Do Citizens Know What They Don't Know? A Study of Americans' Self-Assessment of Political Knowledge

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While a vast literature focuses on citizens' level of accuracy in recalling key political facts, few studies have examined whether citizens' level of confidence in their own political knowledge reflects their objective stock of information. In this article, we argue that low levels of political knowledge are more worrisome if they are paired with high confidence levels, because overconfident citizens lack the incentive to seek additional information and are less likely to accept corrections. Using an experiment embedded in a survey of 700 American citizens, we investigated 1) whether self-assessments of political knowledge change after completing a political knowledge battery and 2) who is likely to adjust. In a first experimental condition, we asked respondents to assess their own political knowledge before answering a battery of political knowledge questions. In a second experimental condition, respondents assessed their knowledge afterwards. Our results indicate that moderately knowledgeable Americans adjust their self-assessments downward when they have to demonstrate their political knowledge. Crucially, however, low knowledge citizens remain fairly confident even after doing poorly on the political knowledge battery, which lends support to the idea that they are unaware of the fact they know very little about politics.

Introduction

In the 1920s, Walter Lippmann (1922, 10) argued that the democratic citizen had been "saddled with an impossible task and that he is asked to practice an unattainable ideal". As scholars of public opinion began conducting large-scale, nationally representative surveys of the American population, evidence mounted that seemed to support Lippmann's diagnosis: most citizens unambiguously failed to be the well-informed voice of reason that democratic theory expected them to be (Delli-Carpini and Keeter 1996). In short, people know very little about both the political institutions that govern their country and the major political actors that shape public policy.

The implications of widespread civic incompetence have been the focus of an expansive research effort by political scientists. While we have learned a lot from this literature, the vast majority of published studies focus on a single dimension of political knowledge: citizens' level of accuracy in recalling key political facts (Lee and Matsuo 2018). However, there is a second dimension that has received far less attention: citizens' level of confidence in their own political knowledge and the congruence between their confidence and their objective stock of information. In this article, we argue that self-assessments of political knowledge have important implications for political behavior and democratic representation. Specifically, we make the case that low knowledge levels are much more worrying if they are paired with high confidence levels. Citizens who hold incorrect

political beliefs with a high degree of certainty lack the incentive to seek additional information and they are less likely to accept corrections. After developing this argument, we empirically examine the rigidity of self-assessments of political knowledge. Using a survey of 700 American citizens fielded through Amazon Mechanical Turk (MTurk), we manipulate the placement of a 10-item knowledge battery. In a first experimental condition, we asked respondents to assess their own political knowledge *before* answering the battery. In a second experimental condition, respondents assessed their knowledge *after* the completion of the 10-item battery. This design allows us to examine whether American citizens are able to engage in self-reflective behavior and adjust perceptions of their own knowledge accordingly. We find evidence that moderately knowledgeable Americans adjust their self-assessments downward when they realize that they do not know as much as they had thought. Crucially, however, low knowledge citizens remain fairly confident even after doing poorly on the political knowledge battery, which lends support to the idea that they are unaware of their own ignorance. We conclude that efforts to improve civic competence in modern democracies must grapple with this perverse reality.

Political knowledge in the literature

The publication of the seminal early works in political behavior cast light on the need to have more realistic expectations about citizens' knowledge of politics (Berelson, Lazarsfeld, and McPhee 1954; Campbell et al. 1960; Lazarsfeld, Berelson, and Gaudet 1948). As aptly summarized by Converse (2006, 331), a consensus soon built around the proposition that "where political information is concerned, the mean level is very low, but the variance is very high." In the ensuing decades, as nationally representative surveys of the American population quizzed people on a variety of political knowledge items (see Barabas et al. 2014), scholars of public opinion thoroughly examined the implications of citizen ignorance for democratic responsiveness. The result has been what (Kuklinski and Peyton 2007, 46) called a "schizophrenic" literature.

On the one hand, a more pessimistic account depicts citizens as utterly incapable of holding governments accountable: voters are myopic, swayed by irrelevant concerns, and unable to assign responsibility to the relevant political actors, which generates distorted incentives for officeholders (Achen and Bartels 2016; Cutler 2004; Healy and Lenz 2014; Hobolt, Tilley, and Banducci 2013; Powell and Whitten 1993). Indeed, experimental and observational evidence suggests that policy preferences would be markedly different if citizens were fully informed (Althaus 1998; Bartels 1996; Duch, Palmer, and Anderson 2000; Fowler and Margolis 2014; Gilens 2001). On the other hand, a more optimistic account holds that citizens can use a variety of informational shortcuts to make the "correct" decision, defined as "the same choice that would have been made under conditions of full information" (Lau and Redlawsk 1997, 586). Using their affect toward relevant political actors (Brady and Sniderman 1985), the positions of well-known interest groups (Lupia 1994), and numerous other heuristics, voters can achieve low-information rationality (Popkin 1991; Sniderman, Brody, and Tetlock 1993).

This early literature provided valuable insights and generated important debates that bridged political behavior and democratic theory, but it ultimately proved incomplete.

As alluded to in the introduction, political knowledge has a second dimension that has received much less scholarly attention: citizens' level of confidence in their own political knowledge.

Misinformation

Despite a vast research agenda in behavioral psychology and economics that examines the role of overconfidence in decision-making (see Svenson 1981; Taylor and Brown 1988; Weinstein 1980), students of public opinion had until recently paid scant attention to the political relevance of confidence-in-knowledge. Building on the robust literature reviewed above, Kuklinski et al. (2000) provided perhaps the earliest detailed treatment of the matter. They drew an important distinction between individuals who are merely *un*informed and individuals who are *mis*informed. What distinguished the latter is that they held factually incorrect beliefs with a high degree of certainty, a combination which "will serve as a barrier to informing the American citizenry" (Kuklinski et al. 2000, 795). Kuklinski et al. (2000, 799) concluded that "although factual inaccuracy is troublesome, it is the 'I know I'm right' syndrome that poses the potentially formidable problem."

In the last 20 years, political behavior research has reoriented in line with this interpretation. Scholars have examined the prevalence of misperceptions in different policy domains, including healthcare (Pasek, Sood, and Krosnick 2015; Nyhan 2010), foreign affairs (Kull, Ramsay, and Lewis 2003; Nyhan and Reifler 2010), and gun control legislation (Aronow and Miller 2016). A clear concern emerges from this literature: factually incorrect information about politics is just as worrying – and perhaps even more dangerous – than mere ignorance. This distinction between uninformed and misinformed citizens is important insofar as different deviations from the normative ideal of a democratic citizen call for different solutions. The solution to an uninformed citizenry is the provision of relevant information – with the usual caveats about "rational ignorance" (Downs 1957). The solution to a misinformed public is different and, as of yet, unclear.

Indeed, a major source of concern that emerges from misinformation research is that the provision of factual information may fail to change individuals' beliefs – or even aggravate misperceptions. This so-called "backfire effect," first brought to light by Nyhan and Reifler (2010), has attracted much attention from scholars and pundits alike. In processing political information, individuals possess both an "accuracy motive" and a "directional motive"; when the two motives are in conflict, the latter may override the former (Lodge and Taber 2013).

The role of self-assessments

Analyzing Americans' attitudes on welfare, Kuklinski et al. (2000) noted that people tend to overrate how accurate and reliable their beliefs truly are, and they diagnosed "widespread mistaken beliefs" among the electorate. More recent studies have shown that misinformation is rampant in many policy domains, including healthcare (Pasek, Sood, and Krosnick 2015) and foreign affairs (Kull, Ramsay, and Lewis 2003; Nyhan and Reifler 2010). Given the normative implications of overconfident voters, we ask the fol-

lowing question: can citizens' assessments of their own political knowledge be modified? In other words, can misinformed voters – those who confidently hold inaccurate beliefs – become merely uninformed? Our aim is certainly not to imply that uninformed voters represent an ideal to strive for. However, given the lack of incentives that most citizens have to acquire costly political information (Downs 1957), we believe it is preferable for uninformed citizens to employ a more prudent epistemological approach. As Arthur Lupia (2016, 2) mentions:

> When it comes to political information, there are two groups of people. One group understands that they are almost completely ignorant of almost every detail of almost every law and policy un-der which they live. The other group is delusional about how much they know. There is no third group.

