gaps." *American Journal of Political Science* 62(2):456–469.

Bullock, John G., Alan S. Gerber, Seth J. Hill and Gregory A. Huber. 2015. "Partisan Bias in Factual Beliefs About Politics." *Quarterly Journal of Political Science* 10:519–578.

Bullock, John G. and Gabriel Lenz. 2019. "Partisan Bias in Surveys." *Annual Review of Political Science* 22:325–342.

Campbell, Angus, Philip E. Converse, Warren E. Miller and Donald E. Stokes. 1960. *The American Voter*. New York: Wiley.

Dolan, Kathleen. 2011. "Do women and men know different things? Measuring gender differences in political knowledge." *The Journal of Politics* 73(1):97–107.

Festinger, Leon. 1962. *A Theory of Cognitive Dissonance*. Palo Alto: Stanford University Press.

Flaxman, Seth, Sharad Goel and Justin M. Rao. 2016. "Filter Bubbles, Echo Chambers, and Online News Consumption." *Public Opinion Quarterly* 80(S1):298–320.

Garz, Marcel, Gaurav Sood, Daniel F. Stone and Justin Wallace. 2018. "What Drives Demand for Media Slant?" Working paper.

Gentzkow, Matthew and Jesse M. Shapiro. 2011. "Ideological Segregation Online and Offline." *Quarterly Journal of Economics* 126(4):1799–1839.

Gerber, Alan and Donald Green. 1999. "Misperceptions About Perceptual Bias." *Annual Review of Political Science* 2:189–210.

Guess, Andrew M. 2020. "(Almost) Everything in Moderation: New Evidence on Americans' Online Media Diets." *American Journal of Political Science* forthcoming.

Hill, Seth J. 2017. "Learning Together Slowly: Bayesian Learning about Political Facts." *Journal of Politics* 79(4):1403–1418.

Jerit, Jennifer and Jason Barabas. 2012. "Partisan Perceptual Bias and the Information Environment." *The Journal of Politics* 74(3):672–684.

Kernell, Georgia and Samuel Kernell. 2019. "Monitoring the Economy." *Journal of Elections, Public Opinion, and Parties* forthcoming.

Khanna, Kabir and Gaurav Sood. 2018. "Motivated Responding in Studies of Factual Learning." *Political Behavior* 40(1):79–101.

Laloggia, John. 2018. "Republicans and Democrats Agree: They Can't Agree on Basic Facts." *Pew Research FactTank* August 23.

Lodge, Milton and Charles S. Taber. 2013. *The Rationalizing Voter*. New York: Cambridge University Press.

Pasek, Josh, Gaurav Sood and Jon A Krosnick. 2015. "Misinformed about the affordable care act? Leveraging certainty to assess the prevalence of misperceptions." *Journal of Communication* 65(4):660–673.

Peterson, Erik and Shanto Iyengar. 2020. "Partisan Gaps in Political Information and Information-Seeking Behavior: Motivated Reasoning or Cheerleading?" *American Journal of Political Science* forthcoming.

Prior, Markus. 2007. *Post-Broadcast Democracy: How Media Choice Increases Inequality in Political Involvement and Polarizes Elections*. New York: Cambridge University Press.

Prior, Markus, Gaurav Sood and Kabir Khanna. 2015. "You Cannot Be Serious: The Impact of Accuracy Incentives on Partisan Bias in Reports of Economic Perceptions." *Quarterly Journal of Political Science* 10(4):489–518.

Schaffner, Brian F. and Samantha Luks. 2018. "Misinformation or Expressive Responding? What an Inauguration Crowd Can Tell Us About the Source of Political Misinformation in Surveys." *Public Opinion Quarterly* 82(1):135–147.

Stroud, Natalie Jomini. 2008*a*. "Media Use and Political Predispositions: Revisiting the Concept of Selective Exposure." *Political Behavior* 30(3):341–366.

