

An Improved Question Format for Measuring Conspiracy Beliefs

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Abstract. In an era of increasing partisan polarization and media fragmentation, interest in the causes of conspiracy beliefs has been growing rapidly. However, there is little consensus on how to measure these beliefs. Researchers typically present respondents with a conspiratorial statement, then assess their endorsement of the statement using an agree-disagree scale, a true-false scale, or some other variant. Researchers sometimes include a no-opinion response option and sometimes do not. Yet, there is have little evidence as to the best format. In this paper, we argue that common measures are challenging for respondents to answer and inflate estimates of conspiracy belief among the mass public. We introduce an alternative measure that presents respondents with an explicit choice between a conspiratorial and a conventional explanation for an event. Across three studies, the explicit choice format reduces no-opinion responding and reduces estimates of conspiracy belief, particularly among those low in political knowledge or cognitive reflection. These results suggest that previous findings may be inflated due to measurement artifacts. Based on this evidence, we recommend that researchers adopt the explicit choice format for measuring conspiracy beliefs and provide a no-opinion response option.

Conspiratorial beliefs seem to be widely held among the American public. A recent survey found that half of Americans endorsed at least one out of seven conspiracy theories presented to them (Oliver and Wood 2014b). Similarly, according to the 2012 American National Election Studies, 36% believed the Bush administration knew about the 9/11 plot before it happened, and 34% believed the Affordable Care Act authorized government panels to make end-of-life decisions for Medicare recipients. More recently, Tingley and Wagner (2017) found that 28% of Americans reported believing that condensation trails left by aircraft are part of a government program to release harmful chemicals into the air. These findings suggest that conspiratorial thinking, rather than an aberration, is a fundamental form of cognition.

However, there is little agreement on how to measure conspiracy beliefs. Scholars have extensively studied the *content* that ought to make up a conspiracy scale (e.g., Brotherton, French, and Pickering 2013; Uscinski, Klofstad, and Atkinson 2016), but there is less evidence on the optimal question *format*. The typical approach is to present respondents with a conspiratorial explanation for an event and assess respondents' belief in that statement using an agree-disagree scale (e.g., Oliver and Wood 2014b), a true-false scale (e.g., Miller, Saunders, and Farhart 2016; Swami et al. 2011) or some other variant (e.g., Bruder et al. 2013; Carey et al. 2016a; Wood 2016). These questions also vary in whether or not respondents are given the option of indicating that they hold no opinion, such as "don't know," or "neither agree nor disagree." These design choices have been shown to affect the validity of measures in other applications (e.g., Krosnick et al. 2001; Saris et al. 2010), yet there is little evidence as to the best format for conspiracy beliefs.

In this article, we argue that conspiracy questions are challenging for respondents to answer, as they typically require respondents to assess *why* some historical or political event

occurred. Oftentimes respondents are only vaguely familiar with the events in question, let alone the associated conspiracies. As a result, common approaches to measuring conspiracy beliefs may systematically inflate estimates of belief in conspiracies for two reasons. First, nearly all conspiracy questions simply present respondents with a conspiratorial claim without giving an alternative viewpoint. Absent an alternative explanation, respondents may be inclined to endorse the claim provided by the researcher (Krosnick 1991). Second, this acquiescence bias is likely exacerbated when researchers do not provide respondents with no-opinion response options (e.g., Miller, Saunders, and Farhart 2016), forcing them to guess when they know little about an event.

In this manuscript, we conduct three studies testing the impact of question format. In addition to testing two common formats, we introduce an explicit choice format that asks respondents to pick between conventional and conspiratorial explanations for an event. The results show that the explicit choice format reduces no-opinion responding and reduces the endorsement of conspiratorial claims, particularly among those who are low in political knowledge or cognitive reflection. These findings suggest that researchers should adopt the explicit choice format for measuring conspiracy beliefs and provide respondents with a no-opinion response option.

The Challenge of Measuring Conspiracy Beliefs

Conspiratorial thinking involves a specific way of making sense of the world that fulfills particular psychological needs. For example, Uscinski et al. (2016) define conspiracy theory as “a proposed explanation of events that cites as a main causal factor a small group of persons (the conspirators) acting in secret for their own benefit, against the common good” (58). Conspiracy beliefs are typically classified as a subset of political misperceptions that “fail to meet widely

agreed upon standards of evidence” (Flynn, Nyhan, and Reifler 2017, 128), however, the endorsement of a conspiracy serves various psychological motivations. For instance, conspiracy beliefs may aid in coping with an uncertain world (see Lemman 2007; Miller 2002; Swami and Furnham 2012 for details), providing structure and meaning to the world (Whitson and Galinsky 2008), or justifying political attitudes (e.g., Miller, Saunders, and Farhart 2016; Pasek et al. 2015; Smallpage, Enders, and Uscinski 2017).

The explanatory nature of conspiracy beliefs may make them particularly difficult to measure, however. In answering such a question, respondents typically must first consider a specific historical or political event, such as 9/11 or the Oklahoma City bombing, then reason about *why* that event took place. This requires some familiarity with the details of the event and the implications for one’s worldview. For example, a popular conspiracy explains the 9/11 attacks not as the result of a failure of intelligence agencies, but the result of coordinated efforts on behalf of the Bush administration to bring about war in the Middle East. Thus, conspiratorial belief typically entails both the rejection of a conventional explanation and the acceptance of an alternative, conspiratorial explanation. Taken together, these features make conspiracy questions demanding for survey respondents. This leads to several concerns about common practices in measuring conspiracy beliefs, detailed below.

The most general problem is low levels of knowledge about the background event that the conspiracy is intended to explain. For example, a national survey conducted in June 2007 found that only 43% of respondents correctly stated that most of the 9/11 hijackers came from Saudi Arabia, and the youngest respondents were the least likely to answer the question correctly (Braiker 2007). This lack of information is likely to extend to other crucial facts about the conventional explanation for how the event occurred. Many respondents are also unfamiliar with

conspiratorial claims. For example, Oliver and Wood (2014) found that, on average, only about half of the public self-reported hearing about each of six prominent conspiracies.² Thus, when posed with a standard conspiracy question, many respondents do not hold a pre-existing conspiratorial belief, and many more may lack any context to evaluate a conspiratorial explanation for an event.

If respondents struggle to answer conspiracy questions due to a lack of background information, they may be driven toward no-opinion responses, when made available. These no-opinion responses are appealing to respondents who do not have sufficiently structured thoughts about the event to easily provide a substantive response (e.g., Berinsky 2002). As question difficulty increases, no-opinion rates should increase as well, indicating a problematic survey question (Fowler and Cannel 1996).

A look at recent literature reveals high no-opinion rates. Across six conspiracy questions asked of a nationally representative sample, between 22% and 44% of respondents selected “neither agree nor disagree” (Oliver and Wood 2014b). Even on a high-profile rumor about health care reform and death panels, 33% of respondents reported being “unsure” (Berinsky 2017). These high no-opinion rates suggest that many respondents may not have the background knowledge to assess conspiratorial claims and struggle to answer these questions.

The difficulty of assessing claims about the causes of historical and political events is exacerbated by the standard practice of presenting respondents with only a conspiratorial statement and asking them to rate their agreement with or belief in the explanation. Survey

² Prior awareness ranged from 17% (vapor trails conspiracy) to 94% (birther conspiracy).