We argue that overconfidence weakens two of the most important mechanisms through which people learn about the political world: the acquisition of information and the reliance on opinion leaders and peers as informational shortcuts. We will go through each of these arguments in turn.

First, people who view themselves as well informed about politics lack an incentive to seek additional information. An expansive literature in psychology has demonstrated the role that emotions play in information processing (Lerner et al. 2015). The founding proposition of most studies is that human reasoning is based on two systems that work in parallel (also known as the dual-process model). It holds that there is a "fast" and a "slow" system. The first encompasses unconscious and automatic cognitive processes, whereas the second encompasses conscious, introspective, and deliberative cognitive processes (Evans 2008). Emotions are crucial in determining on which of the two systems citizens' reasoning will rely (Brader and Marcus 2013). Summarizing this framework, Marcus et al. (2000, 56) suggested that humans are generally creatures of political habits, but that a "surveillance system" constantly scans the environment to identify threatening or unfamiliar situations. The main function of this system is not to trigger a defensive reaction, but rather "to stop ongoing action, shift attention to the novel stimuli, uncouple reliance on habits, and foster greater motivation for learning". Put differently, people use emotions in order to process information efficiently (Marcus and MacKuen 1993). Marcus et al. (2000) concluded that citizens actively think about politics, but only when their emotions tell them to.

The role of anxiety has attracted particular attention. Psychological studies suggest that people process information more systematically when their emotional state is negative (Tiedens and Linton 2011). This finding implies that negatively valanced emotions may promote information acquisition and discourage the sorts of habitual motivated reasoning that we touched upon earlier. Experimental studies in political science have lent credence to this suggestion: anxious citizens seek more information and are more open to countervailing messages that contradict their predispositions (Valentino et al. 2008; Albertson and Gadarian 2015; MacKuen et al. 2010). In the same vein, uncertainty serves a crucial function: it indicates a lack of information about the world. It is essentially a signal

that further learning is necessary, lest the negative affect of uncertainty continue.[1] Conversely, confidence in one's political knowledge does not cause the surveillance system to sound the proverbial alarm, which promotes reliance on political habits and signals that further information is not necessary. In sum, qualifying a citizen's level of knowledge without examining their self-assessed knowledge tells us little about their potential for improvement—regardless of their level of knowledge, uncertain citizens are more likely to seek additional information.

Second, people who are highly confident in their political knowledge are less likely to accept corrections. Though there are few empirical studies that directly address this point, scholars interested in misinformation have repeatedly used this argument (Jerit and Zhao 2020). For instance, Kuklinski et al. (2000, 799) have pointed out that:

> [A]lthough the factual inaccuracy is troublesome, it is the "I know I'm right" syndrome that poses the potentially formidable problem. It implies not only that most people will resist correcting their factual beliefs, but also that the very people who most need to correct them will be the least likely to do so.

More recently, (Anson 2020) used a survey experiment to examine the link between political overconfidence and the effectiveness of corrective information. He found that misperceptions decline when survey participants are presented with randomly assigned claims that a majority of other participants disagree with a factual claim. Therefore, it seems that most people yield to the majority opinion, which serves as an informational shortcut. Crucially, however, overconfident respondents do not follow this behavioral pattern because they believe that their "superior information-gathering skills" have already led them to gather "the most important, vital, and accurate information about political topics" (Anson 2020, 8). The result is that they dismiss peer endorsements and continue to hold a factually incorrect belief.

In short, overconfident individuals are less deferential to their peers and to elites, whose signals play a key role in the theory of heuristics use in political science. To be sure, we do not intend to suggest that correcting false beliefs is an easy exercise in the absence of overconfidence. Clearly, that is not the case: many studies have demonstrated that providing corrective information is a path strewn with pitfalls. People often possess a directional motive when processing political information, which may come into conflict – and even override – accuracy motives (Lodge and Taber 2013). As a result, attempts to correct misinformation often fail and, even when they do succeed, misinformation continues to influence behavior (Nyhan and Reifler 2010; Nyhan et al. 2019; Thorson 2016). But, we argue, overconfidence makes corrections notably harder by diminishing the efficacy of the mechanisms through which corrective information comes to be accepted as authoritative.

[1] Though it is important to note that there are personality differences—some people are more comfortable with uncertainty (see Hodson and Sorrentino 1999).

Differences between citizens

Who, then, is most likely to be overconfident and can these people be nudged toward greater humility? We expect our experimental manipulation to induce heterogeneous effects. We explore three main possibilities: a gender divide, a divide based on political knowledge, and a divide based on political ideology.

First, while the standard political knowledge scales have been criticized on the grounds of gender bias, scholars generally agree that women tend to be less knowledgeable about the basic facts and institutions of American politics (Delli-Carpini and Keeter 1996; Dolan 2011; Stolle and Gidengil 2010). Even though we expect women to do somewhat worse on the political knowledge battery, they should also be more pessimistic in their self-assessments, perhaps even more than their performance relative to men would warrant. This expectation is well grounded in the literature on women and politics, which finds substantial gender differences in political confidence (Gidengil, Giles, and Thomas 2008; Pruysers and Blais 2014; Thomas 2012; Wolak 2020).

> **Hypothesis 1**: On average, female respondents will rate their political knowledge more pessimistically than male respondents.

What is less clear, however, is whether women are more or less likely to adjust their self-assessments. On the one hand, a lack of confidence may make women overly cautious even when they have adequately performed a task. On the other hand, women's self-assessments may be generally accurate, such that asking them to undertake the political knowledge quiz would simply confirm the reasonableness of their self-assessments. In this case, men would be overconfident, and women would be neither overconfident nor underconfident. Consequently, we expect relatively little movement in their self-assessments compared to men as a result of our experimental manipulation.

> **Hypothesis 2**: Asking female respondents to answer a battery of political knowledge questions before assessing their own political knowledge will not have a substantial effect on their ratings.

Second, research in psychology has thoroughly examined when people can and cannot assess their level of competence. The so-called Dunning Kruger effect theorizes that low-ability individuals often overestimate their capabilities because "their incompetence robs them of the metacognitive ability to realize" the erroneous choices they have made. As a result, they "are left with the mistaken impression that they are doing just fine" (Kruger and Dunning 1999, 1121). This leads to a perverse situation: those who would most need to learn are convinced that they already know a lot. Evidence of the Dunning-Kruger effect has been found in attitudes toward genetically modified foods and vaccines, among others (Fernbach et al. 2019; Motta, Callaghan, and Sylvester 2018). There has been less research on the consequences of Dunning-Kruger in political behavior, but Anson (Anson 2018) has found the familiar pattern of overinflated confidence among the least knowledgeable and has shown that priming partisanship exacerbates it. There-

fore, we expect a curvilinear relationship between respondents' performances and respondents' self-assessments. Individuals with low levels of political knowledge should be more likely to overrate their knowledge and to fail to adjust when they will face their own deficiencies when responding to the 10-item battery. Conversely, respondents with high levels of political knowledge should be less likely to adjust because they will have performed well on the political knowledge battery and should have the meta-cognitive skills to recognize it.

> **Hypothesis 3**: Respondents with moderate political knowledge will be more likely than others to adjust their rating after taking a political knowledge battery.

Third, the results of some recent studies suggest that there is a link between political ideology and overconfidence. For instance, Ortoleva and Snowberg (2015) have noted that since 1980, American citizens who hold conservative beliefs tend to be more overconfident than others. The authors measured overconfidence by asking respondents how confident they were in four guesses about factual quantities they previously made. Choma et al. (2019), for their part, have found that people who identify as socially and economically conservative are more likely than others to believe that they are mathematically competent, even though they perform generally worse than people who identify as liberal on numeracy tests. Several factors could explain why political conservatism is associated with overconfidence. Jost et al.'s (2003) metanalysis of the literature notably found that conservatives tend to be intolerant of ambiguity, which leads them to seek certainty and to reach conclusions prematurely. In light of this literature, we expect respondents who identify as conservative to have a greater propensity to overestimate their political knowledge and to be less likely to adjust their self-assessment according to their performance on the political knowledge battery.