Stroud, Natalie Jomini. 2008*b*. "Media use and political predispositions: Revisiting the concept of selective exposure." *Political Behavior* 30(3):341–366.

Stroud, Natalie Jomini. 2010. "Polarization and Partisan Selective Exposure." *Journal of Communication* 60:556–576.

Taber, Charles S and Milton Lodge. 2006. "Motivated Skepticism in the Evaluation of Political Beliefs." *American Journal of Political Science* 50(3):755–769.

Zaller, John R. 1992. *The Nature and Origins of Mass Opinion*. Cambridge: Cambridge University Press.

SUPPORTING INFORMATION

SI 1 Supporting figures

Figure SI 1.1: Balance test: MTurk

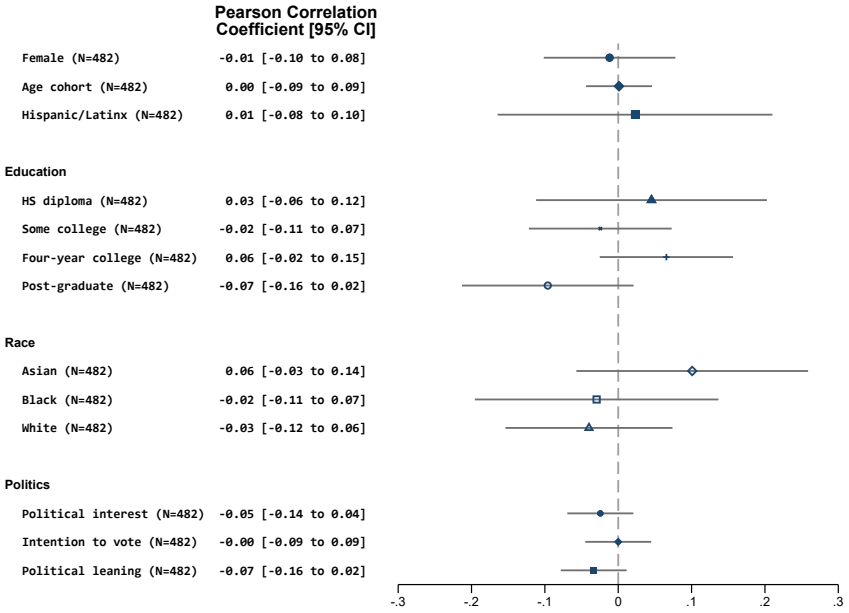
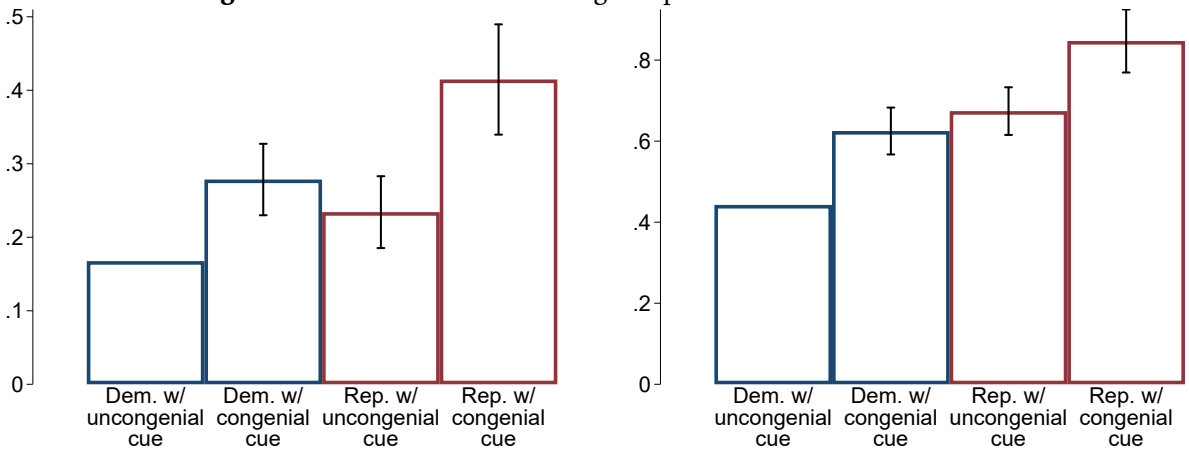