Notably, self-reports such as these are likely overestimates of familiarity (Prior 2009).

respondents are prone to agreeing with statements provided by a researcher, regardless of the content, and a review of the literature finds that this acquiescence bias inflates agreement with a statement by about 10 percentage points (Krosnick and Presser 2010). This effect is particularly pronounced for agree-disagree formats, but it also affects true-false questions (Schuman and Presser 1981), both of which are common for measuring conspiracy beliefs (e.g., ANES 2014; Brotherton, French, and Pickering 2013; Jolley, Douglas, and Sutton 2018; Miller, Saunders, and Farhart 2016; Oliver and Wood 2014b). Acquiescence bias is largest when survey questions are difficult, and disproportionately affects those with lower cognitive resources (Knauper et al. 1997; Knowles and Condon 1999). Given that many respondents know little about the topics of these conspiracy questions, some may endorse the conspiracy simply because it is the only option provided by the researcher, serving to inflate estimates of conspiracy belief. As a result, standard conspiracy questions likely produce higher estimates of conspiracy beliefs than an alternative format that provides more contextual information (described in detail below).

The possibility of acquiescence bias is likely exacerbated when respondents are not offered a no-opinion response option. Respondents lacking background information will tend to opt for no-opinion responses, yet many researchers omit these no-opinion response options entirely (see literature review below). Omitting a “don’t know” option is consistent with popular advice on questionnaire design, as it may discourage satisficing among respondents who hold opinions but may be unmotivated to retrieve them (Krosnick and Presser 2010). However, it also forces respondents who do not hold a relevant belief or opinion to choose a response (Beza et al. 1984; Sturgis, Roberts, and Smith 2014), which may exacerbate acquiescence bias. As a result, questions omitting a no-opinion option will likely inflate estimates of conspiracy belief, relative to questions that provide a no-opinion option.

Beyond inflating estimates of conspiracy belief, acquiescence bias may alter the correlates of conspiracy beliefs. People with low cognitive resources, such as less educated and less knowledgeable respondents, tend to be most susceptible to acquiescence bias and most likely to give no-opinion responses (e.g., Krosnick 1991; Krosnick et al. 2001). Some research has found that less knowledgeable respondents are more likely to endorse conspiracies (Berinsky 2017; Enders, Smallpage, and Lupton 2018; though see Miller, Saunders, and Farhart 2016), and several studies show that conspiracy believers tend to be less inclined toward analytic thinking (Swami et al. 2014; van Prooijen 2017; Ståhl and van Prooijen 2018). An influential paper on the topic suggests that “analytic thinking prompts careful and deliberate processing of information (Chaiken et al. 1989), which increases attention to the logical fallacies and factual inaccuracies inherent in most conspiracy theories” (Swami et al. 2014, 581). However, respondents low in analytic thinking and political knowledge are likely to be more prone to acquiescence bias. That is, people low in political knowledge are simply less aware of *any* of the facts surrounding the target event, and people low in analytic thinking may be less likely to search their memory for alternative explanations that are not provided by the researcher. As a result, these respondents may endorse *any* statement provided by a researcher. Thus, standard measures of conspiracy belief may inflate estimates of the effects of political knowledge and cognitive style, particularly when a no-opinion option is not provided.

A Systematic Review of Conspiracy Measurement Practices

To examine current measurement practices in the literature, we conducted a systematic review by searching Google Scholar for articles containing the words “conspiracy,” “rumor,” “rumour,” “misperception,” or “misinformation.” The review was limited to the years 1990-2018

and to seven political science journals, yielding 17 articles.³ Some articles contained multiple question formats, generating 25 observations. Each study was coded for several features, including scale format and presence and interpretation of no-opinion responses. The results are shown in Table 1.

The 25 observations included 12 different scale formats (e.g., agree/disagree), illustrating the lack of consensus among researchers. Of these 25 measures, 44% (n=11) did not offer a midpoint or a “don’t know” response, forcing respondents to provide a substantive response. Of the 14 measures providing a no-opinion response option, 57% (n=8) provided an explicit “don’t know” option and 36% (n=5) offered a midpoint, such as “neither agree nor disagree.” Thus, there is little consensus on whether and how to provide a no-opinion response option.

Those who allow a no-opinion response face a problem of interpretation. As shown in Table 1, there is little agreement as to how to code these responses. Of the 14 measures including no-opinion options, 36% (n=5) coded them as acceptance of conspiracies, 36% at the midpoint (n=5), 7% (n=1) as a rejection, and 21% (n=3) could not be coded.⁴ Given the high rates of no-opinion responding, how researchers handle no-opinion responses is likely consequential, but there is clearly little consensus on the practice.

[INSERT TABLE 1 ABOUT HERE]

³ The journals were *American Political Science Review*, *American Journal of Political Science*, *Journal of Politics*, *Political Behavior*, *Political Psychology*, *Political Communication*, and *Public Opinion Quarterly*.

⁴ One article did not provide sufficient information and two articles did not conduct a multivariate analysis and thus did not make a coding decision.

While based on a limited sample of articles, this review clearly demonstrates that there is no consensus on how to measure conspiracy beliefs. Researchers use a wide variety of question formats, are split on whether to include a no-opinion response option, have used a variety of different types of no-opinion options, and interpret these responses differently. These different measurement practices may yield different conclusions about the prevalence and correlates of conspiracy beliefs.

Development of Explicit Choice Measures

To minimize the problems with conventional measures, we propose a new question format that asks respondents to make an *explicit choice* between two alternative explanations for the same event. For example, respondents might be asked to choose between two statements about the causes of 9/11 – one conventional account attributing the event to intelligence failures and one conspiratorial account attributing the event to the Bush administration’s desire to go to war in the Middle East. This format has been used previously (Einstein and Glick 2015), but has not been widely adopted or compared to alternative formats. Explicit choice formats such as these tend to be less susceptible to both acquiescence bias and response sets (Javeline 1999; Krosnick and Presser 2010; Smyth et al. 2006). Moreover, by providing competing explanations, it helps address the problem of low contextual knowledge about particular events. As a result, the explicit choice format should reduce no-opinion responding and generate lower estimates of conspiracy beliefs. These effects should be largest among those with low levels of political knowledge and lower cognitive resources.

As the focal measures throughout the paper, we collected a list of conspiracy theories previously used in political science and psychology research.⁵ We then removed conspiracies involving events that would not be well-known to the public or would take extensive background explanation (e.g., Hillary Clinton had Seth Rich murdered). Some studies have used general claims that do not offer an explanation for a particular event (e.g., aliens exist) and thus only imply a conspiracy, so these items were excluded as well. The end result was a diverse set of 14 conspiracies that included both partisan and non-partisan claims, and involved both historical and current events.

For each conspiracy, we generated a conventional account that consisted of a short statement taking a similar format to the conspiratorial account. These conventional accounts were largely developed from relevant Wikipedia pages, under the assumption that these pages represent widespread agreement about an event. Conventional accounts were also phrased in such a way that they are not direct rebuttals of the conspiracies, but are incompatible with them. The full text of the conspiracies and corresponding conventional accounts are listed in Table 2, along with citations to articles that have used these conspiracies previously.