> **Hypothesis 4**: Respondents who identify as conservative will be more likely than respondents who identify as liberal or as moderate to overrate their objective level of political knowledge.
> **Hypothesis 5**: Respondents who identify as conservative will be less likely than respondents who identify as liberal or as moderate to adjust their rating after taking a political knowledge battery.

Research design

To test our hypotheses, we conducted an online survey of 700 U.S. citizens in July 2020. We recruited respondents on Mechanical Turk (MTurk), Amazon's crowdsourcing platform. MTurk is an increasingly popular alternative to student samples, especially because data can be collected from a more diverse population (Sheehan and Pittman, 2016). It is also an attractive alternative to costly data collection methods. Comparing samples across different types of surveys, Berinsky et al. (2012) find that MTurk respondents' sociodemographic characteristics and political attitudes are similar to those of well-reputed face-

Table 1: Sample descriptives

Variable	Full sample	Attentive sample	Census	Difference
Gender				
Female	39.8	40.1	50.8	-10.7
Male	59.9	59.5	49.2	10.3
Age group				
65+	3.5	2.8	21.1	-18.3
55-64	6.9	7.4	16.7	-9.3
45-54	16.9	15.7	16.2	-0.5
35-44	22.8	21.9	16.4	5.5
25-34	44.5	47.0	18.0	29.0
18-24	5.5	5.3	11.6	-6.3
Education				
High school or less	4.5	4.1	38.8	-34.7
Some college completed	11.4	13.3	27.8	-14.5
Undergraduate degree	61.2	61.3	21.3	40.0
Graduate degree	22.9	21.4	12.1	9.3

to-face surveys, such as the American National Election Panel Study (ANEPS). However, they note that MTurk respondents are generally younger and slightly less educated than ANEPS respondents. Their results also indicate that MTurk respondents are somewhat more interested in politics and knowledgeable than ANEPS respondents. Even though Berinsky et al. (2012) point out that the difference in political knowledge between the two samples is not substantial, we need to recognize the possibility that the average respondent in our survey may be somewhat better informed than the average American citizen. Recent research shows that treatment effects estimated using MTurk samples tend to travel quite well to more traditional samples (Coppock 2019).

As Table 1 shows, our sample is younger and considerably more educated than the American population. The median respondent of our survey is 34 years old (vs. 38 years old at the national level). 84.1% of respondents hold an undergraduate degree or higher (vs. 33.2% at the national level). Our sample is also quite imbalanced with regards to gender: 39.8% of respondents are female, and 60.2% are male (vs. 50.8% and 49.2% at the national level).[2]

One of the main concerns about using crowdsourcing platforms to recruit respondents is misrepresentation. Indeed, evidence shows that MTurk users sometimes claim false identities or behaviors in order to gain access to a larger number of surveys (Chandler and Paolacci 2017; Sharpe Wessling, Huber, and Netzer 2017). This problem occurs mainly when respondents have incentives to deceitfully portray themselves, such as when they need specific qualifications to participate in a study. Otherwise, Wessling et al. (2017) report that respondents are typically honest. Since all American citizens over 18

[2]National data retrieved from the 2019 U.S. Census

years old were eligible to complete our survey, misrepresentation should not threaten the validity of our results. We took a further precaution by clearly telling respondents that they would receive financial compensation, regardless of the answers they provided. We remunerated respondents $0.85 for completion of the survey. As the estimated response time for our questionnaire is around seven minutes, this amount is slightly higher than the federal minimum wage in the U.S.[3] To make sure that all respondents are human beings, we used reCAPTCHA v2, a human verification service provided by Google. MTurk users who failed to click the "I'm not a robot" checkbox did not have access to our survey. We further improved the quality of our data by discarding responses from users whose IP address was not located in the U.S. (n = 11). Since we conducted our survey during the COVID-19 pandemic, the likelihood that these users are American citizens who were traveling abroad is extremely remote.

In our survey, we measured respondents' political knowledge, which we understand as "the range of factual information about politics that is stored in long-term memory" (Delli-Carpini and Keeter 1996, 10). To do so, we used a set of ten questions (see Appendix A). The first five questions were adapted from Delli Carpini and Keeter's five-item knowledge index (1993; 1996). Although this battery was designed in the mid-1990s, many recent studies still rely on it to measure how much citizens know about politics (Barabas et al. 2014). The main advantage of the five-item knowledge index is parsimony; with very few items, it is possible to differentiate poorly informed respondents from well-informed respondents. More importantly, it gives a reliable and valid measurement of people's political knowledge (Delli Carpini and Keeter 1993). Since MTurk users generally perform well on Delli Carpini and Keeter's five-item knowledge index (see Ahler and Goggin 2017), notably because they tend to complete several political science surveys on a weekly basis, we also included five less frequently asked questions. Four of these questions (Questions 6 to 9) were adapted from Ahler and Goggin's battery (Ahler and Goggin 2017), and one (Question 10) was our own. Each item was close ended in order to avoid the subjectivity involved in coding respondents' answers to open ended political knowledge (Lupia 2016). Appendix A shows how well our sample answered each question.

As our main objective was to measure whether American citizens are aware of how much they know about politics, we gave respondents explicit "Don't Know" (DK) options. DKs matter, because they indicate that respondents are uninformed – or unsure – rather than misinformed. By allowing respondents to answer that they do not know, we also reduced the probability that they make random guesses that could potentially decrease the reliability of our knowledge index (Delli Carpini and Keeter 1993). Contrary to earlier findings (Mondak 1999; Mondak and Davis 2001), Luskin and Bullock (2011) demonstrate that DKs do not conceal a great deal of political knowledge when questions are close ended. Thus, we deem that our results are reasonably representative of the actual level of knowledge of our sample.

[3] Ahler et al. (2021) argue that researchers should avoid unfairly low or unusually high financial compensations to improve the overall quality of their data. Whereas low wages generally lead to less effort by respondents, high wages give MTurk users an incentive to attempt to complete surveys more than once. A financial compensation of $0.85 is comparable to what other researchers offer MTurk users for answering short social science surveys (Sheehan and Pittman, 2016).

Even though cheating rates are generally low on MTurk, notably because respondents have a financial incentive to quickly complete surveys (Clifford and Jerit 2016), we could not exclude the possibility that some respondents would verify their answers online. We dealt with cheating in three ways. First, we told respondents not to look up answers online before we asked the political knowledge items. Second, we asked respondents to report whether they looked up answers online at the end of our survey. Finally, we used timers to set aside respondents who answered the political knowledge items abnormally slowly. Although this is probably insufficient to ensure that all our observations are valid, Clifford and Jerit (2016) note that commitment mechanisms are the best method to cope with cheating in online surveys. In our sample, 387 respondents (55.8%) admitted they used the Internet to look up information during the survey. Since this proportion is particularly (and surprisingly) high, we decided to compute models using all respondents and to use other robustness checks to ensure the validity of our results.[4]

As recommended by Berinsky et al. (2014), we assessed respondents' attentiveness using multiple screener items (two, given the short length of our survey).[5] The first screener item was placed before the political knowledge battery, whereas the second screener item was placed right after it. Our sample was quite attentive during the survey: 610 respondents (87.9%) passed the first attention check, 560 respondents (80.7%) passed the second attention check, and 543 respondents (78.2%) passed both attention checks. The results presented below only consider the fully attentive respondents (n = 543).

We randomly assigned respondents to two different experimental conditions. In the first condition (n = 347), respondents had to assess their own political knowledge on a scale from 0 (knows very little) to 10 (knows very much) before answering the battery of political knowledge questions. In the second condition (n = 347), respondents had to assess their own political knowledge after answering the battery of political knowledge questions.

Contrary to some of the prior literature (Flynn, Nyhan, and Reifler 2017; Graham 2020; Kuklinski and Quirk 2000; Pasek, Sood, and Krosnick 2015), we asked respondents about their general level of confidence in their political knowledge rather than their level of confidence about each particular survey item. The intent was to measure citizens' broad epistemological orientation. Our two experimental conditions enable us to determine whether citizens have a more accurate perception of their true level of political knowledge when they have had to demonstrate their knowledge. Since we did not tell respondents how well they perform on the political knowledge battery, we can measure whether they were aware that they knew/did not know the correct answers to the questions that were asked. That is, we are able to distinguish misinformed respondents from uninformed respondents.