Figure shows the results from a balance test for the Amazon Mechanical Turk sample. Self-reported characteristics of respondents are compared between the respondents assigned to the 24k arm and the RW arm as described in Data and Research Design. Rows are self-reported characteristics. Second column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



(a) Unemployment **(b)** Budget deficit

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:

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

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 is 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 is 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

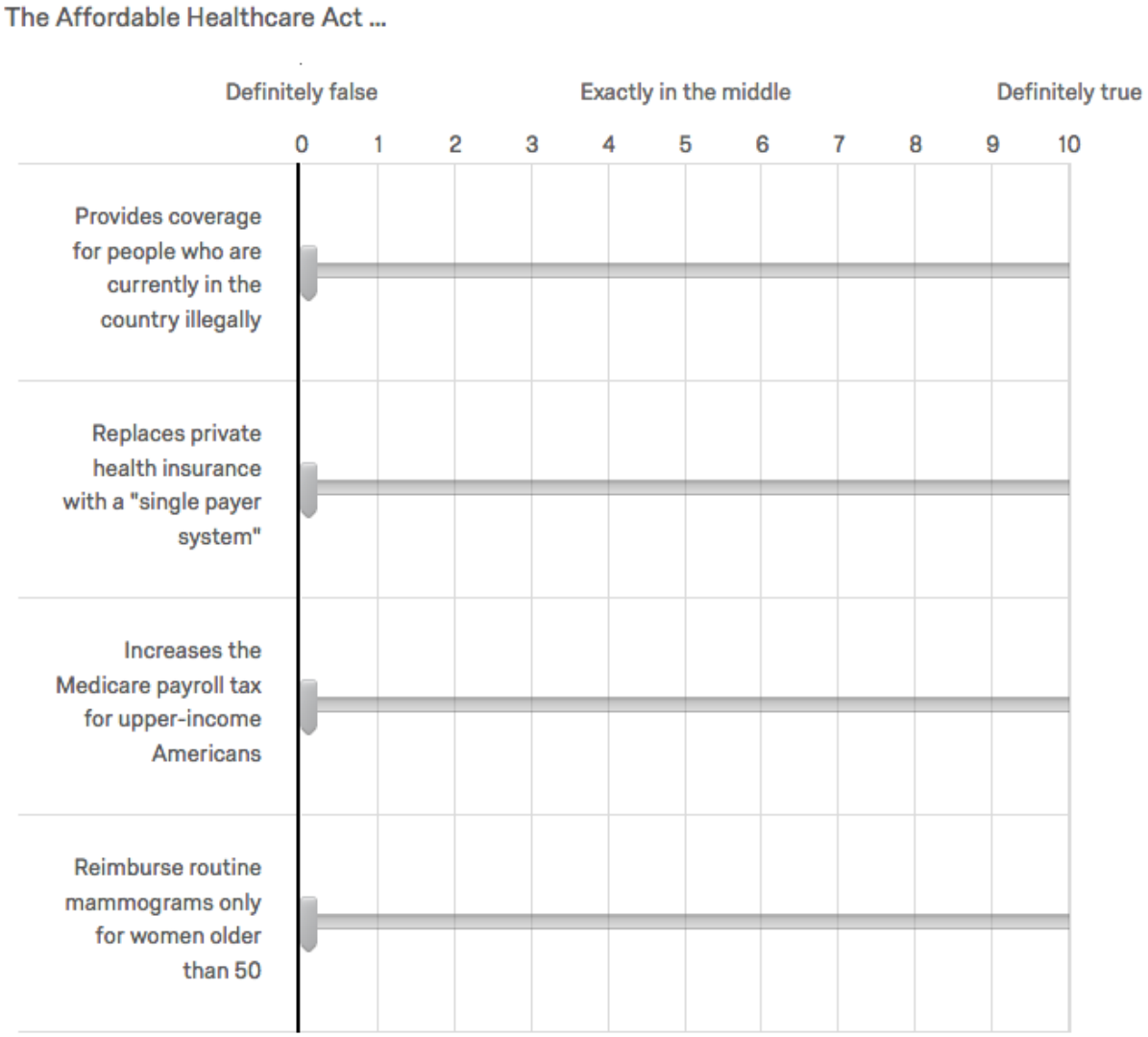


Figure SI 3.2: Greenhouse Gases Scale Question