[INSERT TABLE 2 ABOUT HERE]

Study 1

The first study consists of a two-wave online panel survey with an experiment embedded in each wave. Each experiment was designed to test how response format affects rates of no-

⁵ One conspiracy (Trump wiretapping) was also included that has not been used in past research in order to add an additional current event.

opinion responses and conspiracy endorsement. Respondents were recruited from required introductory courses at the University of Houston. The first wave was fielded between October 29 and November 4, 2018, and 887 students completed the study. The second wave was fielded November 13-17, 2018, and 644 students completed the second wave of the study. See the Supplementary Online Materials for sample characteristics.

Design and Measures

The first wave of the survey tested the impact of question format on conspiracy endorsement when a no-opinion option is not provided. Respondents were asked about their belief in seven conspiracies and were randomly assigned to one of three question formats: agree-disagree (AD), true-false (TF), or explicit choice (EC). The AD and TF scales were both four-point scales (see the Appendix for full question wording), while the EC scale was dichotomous. To facilitate comparison, the AD and TF scales were recoded to dichotomous formats.⁶ The primary dependent variable consists of a simple count of the number of conspiracies that each respondent endorsed.

In the second wave, respondents were asked about their endorsement of the remaining seven conspiracies and were randomly assigned to one of five conditions. The first three conditions were similar to those in wave 1 (EC, AD, TF). The fourth and fifth conditions asked about respondents' endorsement of the conventional accounts (CA) of each of the seven conspiracy events in either an agree-disagree (AD-CA) or true-false (TF-CA) format. These results are discussed in more detail in the Supplementary Online Materials, but they demonstrate

⁶ Notably, this difference in format biases us against expectations, as including belief strength tends to decrease the selection of middle alternatives (Presser and Schuman 1980).

that question format affects endorsement of conventional beliefs as well as conspiracy beliefs. The design of wave 2 also differed from wave 1 in two ways. First, to maximize similarity, the strength of the belief was not measured in any of the conditions. And second, all conditions included a no-opinion response option. This option was labeled “unsure” in the EC and TF conditions and “neither agree nor disagree” in the AD condition.

Results

Conspiracy endorsement rates in Wave 1, which did not offer a no-opinion response option, are shown in the top panel of Figure 1. On average, respondents in the EC condition endorsed 2.0 out of 7 conspiracies, which was significantly lower than both the TF ($M = 2.7$; $t(580) = 6.17, p < .0001$) and AD conditions ($M = 2.5$; $t(621) = 4.89, p < .0001$), after correcting for multiple comparisons using the Holm method (Aickin and Gensler 1996).⁷ These findings suggest that conventional measures inflate rates of conspiracy endorsement.

The second wave allows a test of whether this pattern emerges even when a no-opinion response is provided. The greater difficulty of the AD and TF formats, relative to the EC, should drive more respondents to the no-opinion response option. The rate of no-opinion responses is shown in the bottom left panel of Figure 1. In the EC condition, the average respondent gave 1.1 no-opinion responses, which was significantly lower than both the TF ($M = 1.8$; $t(251) = 2.96, p = .003$) and AD conditions ($M = 2.1$; $t(243) = 4.37, p < .001$), after correcting for multiple comparisons.

The higher no-opinion rates observed in the TF and AD conditions may reduce differences in conspiracy endorsement between conditions. Indeed, there is no significant effect

⁷ For item-level descriptive statistics in Study 1, see the Supplementary Online Materials.

of question format when coding no-opinion responses as rejections (see bottom middle panel of Figure 1). Respondents in the EC condition endorsed an average of 1.3 conspiracies, compared with 1.4 in the TF condition ($t(251) = 0.57, p = 1.000$) and 1.3 in the AD condition ($t(243) = 0.23, p = 1.000$). These results suggest that providing a no-opinion response reduces the differences between formats by providing respondents who struggle to answer the question a way to opt out of providing a substantive response.

However, it is worth noting that these patterns change if no-opinion responses are coded at the midpoint, as is common practice in this literature. This approach follows the common practice of coding “neither agree nor disagree” as a three on a five-point scale (e.g., Goertzel 1994; Oliver and Wood 2014a, 2014b). Under this coding scheme, the EC condition generated significantly lower conspiracy endorsement ($M = 1.9$) than both the TF ($M = 2.3; t(251) = 2.26, p = .049$) and AD ($M = 2.3; t(243) = 2.17, p = .049$) conditions, after correcting for multiple comparisons. These differences are only more dramatic if no-opinion responses are coded as conspiracy endorsements. This is clearly a result of the higher no-opinion rates in the AD and TF conditions and demonstrates that these two formats are more sensitive to different assumptions about the nature of no-opinion responses.

[INSERT FIGURE 1 ABOUT HERE]

Discussion

So far, the results raise concerns about common conspiracy measures, but suggest that the explicit choice format helps alleviate these problems. When no-opinion response options are not provided, the AD and TF formats both generate higher levels of conspiracy endorsement. When no-opinion response options are provided, conspiracy endorsement rates are similar across conditions, but the AD and TF formats generate significantly higher rates of no-opinion

responding. Together, these results imply that conventional formats inflate estimates of conspiracy beliefs when no-opinion options are not provided, and when researchers interpret no-opinion responses as partial or full endorsements of conspiracies.

Study 2

The second study allows another test of the impact of question format when no-opinion options are included. Twelve hundred respondents were recruited from Amazon's Mechanical Turk during March 25-26, 2018. Respondents were required to be located in the U.S. and have an approval rate of at least 95%. The sample is not representative (see Supplementary Online Materials for sample characteristics), but samples drawn from MTurk routinely replicated experimental and observational findings from nationally representative samples (Berinsky, Huber, and Lenz 2012; Clifford, Jewell, and Waggoner 2015; Mullinix et al. 2015).

Design and Measures

Respondents first answered a series of questions about their personality and political attitudes (see Supplementary Online Materials for details). Respondents were then randomized into either the EC, AD, or TF format and asked about all 14 conspiracies from Study 1. All conditions included three response options, including a no-opinion response. Following the conspiracy battery, respondents were asked a series of questions about their perceptions of the survey and about their demographics.

Results

The left panel of Figure 2 displays the rate of no-opinion responses by condition. Consistent with Study 1, the EC condition generated substantially fewer no-opinion responses

($M = 1.8$) than either the AD ($M = 3.2$, $t(805) = 7.24$, $p < .001$) or TF conditions ($M = 2.9$, $t(839) = 6.17$, $p < .001$), after correcting for multiple comparisons.⁸

Turning to conspiracy endorsement, there is little difference between conditions when no-opinion responses are coded as rejections (see center panel of Figure 2), suggesting again that the presence of a no-opinion response option reduces the differences between question formats. Under this approach, the EC condition ($M = 2.9$) is indistinguishable from the AD condition ($M = 2.6$; $t(805) = 1.52$, $p = .129$) and, surprisingly, generates higher levels of conspiracy endorsement than the TF condition ($M = 2.3$; $t(839) = 3.27$, $p = .002$), after correcting for multiple comparisons. The findings for the TF condition were contrary to the findings of Study 1, but it is unclear why.

Once again, however, these patterns change when coding no-opinion responses at the midpoint (see right panel of Figure 2). Under this coding scheme, the EC condition again generated slightly lower levels of conspiracy belief ($M = 3.8$) than the AD condition ($M = 4.2$, $t(805) = 2.12$, $p = .069$), but did not differ from the TF condition ($M = 3.8$, $t(839) = 7.24$, $p = .995$), after correcting for multiple comparisons. If no-opinion responses are coded as endorsements, however, the EC condition generates significantly lower estimates than the TF and AD conditions ($ps < .05$).