[4]Taking a retroactive look at our survey, we wonder if the ambiguous formulation of our question did not overinflate the number of respondents who reported that they have looked for answers online. Indeed, the question asked respondents whether they have looked for information online during the survey but did not mention the political knowledge battery specifically. It is therefore possible that some respondents looked for information to fill other sections of our survey – to answer the liberal–conservative question for instance –, but not to complete the 10-item knowledge battery.

[5]The first screener item asked respondents to select "red" and "green" instead of answering their favorite color. The second screener item asked respondents to skip the question instead of answering it.

Results

Descriptive results

As Figure 1 shows, respondents' performance on our battery of political knowledge questions follows a slightly right-skewed distribution. The median respondent answered 4 out of 10 questions correctly, while the sample mean was 4.53 correct answers. Only 27 respondents out of 543 (5%) answered all ten questions correctly. The five original items we included in our survey did not substantially affect the overall performance of our sample. In fact, the mean number of correct answers is similar between this set of questions (2.38) and the Delli Carpini and Keeter's five-item knowledge index (2.60).[6] We therefore deem that the last five items of our political knowledge battery were neither too difficult nor too easy.

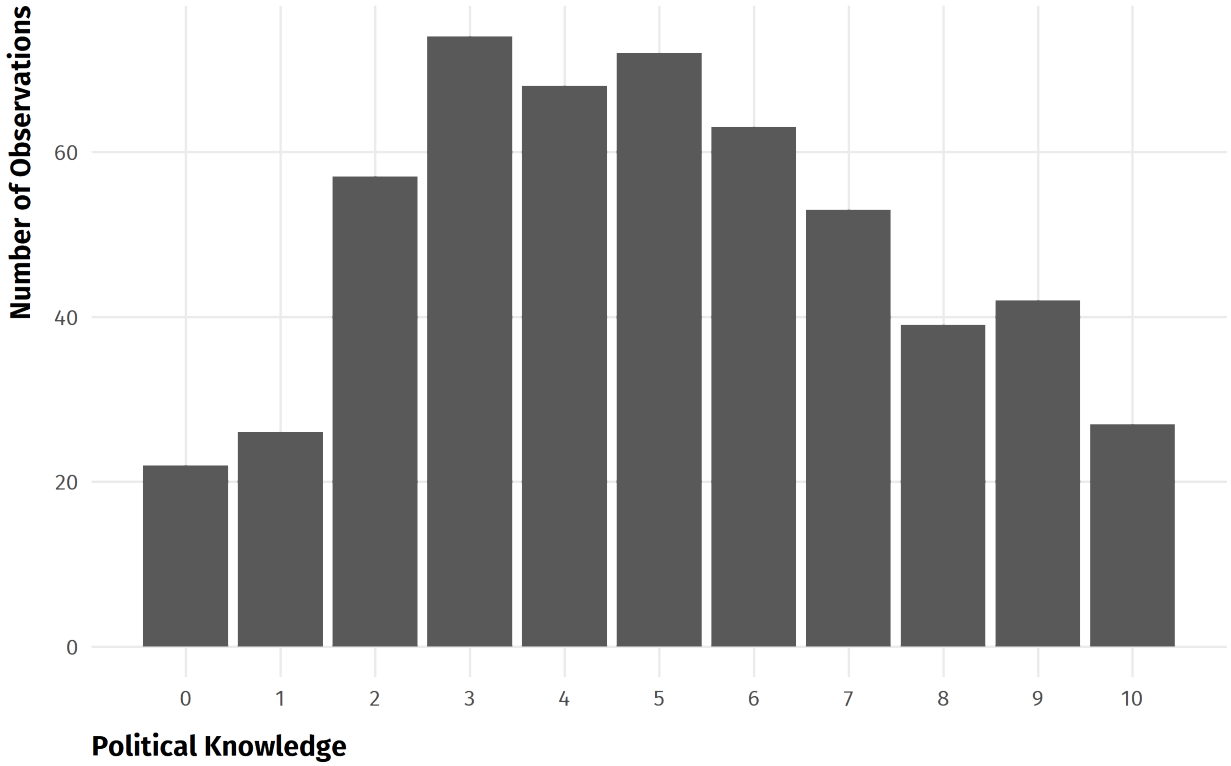

Figure 1: Distribution of scores on the political knowledge battery

Importantly, the mean number of correct answers was similar between the two experimental conditions. Respondents who assessed their political knowledge before answering the 10-item battery provided 5.05 correct answers, on average. Respondents who assessed their political knowledge provided 4.91 correct answers, on average.[7] This suggests that our experimental manipulation did not cause respondents to behave differently during their completion of the political knowledge battery. This is an important point

[6] The p-value from a two-tailed t-test is 0.01.

[7] A t-test for the difference-in-means yields a p-value of 0.54.

since the validity of our study would have been weakened if the knowledge assessment had caused respondents to put more effort into this section of our survey.

On average, male respondents (5.12 correct answers) performed somewhat better than their female counterparts (average of 4.72 correct answers), but this difference is not statistically significant (p = 0.25). While this result is not at odds with an important body of literature which states that women tend to be less politically knowledgeable than men (Jerit and Barabas 2017; Delli Carpini and Keeter 2000; Verba, Burns, and Schlozman 1997), it is possible that the items we used in our survey adversely affected the performance of female respondents. In fact, a growing number of studies have demonstrated that how researchers measure political knowledge matters: the gender gap shrinks – or even disappears – when respondents are asked questions about government programs and services (Stolle and Gidengil 2010) or issues pertaining to women (Dolan 2011). Yet, our battery of political knowledge questions strictly measured respondents' ability to recall key facts about the U.S. government, institutions, and political process. The fact that we gave respondents explicit DK options might also explain why male respondents performed slightly better than female respondents on our political knowledge battery. Mondak et al. (**mondak_knowledge_2004?**) have found that men are more reluctant than women to answer that they do not know and more likely to guess in the face of uncertainty. Part of the gender gap in knowledge may reflect this differential propensity to guess. Indeed, we find that female respondents (1.87 DK) are more inclined to answer "don't know" than male respondents (1.51 DK), though the difference is not statistically significant (p = 0.10).

MTurk users who answered our survey are generally confident in their level of political knowledge. Very few respondents (13%) rate their political knowledge under 5 on a scale from 0 (knows very little) to 10 (knows very much), even though about 33% of respondents scored very poorly (3 correct answers or fewer) on the political knowledge battery. As Figure 2 indicates, the median respondent rates their political knowledge at 7, and the average rating for our sample is 6.65. As we expected (Hypothesis 1), there is a statistically significant (p = 0.002) difference between men and women's levels of confidence. Whereas male respondents' average rating is 6.86, female respondents' average rating is 6.31. This is consistent with the current literature, which points out that women tend to be less confident in their ability to understand politics than men (Gidengil, Giles, and Thomas 2008; Pruysers and Blais 2014; Thomas 2012; Wolak 2020).