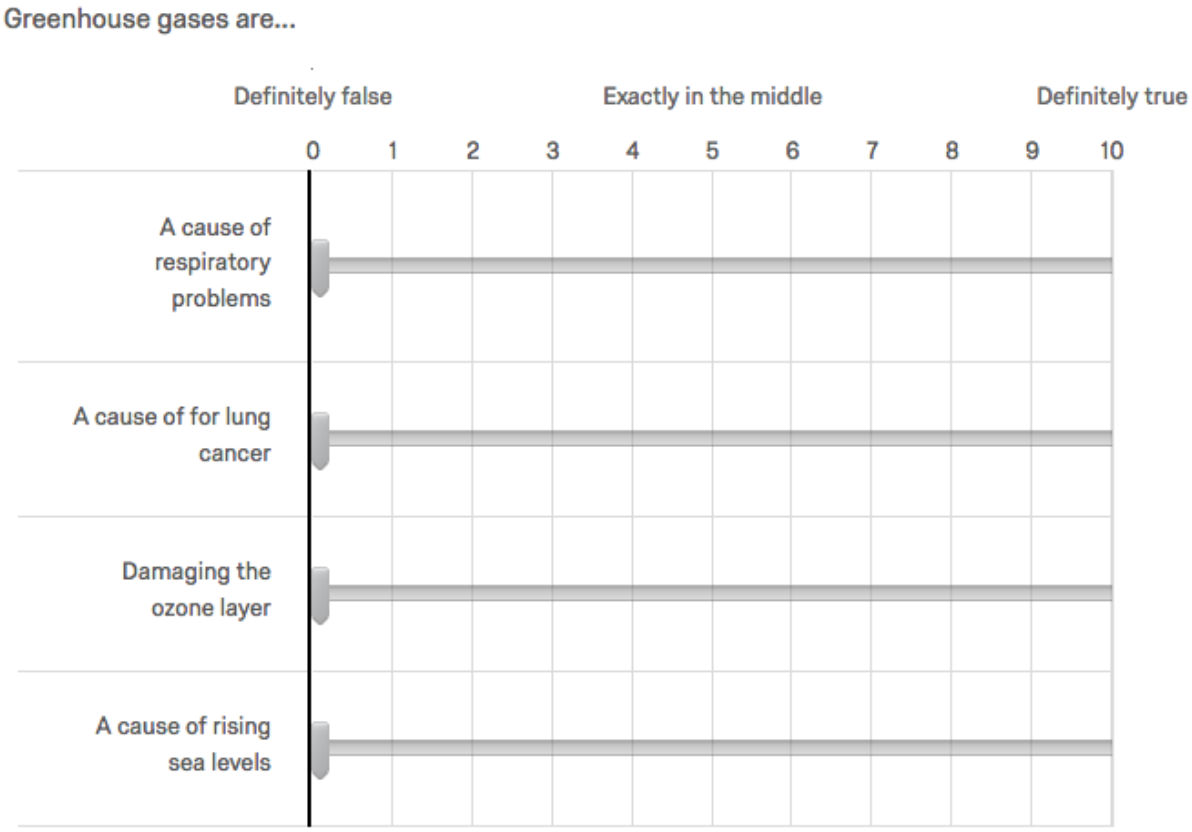


Figure SI 3.3: Affordable Care Act 2 Scale Question

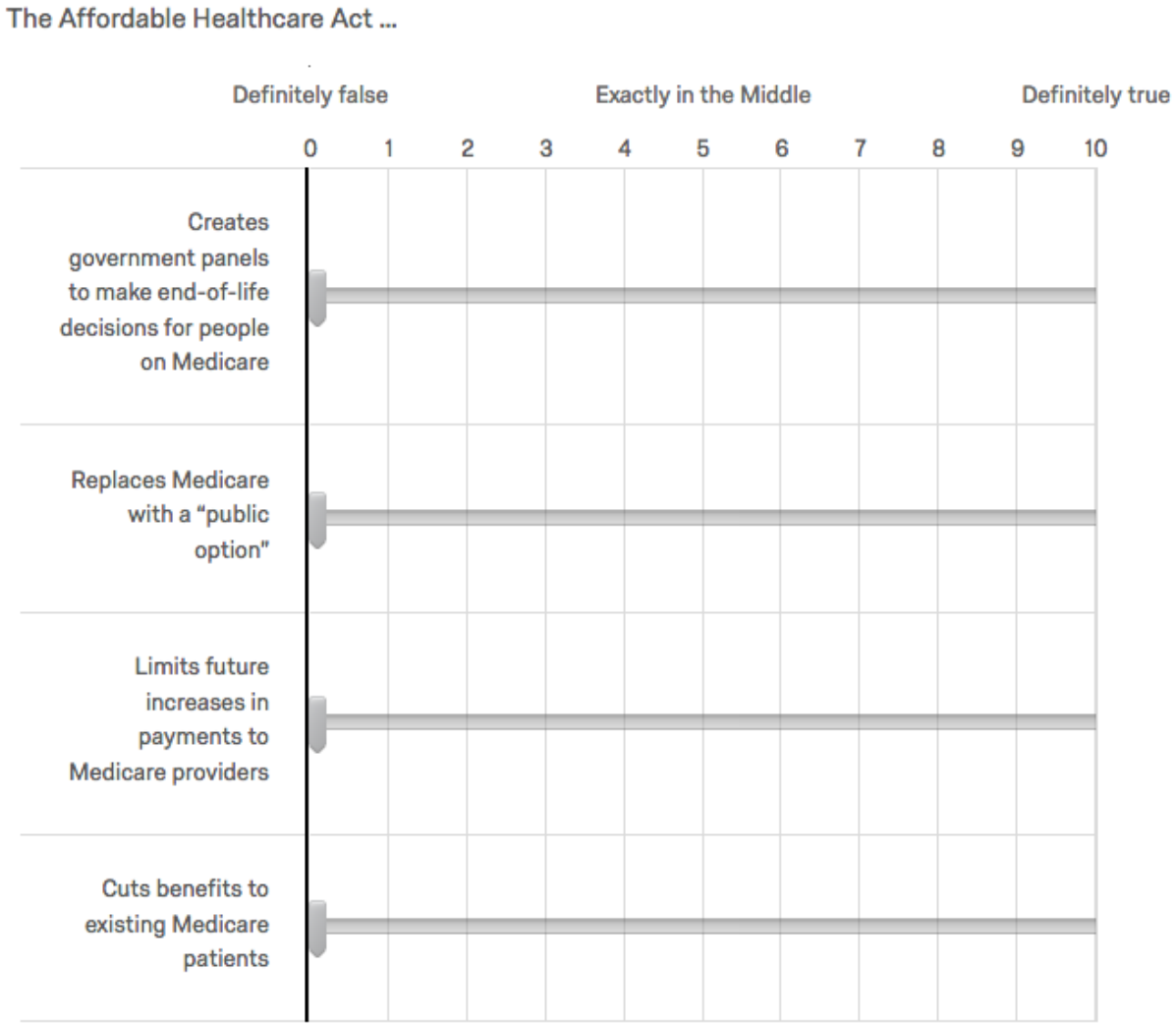
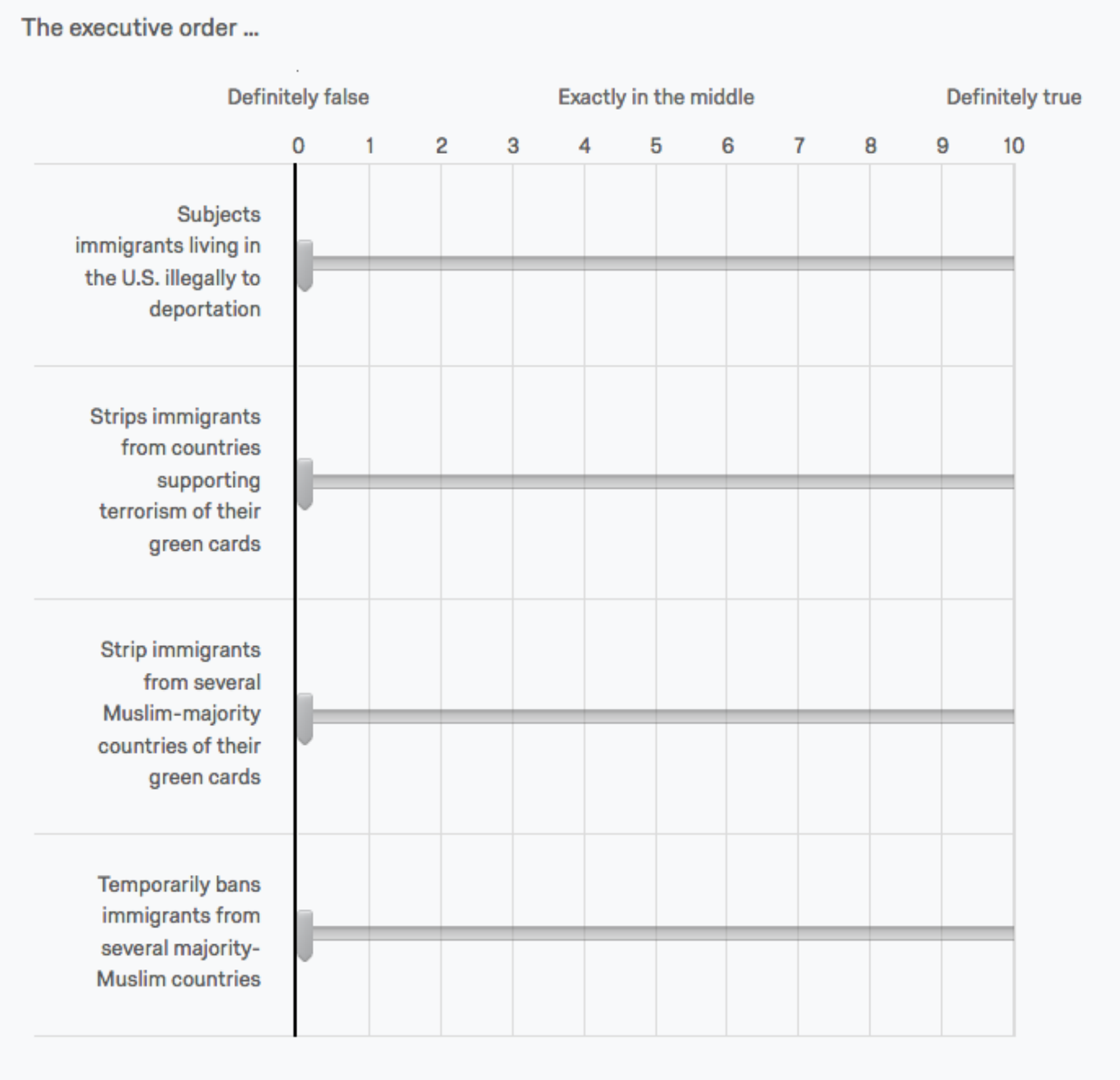


Figure SI 3.4: Executive Order Scale Question



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