[FIGURE 2 ABOUT HERE]

Discussion

The results from Study 2 again demonstrate that response format affects how people respond to conspiracy questions. Similar to Study 1, the EC condition generated substantially

⁸ For item-level descriptive statistics in Study 2, see the Supplementary Online Materials.

lower rates of no-opinion responses than either the AD or TF conditions. However, the results were mixed with respect to conspiracy endorsement rates, suggesting again that the provision of a no-opinion response option may minimize differences between formats.

Study 3

The final study was conducted on a large sample targeted to the national population and included the most detailed test of the impact of question format. The sample consists of 2,462 respondents recruited through the Lucid platform. Lucid aggregates respondents from many online panels and provides quota samples that are matched to US Census demographic margins on gender, ethnicity, education, region, age, and income. Recent research shows that findings from Lucid samples closely resemble demographic and experimental findings from nationally representative samples (Coppock and McClellan 2019).

Design and Measures

Respondents first answered a series of questions about their political attitudes, personality, and political knowledge. Next, respondents answered the same 14 conspiracy questions described above, but were randomized into one of six conditions in a 3×2 factorial design. The first factor manipulated question format (EC, AD, TF) and the second factor manipulated the presence of a no-opinion response option (present, absent). This design allows us to directly test how the presence of a no-opinion option affects responses. At the end of the survey, respondents answered several questions about their perceptions of the survey and their demographics.

Two dispositional measures, political knowledge and cognitive reflection, were selected to test whether question format has the largest effects among those with the least background

knowledge and cognitive resources. Past work has demonstrated negative relationships between conspiracy beliefs and both variables. Political knowledge was measured with four factual knowledge items based on the scale developed by Delli Carpini and Keeter (1993).⁹ To measure cognitive reflection, respondents were randomly assigned to five items from the seven-item Cognitive Reflection Task in a multiple choice format (Sirota and Juanchich 2018; Toplak, West, and Stanovich 2014; Frederick 2005).

Results

Table 3, below, shows the percentage of respondents endorsing each conspiracy by question format. No-opinion responses are coded as rejections. In the EC-NO condition, endorsements range from a low of 12% (Oklahoma City) to a high of 35% (Russia-Trump). However, endorsement rates clearly vary by question format. In the EC-NO condition, 22% of respondents endorsed each conspiracy, on average. But in the AD condition, this number nearly doubles, jumping to 41%. Clearly, question format matters.

[TABLE 3 ABOUT HERE]

Figure 3 plots no-opinion rates among the three conditions that offered them. As expected, the EC condition generated fewer no-opinion responses ($M = 2.6$) than both the AD ($M = 4.2$; $t(819) = 6.16$, $p < .001$) and TF conditions ($M = 3.4$; $t(819) = 3.38$, $p = .001$), after correcting for multiple comparisons. Consistent with expectations, a regression model controlling for experimental condition shows that no-opinion responses are associated with lower levels of political knowledge ($b = -2.38$, $p < .001$), lower cognitive reflection ($b = -1.02$, $p =$

⁹ See Appendix for full question wording.

.023), and higher satisficing ($b = -.50, p = .001$).¹⁰ All three findings suggest that respondents with lower background knowledge and cognitive resources are more likely to opt out of providing substantive responses, but the EC condition minimizes the consequences of these effects.

Figure 3 displays the mean conspiracy endorsement rates by experimental condition, with no-opinion responses coded as rejections. As expected, the EC condition that offered a no-opinion response (EC-NO) generated the lowest levels of conspiracy endorsement of the six conditions. As a more formal test, we estimated a regression model predicting conspiracy beliefs as a function of two categorical indicators: question format (EC, AD, TF) and the presence of a no-opinion response (NO, no NO). Relative to the EC condition, the AD and TF conditions both predict significantly higher conspiracy endorsement rates (AD: $b = 1.28, p < .001$; TF: $b = 0.87, p < .001$) and the presence of a no-opinion response option substantially reduces conspiracy endorsement ($b = -1.26, p < .001$), after correcting for multiple comparisons. Finally, a set of pairwise comparisons shows that the EC-NO condition generated significantly lower conspiracy endorsement rates than all other conditions even after correcting for multiple comparisons ($ps < .001$). See Supplementary Online Materials for full model details.

These patterns are only exacerbated when adopting the practice of coding no-opinion responses at the midpoint. Mean endorsement rates under this coding scheme are shown in Figure 3. Scores, of course, do not change for the conditions that did not offer a no-opinion response, so only the three relevant conditions are displayed. The EC-NO condition generates substantially lower conspiracy endorsement rates ($M = 4.3$) than both the AD-NO ($M = 6.1$;

¹⁰ See Supplementary Online Materials for full model details.

$t(819) = 8.00, p < .001$) and TF-NO conditions ($M = 5.6; t(819) = 6.23, p < .001$), after correcting for multiple comparisons. These findings suggest that assumptions about the coding of no-opinion responses can be consequential, but their effects are minimized by the EC condition, which produces the fewest no-opinion responses.

[FIGURE 3 ABOUT HERE]

Who Is Most Sensitive to Question Format?

The effects of question format should be largest among respondents with the least background knowledge and those who are least prone to cognitive reflection. To test these expectations, we examine how treatment effects vary by levels of political knowledge and cognitive reflection. Throughout this section no-opinion responses are coded as rejections, but the results are substantively similar when coding no-opinions at the midpoint. The models also do not include controls for sociodemographics, but this modeling choice does not substantively affect the results (see Supplementary Online Materials).

To begin, we predicted conspiracy endorsement as a function of political knowledge scores, a dichotomous indicator of whether a no-opinion response was offered, and an interaction between the two (full model details shown in Supplementary Online Materials). As expected, there is a significant interaction ($p < .001$). The left-hand panel of Figure 4 plots the treatment effect across levels of political knowledge. At the highest levels of political knowledge, offering a no-opinion option leads to a small reduction in conspiracy endorsement ($b = -0.51, p = .031$). However, at the lowest levels of political knowledge, offering a no-opinion response option reduces endorsement by more than two conspiracy beliefs ($b = -2.32, p < .001$).

We reproduced this same analysis while substituting the CRT for political knowledge. The treatment effects are plotted in the right-hand panel of Figure 4. At the highest levels of the

CRT, the treatment does not affect conspiracy endorsement ($b = 0.19, p = .699$). But at the lowest levels of cognitive reflection, offering a no-opinion response reduces conspiracy endorsement by more than one and a half conspiracies ($b = -1.67, p < .001$).

[FIGURE 4 ABOUT HERE]

The EC condition should also reduce the burden on respondents, potentially weakening the effects of political knowledge and cognitive reflection even further. To provide the fullest test, we predicted conspiracy endorsement as a function of five experimental condition dummies (with EC-NO as the baseline), political knowledge, and interactions between knowledge and each condition dummy. Four of the five interactions are statistically significant ($ps < .05$), with the exception of the AD-NO condition ($p = .069$), after correcting for multiple comparisons. The left panel of Figure 5 plots the effect of political knowledge in each experimental condition. Higher levels of political knowledge predict significantly lower levels of conspiracy belief in all conditions ($ps < .01$) *except* for the EC-NO condition ($p = .228$), again accounting for multiple comparisons. The effects of knowledge are largest in the two most demanding conditions – the AD and TF conditions that do not offer a no-opinion response option. These findings suggest that the EC-NO condition reduces the burden on respondents, having the greatest effect on those with the lowest levels of background knowledge. This also suggests that previous findings that the politically knowledgeable are less likely to believe in conspiracies may largely be a methodological artifact.