Treatment effects

We now turn to the main question of interest: whether respondents' epistemic confidence is affected by the placement of the knowledge battery. Comparing respondents in the two experimental conditions, we observe that participants who assessed their knowledge before the 10-item battery provided a mean rating of 6.83, while participants who assessed their knowledge after the 10-item battery provided a mean rating of 6.47. This difference of 0.35 is statistically significant (p = 0.04). Given that the standard deviation of self-assessments for the sample is 1.98, this difference of 0.35 on the full 0-10 scale represents a 0.18 change in standardized units. We interpret this effect to be of moderate magnitude: while respondents clearly appear more modest when they have just completed a 10-item

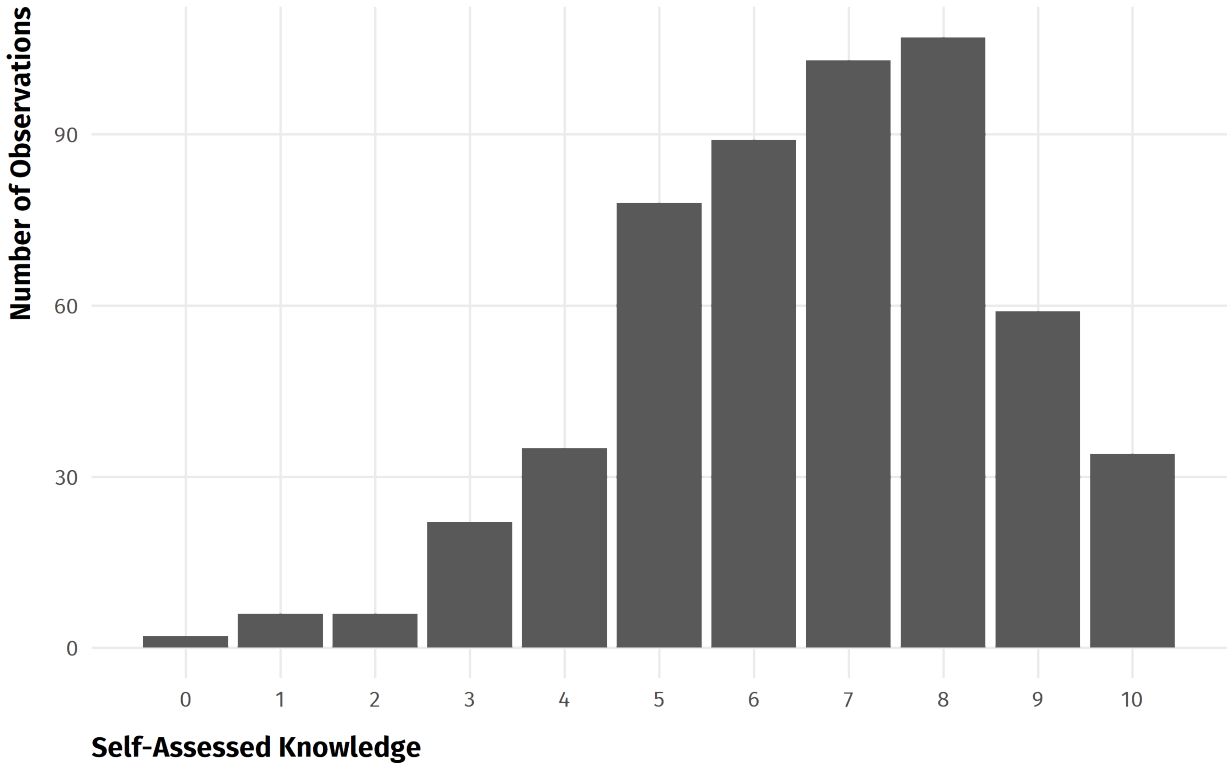

Figure 2: Distribution of self-assessments

knowledge battery, the broad picture of overconfident citizens remains.

However, as Figure 3 shows, these unconditional treatment effects mask some important heterogeneity. Women are essentially unaffected by the experimental manipulation: their mean self-evaluation is 6.32 in one condition and 6.31 in the other ($p = 0.99$). By contrast, men who assessed their knowledge before the 10-item battery provided a mean rating of 7.18, while those who assessed their knowledge after the 10-item battery provided a mean rating of 6.57. This difference of 0.61 is statistically significant ($p < 0.01$). It represents an effect size of 0.32 standardized units.[8]

As a result of this rather large treatment effect among men, the gender gap in self-assessment almost disappears. Indeed, in the first experimental condition – in which respondents rated their knowledge before the 10-item battery – men's mean self-evaluation is 0.87 point higher than women's ($p < 0.001$). In the second experimental condition – in which respondents rated their knowledge after the 10-item battery – the gender gap in self-assessment shrinks to 0.26 and no longer reaches conventional levels of statistical significance ($p = 0.32$).

Both men and women are more likely to answer DK when they were asked to rate their knowledge before the 10-item battery, but the differences are not statistically significant.[9]

[8]Computed using the standard deviation in self-assessments among men.

[9]The average number of DKs for female respondents was 1.90 when they assessed their political knowledge before answering the 10-item battery and 1.84 when they assessed their political knowledge after ($p = 0.86$). The average number of DKs for male respondents was 1.59 when they assessed their political knowl-

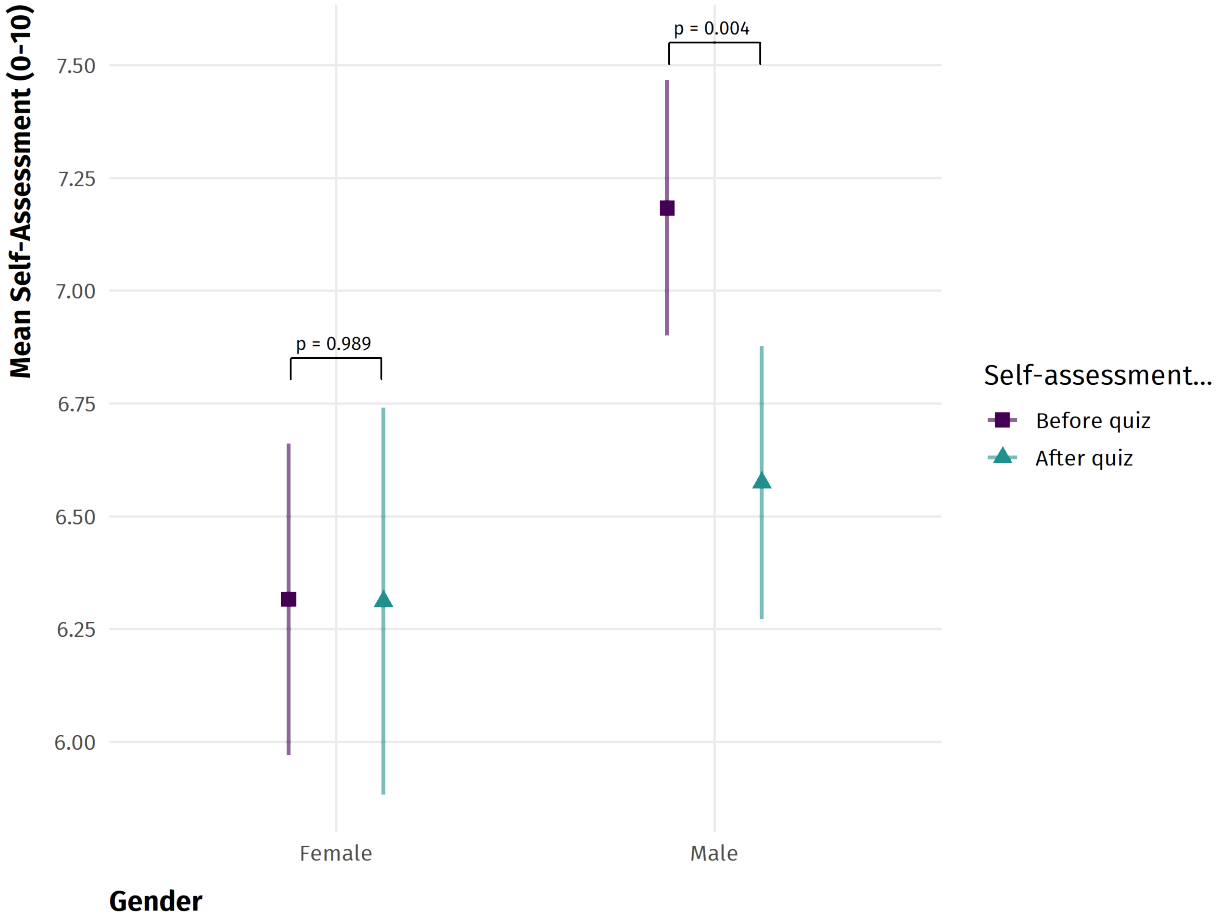

Figure 3: Self-assessments by gender and condition

Dunning-Kruger analyses

We now turn to the set of results that investigate the Dunning-Kruger hypothesis (H3). Figure 4 presents mean self-assessments by experimental condition and score on the political knowledge battery. In this form, our data is stretched thin: we present 22 different estimates using just 543 observations. Nonetheless, a noticeable pattern emerges: the largest gaps between experimental conditions appear to among moderately knowledgeable respondents (scores of 5 to 7).