As a further test, we reproduce this same analysis, but substitute the CRT scores for political knowledge. The effects of CRT are plotted by experimental condition in the right-hand panel of Figure 5. The results are less statistically certain, as none of the interaction terms are statistically significant ($ps > .05$), but a similar pattern emerges. After accounting for multiple

comparisons, cognitive reflection is a significant predictor of conspiracy belief only in the two most demanding conditions – the AD and TF conditions that do not provide a no-opinion response option ($ps < .001$). These patterns again suggest that common question formats are more demanding on respondents. And, from a substantive standpoint, these results suggest that past research finding a link between conspiracy beliefs and cognitive reflection may have overstated the effects.

Overall, these results suggest that respondents who are the least politically knowledgeable and the least reflective are most responsive to question format. A very similar pattern emerges when instead using satisficing (or survey effort) as a moderator. Satisficing predicted higher conspiracy beliefs with conventional formats, especially AD and TF conditions that did not offer a no-opinion response, but this effect was absent in the EC-NO condition (see Supplementary Online Materials for details).¹¹ Together, these results suggest that respondents with the fewest cognitive resources are the most responsive to question format – that is, they are more inclined to agree with conspiratorial statements offered by a researcher when they are not provided with an alternative explanation or an opportunity to opt out of expressing a belief.

[FIGURE 5 ABOUT HERE]

Conclusion

With the rise of misinformation and fake news, studying the spread of conspiratorial beliefs is more important than ever. Researchers and pollsters have reached a number of dramatic

¹¹ Similarly, higher survey attention predicted lower conspiracy beliefs and lower no-opinion rates in both Studies 1 and 2. See Supplementary Online Materials for details.

conclusions about the extent of conspiracy belief among the mass public. Yet, there has been surprisingly little research on how question format affects estimates of conspiracy belief. The findings here suggest that two common measurement practices – the omission of conventional explanations for events and the omission of no-opinion response options – inflate estimates of conspiracy belief and change the portrait of who holds these beliefs. Based on these findings, researchers ought to adopt the explicit choice format in future research and provide a no-opinion option to respondents.

The largest differences between question formats were observed among those who score low in political knowledge and low in cognitive reflection. These findings suggest that conventional question formats are overstating conspiracy belief among respondents with the fewest cognitive resources due to acquiescence bias. Moreover, while previous research has found relationships between conspiracy beliefs and political knowledge and cognitive reflection, these findings did not replicate when relying on the explicit choice measure with a no-opinion response option. This suggests that past findings may have largely been a measurement artifact, but this will require further testing to resolve. Other research on the cognitive and epistemic predictors of conspiracy beliefs may be affected by these same measurement artifacts. However, there are a number of predictors of conspiracy belief that are less theoretically linked to response biases and thus should be less sensitive to question format. In Study 3, we investigated three such sets of models: sociodemographics, the Big Five personality traits, and conspiratorial predispositions. Full results are shown in the Supplementary Online Materials, but the results were more similar across question formats. Of course, further research is needed on how question format may affect the substantive conclusions drawn by researchers, but cognitive and epistemic predictors of conspiracy beliefs should be most sensitive to question format.

Of course, a skeptic might argue that the persistent relationship between political knowledge and conspiracy beliefs using conventional scales suggests that those low in political knowledge are indeed more susceptible to believing in conspiracies when another explanation is not available. There are two ways to interpret these findings. The first is that, for some respondents, conventional measures are *creating* conspiracy beliefs, and thus telling us something about who is most receptive to conspiratorial claims. While this is a departure from how scholars typically interpret these measures, it would still be informative about who is inclined toward adopting conspiratorial beliefs. However, in the real world, conspiracy beliefs don't exist in a vacuum, but instead compete with conventional explanations for a particular event. Thus, the explicit choice format seems to be a more realistic and valid measure of conspiracy belief.

A second interpretation is that conventional measures, for some respondents, are measuring something more ephemeral and akin to non-attitudes. This interpretation is consistent with the evidence that some respondents who endorsed conspiratorial claims using conventional measures would have selected a conventional explanation or a no-opinion response were it made available. This interpretation is also supported by the fact that these effects were largest among those with the lowest levels of political knowledge. Of course, these questions cannot be answered with the data presented here and further research will be needed. However, given that the explicit choice format is arguably a more realistic measure and produces the lowest no-opinion rates of the formats tested here, this format seems to be the most valid measure of conspiracy belief.

Our review of the literature revealed a troubling lack of agreement among researchers as to whether to allow no-opinion responses and how to interpret them. As demonstrated here,

different measurement and coding practices can yield substantively different results. The lack of clear measurement practices makes it more difficult to interpret conflicting findings across the literature and raises the concern of measurement artifacts. Perhaps most troublingly, the disagreement in coding practices creates a flexibility in data analysis that may contribute to false positives (Simmons, Nelson, and Simonsohn 2011). The results here suggest that no-opinion response options should be included and more likely represent a rejection of a conspiratorial claim than acceptance of it. However, given the likely heterogeneity in the meaning of these responses, the best strategy is to select the question format that minimizes no-opinion responses (the explicit choice format) and thus reduces their impact. Finally, regardless of the measurement and coding choices made by researchers, these decisions, and how they might affect substantive findings, ought to be discussed.

We also encourage researchers to use the 14 explicit choice questions developed here. However, there are at least two ways in which the scale could be improved. First, although the items capture a diverse set of topics used by previous researchers, these 14 items are not designed to be representative of the universe of conspiracies or to be balanced with regard to partisan inclinations, for example. Thus, comprehensive scales of explicit choice items that satisfy particular substantive goals would be extremely useful. Second, the explicit choice question format did not allow respondents to indicate the strength of their belief. However, belief strength could be easily gauged using a branching format (e.g., Malhotra, Krosnick, and Thomas 2009). Clearly, further work is needed to improve the validity of measures of conspiracy beliefs, but these results provide a step toward reducing response biases and providing more accurate estimates of conspiracy belief in the mass public.

Appendix

Study 1 Question Wording

Question Wording: Wave 1

[Note: see Table 2 in the main text for the full text of all 14 conspiracies.]

True-False Condition

Now we are going to show you a series of statements. We would like you to tell us whether you think each statement is true or false.

Dr. Martin Luther King Jr. was allegedly killed by James Earl Ray, but his killing was actually part of an effort by the government. Loyd Jowers, a local businessman, testified to working with government officials to carry out the assassination.

- Definitely true
- Probably true
- Probably false
- Definitely false

Agree-Disagree Condition

Now we are going to show you a series of statements. We would like you to tell us whether you agree or disagree with each statement.

Dr. Martin Luther King Jr. was allegedly killed by James Earl Ray, but his killing was actually part of an effort by the government. Loyd Jowers, a local businessman, testified to working with government officials to carry out the assassination.

- Strongly agree
- Agree
- Disagree
- Strongly disagree

Explicit Choice Condition

Now we are going to show you a pair of statements. We would like you to tell us which of the two statements you think is most likely to be true.

Which of these two statements do you think is most likely to be true?

- Dr. Martin Luther King Jr. was allegedly killed by James Earl Ray, but his killing was actually part of an effort by the government. Loyd Jowers, a local businessman, testified to working with government officials to carry out the assassination.

- Dr. Martin Luther King Jr. was killed by James Earl Ray, a fugitive from a penitentiary. The Department of Justice conducted a follow up investigation in 2000 and confirmed that James Earl Ray was the sole actor in King's assassination.

Question Wording: Wave 2

[Note: see Table 2 in the main text for the full text of all 14 conspiracies.]

True-False Condition (Conspiracy)

Now we are going to show you a series of statements. We would like you to tell us whether you think each statement is true or false.

The Bush administration knew about the 9/11 attacks ahead of time but took no action to stop them because they wanted to go to war in the Middle East.

- True
- False
- Unsure

True-False Condition (Conventional Account)

Now we are going to show you a series of statements. We would like you to tell us whether you think each statement is true or false.

The Bush Administration and intelligence community were unprepared for the 9/11 attacks and did not pay close enough attention to the warning signs.

- True
- False
- Unsure

Agree-Disagree Condition (Conspiracy)

Now we are going to show you a series of statements. We would like you to tell us whether you agree or disagree with each statement.

The Bush administration knew about the 9/11 attacks ahead of time but took no action to stop them because they wanted to go to war in the Middle East.

- Agree
- Neither agree nor disagree
- Disagree

Agree-Disagree Condition (Conventional Account)

Now we are going to show you a series of statements. We would like you to tell us whether you agree or disagree with each statement.

The Bush Administration and intelligence community were unprepared for the 9/11 attacks and did not pay close enough attention to the warning signs.

- Agree
- Neither agree
- Unsure

Explicit Choice Condition

Now we are going to show you a pair of statements. We would like you to tell us which of the two statements you think is most likely to be true.

Which of these two statements do you think is most likely to be true?

- The Bush administration knew about the 9/11 attacks ahead of time but took no action to stop them because they wanted to go to war in the Middle East.
- The Bush Administration and intelligence community were unprepared for the 9/11 attacks and did not pay close enough attention to the warning signs.
- Unsure

Study 2 Question Wording

[Note: see Table 2 for full text of all 14 conspiracies.]

True-False Condition

Now we are going to show you a series of statements. We would like you to tell us whether you think each statement is true or false.

Dr. Martin Luther King Jr. was allegedly killed by James Earl Ray, but his killing was actually part of an effort by the government. Loyd Jowers, a local businessman, testified to working with government officials to carry out the assassination.

- True
- False
- Unsure

Agree-Disagree Condition

Now we are going to show you a series of statements. We would like you to tell us whether you agree or disagree with each statement.

Dr. Martin Luther King Jr. was allegedly killed by James Earl Ray, but his killing was actually part of an effort by the government. Loyd Jowers, a local businessman, testified to working with government officials to carry out the assassination.

- Agree
- Neither agree nor disagree
- Disagree

Explicit Choice Condition

Now we are going to show you a pair of statements. We would like you to tell us which of the two statements you think is most likely to be true.

Which of these two statements do you think is most likely to be true?

- Dr. Martin Luther King Jr. was allegedly killed by James Earl Ray, but his killing was actually part of an effort by the government. Loyd Jowers, a local businessman, testified to working with government officials to carry out the assassination.
- Dr. Martin Luther King Jr. was killed by James Earl Ray, a fugitive from a penitentiary. The Department of Justice conducted a follow-up investigation in 2000 and confirmed that James Earl Ray was the sole actor in King's assassination.
- Unsure

Study 3 Question Wording

[Note: see Table 2 for full text of all 14 conspiracies.]

Political Knowledge

Do you happen to know the name of the current Chief Justice of the Supreme Court of the United States?

- John Roberts
- Mike Pence
- Clarence Thomas
- Paul Ryan

Who is the current U.S. Senate Majority Leader?

- Nancy Pelosi
- Kevin McCarthy
- Mitch McConnell
- Chuck Schumer

How much of a majority is required by the U.S. Senate and House to override a presidential veto?

- One-half
- Three-fifths
- Two-thirds
- Three-quarters

Which political party is known for advocating for a smaller federal government?

- Republicans
- Democrats

In what year did the Supreme Court of the United States (SCOTUS) decide *United States v. Segui*?

CRT

In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half the lake?

- 47 days
- 24 days
- 12 days
- 36 days

A bat and a ball cost \$1.10 in total. The bat costs \$1.00 more than the ball. How much does the ball cost?

- 5 cents
- 10 cents
- 9 cents
- 1 cent

If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?

- 5 minutes
- 100 minutes
- 20 minutes
- 500 minutes

CRT 2

If John can drink one barrel of water in 6 days, and Mary can drink one barrel of water in 12 days, how long would it take them to drink one barrel of water together?

- 4 days
- 9 days
- 12 days
- 3 days

Jerry received both the 15th highest and the 15th lowest mark in the class. How many students are in the class?

- 29 students
- 30 students
- 1 student
- 15 students

A man buys a pig for \$60, sells it for \$70, buys it back for \$80, and sells it finally for \$90. How much has he made?

- \$10
- \$20
- \$0
- \$30

Simon decided to invest \$8,000 in the stock market one day early in 2008. Six months after he invested, on July 17, the stocks he had purchased were down 50%. Fortunately for Simon, from July 17 to October 17, the stocks he had purchased went up 75%. At this point, Simon:

- Has lost money
- Is ahead of where he began
- Has broken even in the stock market
- It cannot be determined

Personality

Here are a number of personality traits that may or may not apply to you. Please indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

I see myself as...

Extraverted, enthusiastic

Critical, quarrelsome

Dependable, self-disciplined

Anxious, easily upset

Open to new experiences, complex

Reserved, quiet

Sympathetic, warm

Disorganized, careless

Calm, emotionally stable

Conventional, uncreative

- Strongly agree

- Moderately agree
- Slightly agree
- Slightly disagree
- Moderately disagree
- Strongly disagree

Conspiratorial Predispositions

How strongly do you agree or disagree with the following statements:

Politics is ultimately a struggle between good and evil.

We are currently living in End Times as foretold by the Biblical prophecy.

Much of what happens in the world today is decided by a small and secretive group of individuals.

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Conspiracy Theories

Explicit Choice with Don't Know

Now we are going to show you a pair of statements. We would like you to tell us which of the two statements you think is most likely to be true.

Which of these two statements do you think is most likely to be true?

- Princess Diana's death was planned by Prince Philip, Prince Charles and MI6 to prevent her marriage to Dodi Fayad, a Muslim, because such an engagement in the British Royal Family would not be tolerated.
- Princess Diana's death was caused by a car accident. While the paparazzi may have played a role in the accident, the driver was intoxicated and using prescription drugs.
- Unsure

Explicit Choice without Don't Know

Which of these two statements do you think is most likely to be true?

- Princess Diana's death was planned by Prince Philip, Prince Charles and MI6 to prevent her marriage to Dodi Fayad, a Muslim, because such an engagement in the British Royal Family would not be tolerated.
- Princess Diana's death was caused by a car accident. While the paparazzi may have played a role in the accident, the driver was intoxicated and using prescription drugs.