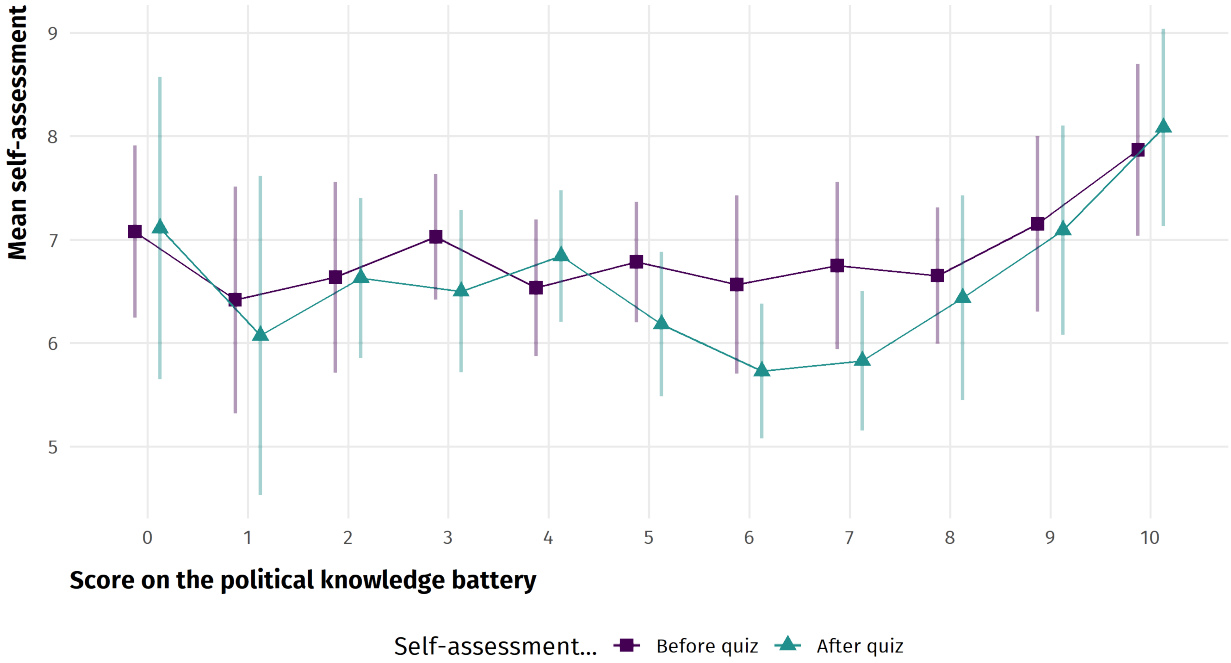

Figure 4: Self-assessments by political knowledge (full 0-10 scale) and condition

In order to arrive at more precise estimates, we divided respondents into 4 quartiles of political knowledge: 0 to 2 correct answers; 3 to 4 correct answers; 5 to 6 correct answers; and 7 to 10 correct answers. Figure 5 shows mean self-assessments by experimental condition for each of these quartiles. Across the board, respondents who were asked to rate their political knowledge after the 10-item battery are less confident. However, for only the 3rd quartile does this treatment effect reach conventional levels of statistical significance. Among respondents who scored 5 or 6 on the knowledge battery, self-assessments are lower by 0.73 point when the knowledge battery was completed first ($p = 0.03$). Among the least knowledgeable (the first two quartiles), the placement of the knowledge battery does not seem to exert any effect: the substantive differences between experimental conditions are small (differences of 0.13 for both quartiles) and they do not reach conventional levels of statistical significance (respective p-values of 0.74 and 0.69). These findings are in line with the Dunning-Kruger expectations: since low-knowledge

edge before answering the 10-item battery and 1.44 when they assessed their political knowledge after ($p = 0.57$).

respondents are unaware of their own ignorance, they fail to realize their poor performance and their relatively high (and unwarranted) epistemic confidence is unperturbed. We find larger effects for the most knowledgeable participants: their self-evaluations are lower by 0.38 point when performed after the knowledge battery, but this effect is not statistically significant (p = 0.21).[10]

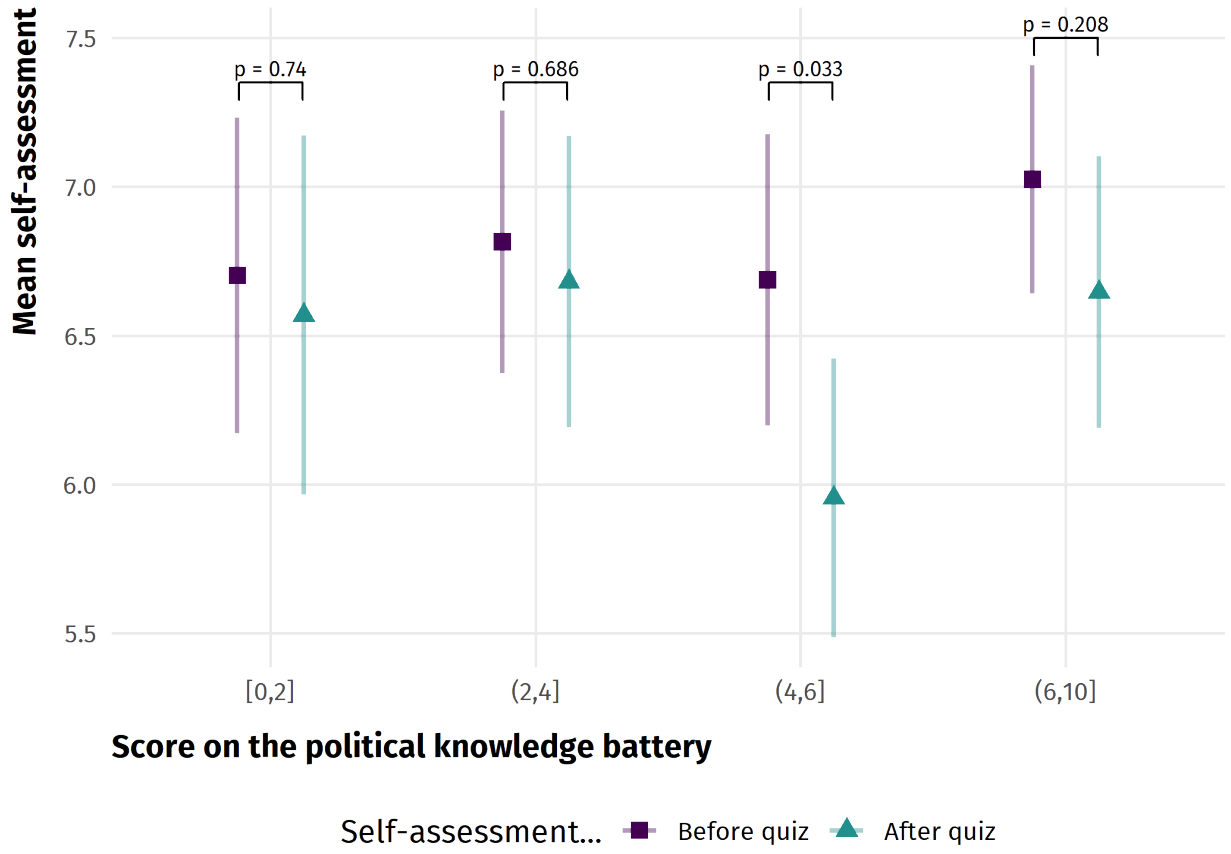

Figure 5: Self-assessments by political knowledge (quartiles) and condition

Given sample size limitations, we also fit a linear regression model of the following form:

$$Assessment_i = \beta_0 + \beta_1 Condition_i + \beta_2 Knowledge_i + \beta_3 Knowledge_i^2 + \beta_4 Condition_i * Knowledge_i + \beta_5 Condition_i * Knowledge_i^2 + \epsilon_i$$

The interaction term is required in order to allow the effect of the experimental manipulation to vary based on political knowledge; the square term is required in order to capture the curvilinear effect hypothesized by Kruger and Dunning (1999). Figure 6 shows the

[10]We also note that the range of performances on the knowledge battery represented in this last quartile is quite large, which may explain part of the negative treatment effect that we find. Respondents who scored 7 or 8 may indeed adjust their assessments downward as a result of the experimental manipulation, while we would not expect respondents who scored 10 to do so.

predicted self-assessment by experimental condition and political knowledge, along with 95% confidence intervals.