Agree/Disagree with Don't Know

Now we are going to show you a series of statements. We would like you to tell us whether you agree or disagree with each statement.

Princess Diana's death was planned by Prince Philip, Prince Charles and MI6 to prevent her marriage to Dodi Fayad, a Muslim, because such an engagement in the British Royal Family would not be tolerated.

- Agree
- Neither agree nor disagree
- Disagree

Agree/Disagree without Don't Know

Princess Diana's death was planned by Prince Philip, Prince Charles and MI6 to prevent her marriage to Dodi Fayad, a Muslim, because such an engagement in the British Royal Family would not be tolerated.

- Agree
- Disagree

True/False with Don't Know

Now we are going to show you a series of statements. We would like you to tell us whether you think each statement is true or false.

Princess Diana's death was planned by Prince Philip, Prince Charles and MI6 to prevent her marriage to Dodi Fayad, a Muslim, because such an engagement in the British Royal Family would not be tolerated.

- True
- False
- Unsure

True/False Without Don't Know

Princess Diana's death was planned by Prince Philip, Prince Charles and MI6 to prevent her marriage to Dodi Fayad, a Muslim, because such an engagement in the British Royal Family would not be tolerated.

- True

- False

Supplementary Data

Supplementary data are freely available at *Public Opinion Quarterly* online.

References

- Aickin, Mikel, and Helen Gensler. 1996. "Adjusting for Multiple Testing When Reporting Research Results: The Bonferroni vs Holm Methods." *American Journal of Public Health* 86:726–28. <https://doi.org/10.2105/ajph.86.5.726>.
- Albertson, Bethany, and Kim Guiler. 2018. "Conspiracies, Electoral Fraud, and Support for Democratic Norms." In University of Houston Political Misperceptions Conference 2018.
- Allcott, Hunt, and Matthew Gentzkow. 2017. "Social Media and Fake News in the 2016 Election." *Journal of Economic Perspectives* 31:211–36. <https://doi.org/10.1257/jep.31.2.211>.
- ANES. 2014. User's Guide and Codebook for the ANES 2012 Time Series Study. Ann Arbor, MI and San Alto, CA: The University of Michigan and Stanford University.
- Berinsky, Adam J. 2002. "Silent Voices: Social Welfare Policy Opinions and Political Equality in America." *American Journal of Political Science* 46:276–87. <https://doi.org/10.2307/3088376>.
- . 2017. "Rumors and Health Care Reform: Experiments in Political Misinformation." *British Journal of Political Science* 47:241–62. <https://doi.org/10.1017/S0007123415000186>.
- Berinsky, Adam J., Gregory A. Huber, and Gabriel S. Lenz. 2012. "Evaluating Online Labor Markets for Experimental Research: Amazon.Com's Mechanical Turk." *Political Analysis* 20:351–68. <https://doi.org/10.1093/pan/mpr057>.
- Beza, Angell, William A. Belson, John P. Robinson, Robert Meadow, Howard Schuman, and Stanley Presser. 1984. Questions and Answers in Attitude Surveys: Experiments on

- Question Form, Wording, and Context. *Contemporary Sociology*. Vol. 13. San Diego, CA: Academic Press. <https://doi.org/10.2307/2068268>.
- Braiker, Brian. 2007. "Poll: What Americans (Don't) Know." *Newsweek*. 2007. <https://www.newsweek.com/poll-what-americans-dont-know-100099>.
- Brotherton, Robert, Christopher C. French, and Alan D. Pickering. 2013. "Measuring Belief in Conspiracy Theories: The Generic Conspiracist Beliefs Scale." *Frontiers in Psychology* 4:279. <https://doi.org/10.3389/fpsyg.2013.00279>.
- Bruder, Martin, Peter Haffke, Nick Neave, Nina Nouripanah, and Roland Imhoff. 2013. "Measuring Individual Differences in Generic Beliefs in Conspiracy Theories Across Cultures: Conspiracy Mentality Questionnaire." *Frontiers in Psychology* 4:225. <https://doi.org/10.3389/fpsyg.2013.00225>.
- Carey, John M., Brendan Nyhan, Benjamin Valentino, and Mingnan Liu. 2016. "An Inflated View of the Facts? How Preferences and Predispositions Shape Conspiracy Beliefs about the Deflategate Scandal." *Research & Politics* 3 (3):205316801666867. <https://doi.org/10.1177/2053168016668671>.
- Clifford, Scott, Ryan M. Jewell, and Philip D. Waggoner. 2015. "Are Samples Drawn from Mechanical Turk Valid for Research on Political Ideology?" *Research & Politics* 2 (4):205316801562207. <https://doi.org/10.1177/2053168015622072>.
- Coppock, Alexander, and Oliver A. McClellan. 2019. "Validating the Demographic, Political, Psychological, and Experimental Results Obtained from a New Source of Online Survey Respondents." *Research & Politics* 6 (1):205316801882217. <https://doi.org/10.1177/2053168018822174>.

Delli Carpini, Michael X., and Scott Keeter. 1993. "Measuring Political Knowledge: Putting First Things First." *American Journal of Political Science* 37:1179–1206.

<https://doi.org/10.2307/2111549>.

Einstein, Katherine Levine, and David M. Glick. 2015. "Do I Think BLS Data Are BS? The Consequences of Conspiracy Theories." *Political Behavior* 37:679–701.

<https://doi.org/10.1007/s11109-014-9287-z>.

Enders, Adam M., Steven M. Smallpage, and Robert N. Lupton. 2018. "Are All 'Birthers' Conspiracy Theorists? On the Relationship Between Conspiratorial Thinking and Political Orientations." *British Journal of Political Science*, July, 1–18.

<https://doi.org/10.1017/S0007123417000837>.

Flynn, D.J., Brendan Nyhan, and Jason Reifler. 2017. "The Nature and Origins of Misperceptions: Understanding False and Unsupported Beliefs About Politics." *Political Psychology* 38:127–50. <https://doi.org/10.1111/pops.12394>.

Fowler, Floyd J., and Charles F. Cannel. 1996. "Using Behavioral Coding to Identify Cognitive Problems with Survey Questions." In *Answering Questions: Methodology for Determining Cognitive and Communicative Processes in Survey Research*, edited by N. Schwarz and S. Sudman, 15–36. San Francisco, CA: Jossey-Bass.

Frederick, Shane. 2005. "Cognitive Reflection and Decision Making." *Journal of Economic Perspectives* 19:25–42. <https://doi.org/10.1257/089533005775196732>.

Goertzel, Ted. 1994. "Belief in Conspiracy Theories." *Political Psychology* 15:731–42.

<https://doi.org/10.2307/3791630>.

Javeline, Debra. 1999. "Response Effects in Polite Cultures: A Test of Acquiescence in Kazakhstan." *Public Opinion Quarterly* 63:1–28. <https://doi.org/10.1086/297701>.