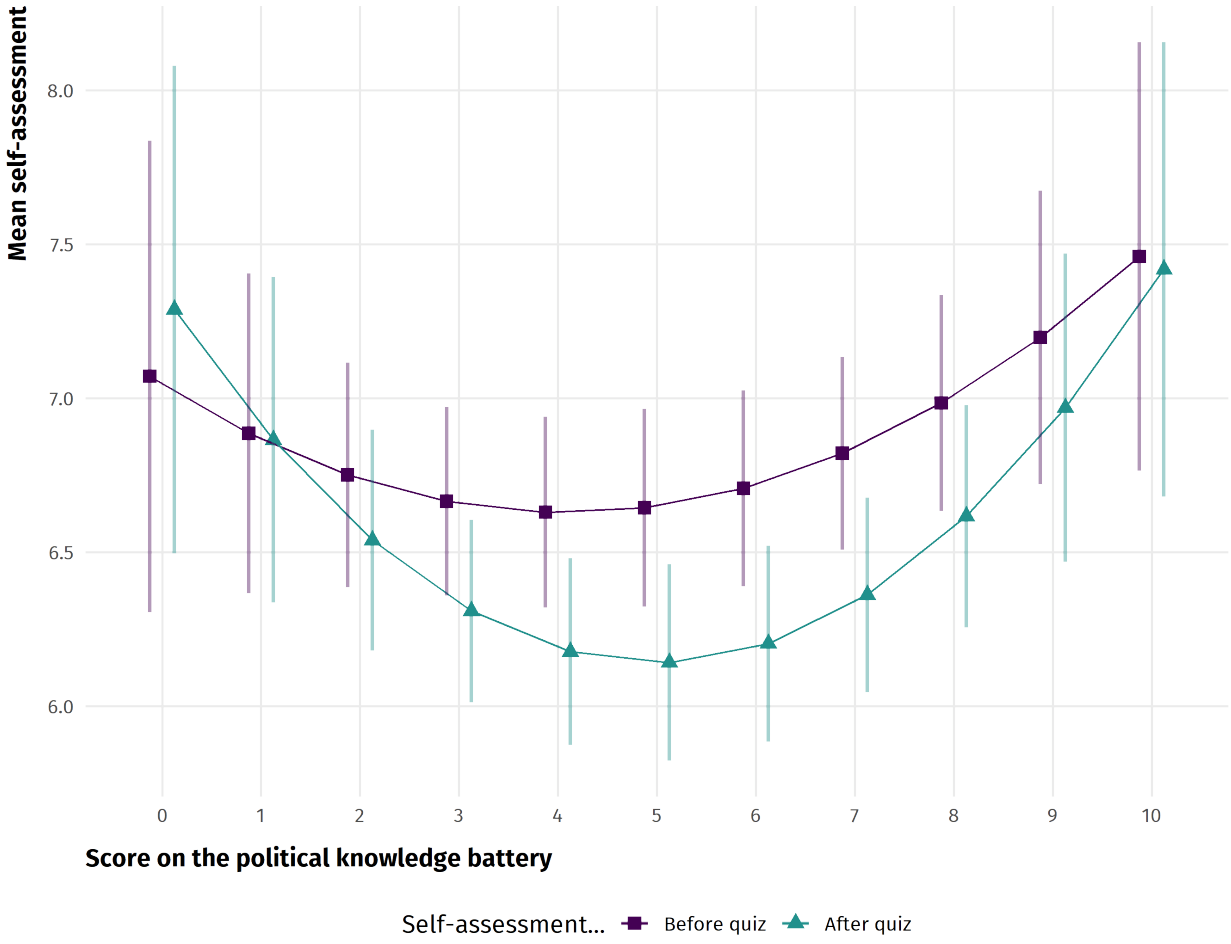

Figure 6: Self-assessments by condition and ideology

There are several points worth highlighting. First, we find evidence of the Dunning-Kruger phenomenon: the least confident respondents are those with moderate political knowledge. Second, it is again apparent that manipulating the placement of the self-assessment question causes differences in epistemic confidence only among the moderately knowledgeable.

Ideology analyses

Finally, we turn to the analysis by ideology. In the survey, respondents were asked to report their political ideology using a seven-point scale, where 1 means extremely liberal and 7 means extremely conservative. To simplify the presentation of the results, we classified respondents as liberals if they answered 1 or 2, as moderates if they answered 3, 4 or 5, and as conservatives if they answered 6 or 7. We first present the mean self-assessments by condition and ideology (see Figure 7).

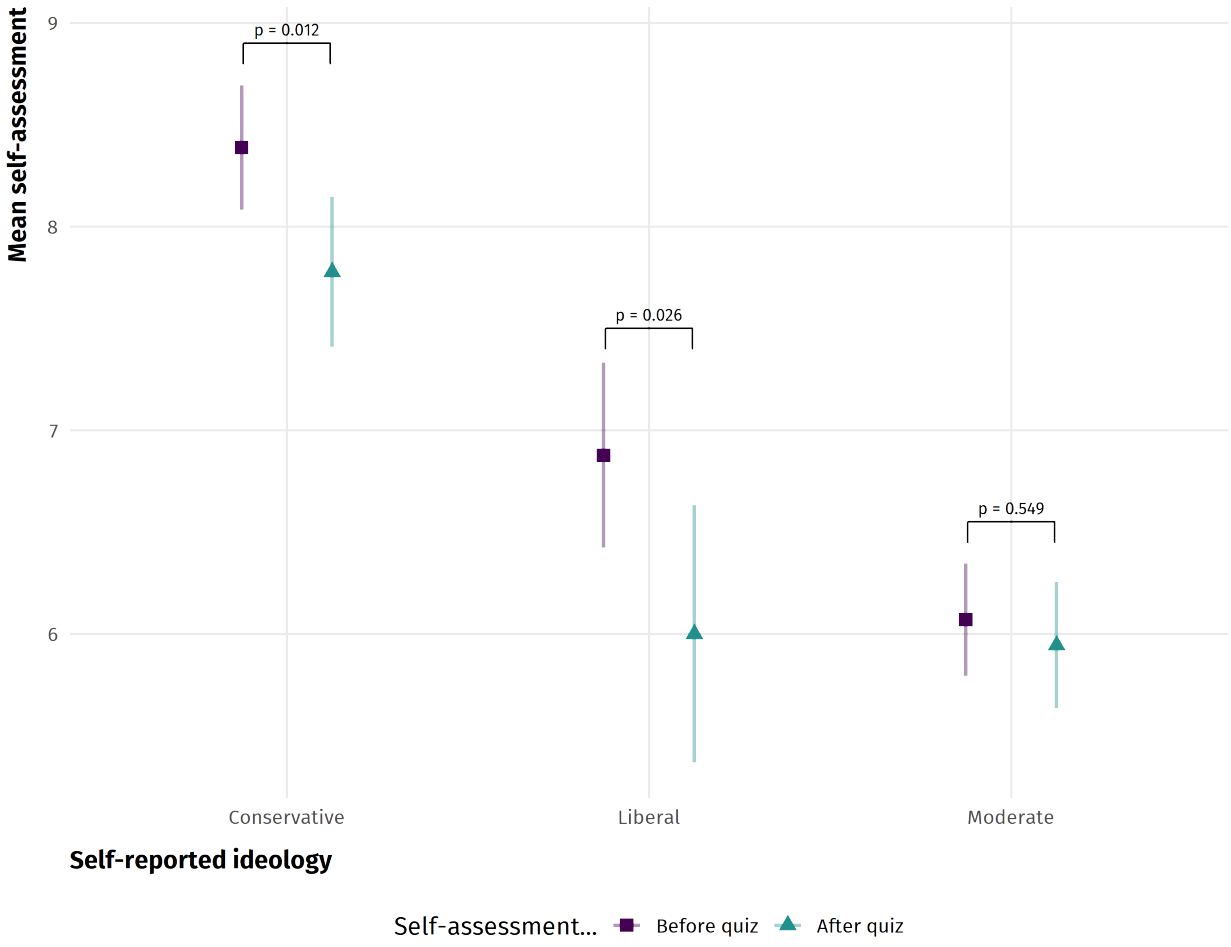

Figure 7: Self-assessments by condition and ideology

As we theorized, conservatives are by far the most confident in their political knowledge. Across both conditions, their mean self-assessment is 8.10, compared to 6.44 for liberals and 6.00 for moderates. This is especially striking given that conservative respondents (average of 4.09 correct answers) generally performed much worse on the 10-item battery than liberals (average of 6.82) and similarly to moderates (average of 4.09). Since measurement of political knowledge is fraught with difficulties, we are wary of using the labels "overconfident" and "underconfident". After all, it is possible that conservatives have reasonable self-assessments and that liberals are much too pessimistic about their own knowledge. However, whichever terminology one wishes to apply, it is interesting to note that the less knowledgeable conservatives are far more confident in their own political knowledge than the more knowledgeable liberals. This finding offers support for Hypothesis 4. We find that taking the 10-item battery before the self-assessment question reduces liberals' and conservatives' self-assessments by 0.83 and 0.29, respectively. The former difference in means is statistically significant ($p = 0.03$) but the latter is not ($p = 0.15$). While this partly supports Hypothesis 5, which states that conservatives should be less affected than other respondents, the expected effect does not hold for moderates, who see just a 0.11 reduction in their self-assessments as a result of the manipulation ($p = 0.53$).

We are also interested in the effect of the placement manipulation conditional on political knowledge. Using a similar approach to the one for gender differences, we used a linear regression model to generate predicted self-assessments. As a reminder, our dependent variable is respondents' self-assessments and our independent variables are their political ideology, their political knowledge score, and the square of that score. These three right-hand side terms are interacted to produce results by condition, political knowledge score, and three-category ideology (see Figure 6). We first note the peculiar shape of the line of best fit for conservatives. High-knowledge conservatives appear to be less confident than low-knowledge conservatives. Moreover, this latter group is the most confident of any group depicted in Figure 5. In fact, across both conditions, conservative respondents who scored 2 or less on the knowledge quiz are significantly ($p < 0.001$) more confident than liberals who scored 8 or more.[11]

[11] Means of 8.36 and 7.29, respectively.

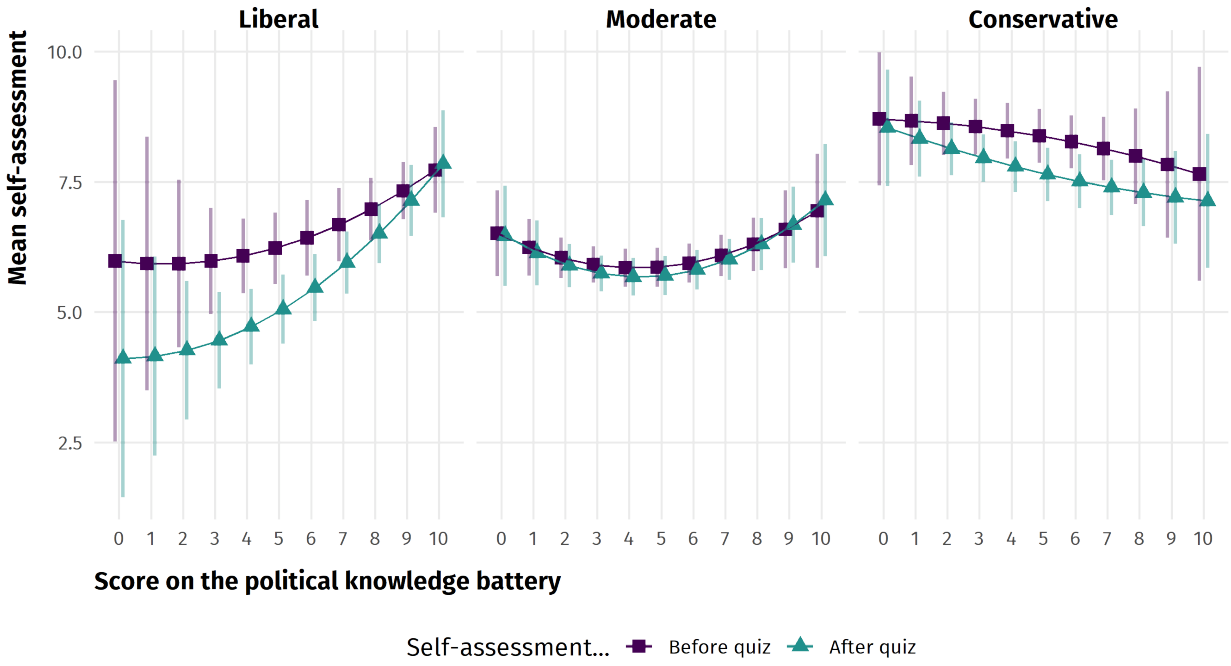

Figure 8: Self-assessments by condition, ideology, and knowledge

Conclusion

Psychologist Daniel Kahneman (2011, p. 255) wrote that unwarranted optimism may be "the most significant of cognitive biases." Despite the wealth of evidence regarding the behavioral consequences of overconfidence in other disciplines of the social sciences, political scientists have paid little attention to the ways in which citizens reason about their political knowledge and how their epistemic orientations affect their political decisions. We argued in this paper that overoptimistic assessments of political knowledge are a barrier to a more rational public: overconfident individuals lack the incentive to seek additional information and are less likely to accept corrections. While poorly informed, but self-aware citizens are a far cry from the ideals of democratic theory, they represent a marked improvement over low knowledge citizens who are highly confident. This study empirically tested people's propensity to temper their perceptions of their own political knowledge. We found that some particular groups appear able to recognize their deficiencies and to adjust according. In particular, moderately knowledgeable respondents and ideological liberals show a clear tendency to evaluate themselves less optimistically after they were asked to complete a political knowledge battery. However, across all groups that we examined in this paper, the least knowledgeable remain overconfident even after doing poorly on the knowledge battery. This highlights a perverse dilemma of democratic politics: those who most need to learn are persuaded that they already know a lot – even after completing a task that should have plainly shown their incompetence. How we resolve this dilemma is an open question that calls for additional research.

Appendix A

Table 2: Survey items

Question	Proportion
What party currently controls the House and Senate in the U.S. Congress?	
The Republicans control both	0.21
The Democrats control both	0.15
The Democrats control the Senate, the Republicans control the House	0.11
The Republicans control the Senate, the Democrats control the House	0.35
Don't know	0.18
Whose responsibility is it to determine if a law is constitutional or not?	
The House of Representatives	0.07
The Senate	0.07
The President	0.11
The Supreme Court	0.62
Don't know	0.14
How large of a congressional majority is necessary to override a presidential veto?	
50%	0.03
60%	0.19
67%	0.35
75%	0.19
Don't know	0.24
Who is the current Vice President of the United States?	
Mike Pompeo	0.03
Donald J. Trump	0.15
Mike Pence	0.74
Kayleigh McEnany	0.02
Don't know	0.05
Which of these statements best describes the American political parties?	
The Democratic Party is liberal, and the Republican Party is conservative	0.00
The Democratic Party is conservative, and the Republican Party is liberal	0.00
Both parties are liberal	0.29
Both parties are conservative	0.27
Don't know	0.44
For a bill to become a law, who must approve its final wording?	
The Senate	0.14
The House of Representatives	0.10
The Senate and the House of Representatives	0.18
The Senate, the House of Representatives, and the President	0.42
Don't know	0.15
What is the term, in years, of a U.S. senator?	
2 years	0.15
4 years	0.19
6 years	0.54
8 years	0.02
Don't know	0.10
Who is currently the U.S. Attorney General?	
Jeff Sessions	0.07
William P. Barr	0.69

Robert Mueller	0.09
Jeffrey A. Rosen	0.04
Don't know	0.11
In how many U.S. states are gay and lesbian couples legally allowed to marry?	
0	0.02
22	0.20
36	0.14
50	0.32
Don't know	0.32
Below is a list of four policies. Which of these policies is generally associated with the Democratic Party?	
Reducing the deficit	0.10
Restricting access to abortion	0.13
Fighting climate change	0.40
Deregulation of the financial sector	0.13
Don't know	0.24

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