- Jolley, Daniel, and Karen M. Douglas. 2014. "The Social Consequences of Conspiracism: Exposure to Conspiracy Theories Decreases Intentions to Engage in Politics and to Reduce One's Carbon Footprint." *British Journal of Psychology* 105:35–56.
<https://doi.org/10.1111/bjop.12018>.
- Jolley, Daniel, Karen M. Douglas, and Robbie M. Sutton. 2018. "Blaming a Few Bad Apples to Save a Threatened Barrel: The System-Justifying Function of Conspiracy Theories." *Political Psychology* 39:465–78. <https://doi.org/10.1111/pops.12404>.
- Knauper, Barbel, Robert F. Belli, Daniel H. Hill, and A Regula Herzog. 1997. "Question Difficulty and Respondents' Cognitive Ability: The Effect on Data Quality." *Journal of Official Statistics* 13:181–99.
- Knowles, Eric D., and Christopher A. Condon. 1999. "Why People Say 'Yes': A Dual-Process Theory of Acquiescence." *Journal of Personality and Social Psychology* 77:379–86.
- Krosnick, Jon A. 1991. "Response Strategies for Coping with the Cognitive Demands of Attitude Measures in Surveys." *Applied Cognitive Psychology* 5:213–36.
<https://doi.org/10.1002/acp.2350050305>.
- Krosnick, Jon A., Allyson L. Holbrook, Matthew K. Berent, Richard T. Carson, W. Michael Hanemann, Raymond J. Kopp, Robert Cameron Mitchell, et al. 2001. "The Impact of 'No Opinion' Response Options on Data Quality." *Public Opinion Quarterly* 66:371–403.
<https://doi.org/10.1086/341394>.
- Krosnick, Jon, and Stanley Presser. 2010. "Question and Questionnaire Design." In *Handbook of Survey Research*, edited by P.V. Marsden and J.D. Wright, 2nd ed., 263–314. Emerald.
- Leman, Patrick. 2007. "The Born Conspiracy." *New Scientist* 195:35–37.
[https://doi.org/10.1016/S0262-4079\(07\)61774-6](https://doi.org/10.1016/S0262-4079(07)61774-6).

- Malhotra, Neil, Jon A. Krosnick, and Randall K. Thomas. 2009. "Optimal Design of Branching Questions to Measure Bipolar Constructs." *Public Opinion Quarterly* 73:304–24.
<https://doi.org/10.1093/poq/nfp023>.
- Miller, Joanne M., Kyle L. Saunders, and Christina E. Farhart. 2016. "Conspiracy Endorsement as Motivated Reasoning: The Moderating Roles of Political Knowledge and Trust." *American Journal of Political Science* 60:824–44. <https://doi.org/10.1111/ajps.12234>.
- Miller, Shane. 2002. "Conspiracy Theories: Public Arguments as Coded Social Critiques: A Rhetorical Analysis of the Twa Flight 800 Conspiracy Theories." *Argumentation and Advocacy* 39:40–56. <https://doi.org/10.1080/00028533.2002.11821576>.
- Mullinix, Kevin J., Thomas J. Leeper, James N. Druckman, and Jeremy Freese. 2015. "The Generalizability of Survey Experiments." *Journal of Experimental Political Science* 2:109–38. <https://doi.org/10.1017/XPS.2015.19>.
- Oliver, J. Eric, and Thomas Wood. 2014a. "Medical Conspiracy Theories and Health Behaviors in the United States." *JAMA Internal Medicine* 174:817–18.
<https://doi.org/10.1001/jamainternmed.2014.190>.
- Oliver, J. Eric, and Thomas J. Wood. 2014b. "Conspiracy Theories and the Paranoid Style(s) of Mass Opinion." *American Journal of Political Science* 58:952–66.
<https://doi.org/10.1111/ajps.12084>.
- Pasek, Josh, Tobias H. Stark, Jon A. Krosnick, and Trevor Tompson. 2015. "What Motivates a Conspiracy Theory? Birther Beliefs, Partisanship, Liberal-Conservative Ideology, and Anti-Black Attitudes." *Electoral Studies* 40:482–89.
<https://doi.org/10.1016/J.ELECTSTUD.2014.09.009>.

- Presser, Stanley, and Howard Schuman. 1980. "The Measurement of a Middle Position in Attitude Surveys." *Public Opinion Quarterly* 44:70–85. <https://doi.org/10.1086/268567>.
- Prior, Markus. 2009. "The Immensely Inflated News Audience: Assessing Bias in Self-Reported News Exposure." *Public Opinion Quarterly* 73:130–43. <https://doi.org/10.1093/poq/nfp002>.
- Prooijen, Jan-Willem van. 2017. "Why Education Predicts Decreased Belief in Conspiracy Theories." *Applied Cognitive Psychology* 31:50–58. <https://doi.org/10.1002/acp.3301>.
- Saris, Willem E., Melanie Revilla, Jon A. Krosnick, and Eric M. Shaeffer. 2010. "Comparing Questions with Agree/Disagree Response Options to Questions with Item-Specific Response Options." *Survey Research Methods* 4:61–79.
- Saunders, Kyle L. 2017. "The Impact of Elite Frames and Motivated Reasoning on Beliefs in a Global Warming Conspiracy: The Promise and Limits of Trust." *Research & Politics* 4 (3):205316801771760. <https://doi.org/10.1177/2053168017717602>.
- Schuman, Howard H., and Stanley Presser. 1981. *Questions and Answers in Attitude Surveys: Experiments on Question Form, Wording, and Context*. San Diego, CA: Academic Press.
- Simmons, Joseph P., Leif D. Nelson, and Uri Simonsohn. 2011. "False-Positive Psychology: Undisclosed Flexibility in Data Collection and Analysis Allows Presenting Anything as Significant." *Psychological Science* 22:1359–66. <https://doi.org/10.1177/0956797611417632>.
- Sirota, Miroslav, and Marie Juanchich. 2018. "Effect of Response Format on Cognitive Reflection: Validating a Two- and Four-Option Multiple Choice Question Version of the Cognitive Reflection Test." *Behavior Research Methods* 50:2511–22. <https://doi.org/10.3758/s13428-018-1029-4>.

Smallpage, Steven M., Adam M. Enders, and Joseph E. Uscinski. 2017. "The Partisan Contours of Conspiracy Theory Beliefs." *Research & Politics* 4 (4):205316801774655.

<https://doi.org/10.1177/2053168017746554>.

Smyth, J. D., Don A. Dillman, Leah Melani Christian, and Michael J. Stern. 2006. "Comparing Check-All and Forced-Choice Question Formats in Web Surveys." *Public Opinion Quarterly* 70:66–77.

<https://doi.org/10.1093/poq/nfj007>.

Ståhl, Tomas, and Jan-Willem van Prooijen. 2018. "Epistemic Rationality: Skepticism toward Unfounded Beliefs Requires Sufficient Cognitive Ability and Motivation to Be Rational."

Personality and Individual Differences 122:155–63.

<https://doi.org/10.1016/J.PAID.2017.10.026>.

Sturgis, Patrick, Caroline Roberts, and Patten Smith. 2014. "Middle Alternatives Revisited: How the Neither/nor Response Acts as a Way of Saying 'I Don't Know'?" *Sociological Methods and Research* 43:15–38.

<https://doi.org/10.1177/0049124112452527>.

Swami, Viren, Rebecca Coles, Stefan Stieger, Jakob Pietschnig, Adrian Furnham, Sherry Rehim, and Martin Voracek. 2011. "Conspiracist Ideation in Britain and Austria: Evidence of a Monological Belief System and Associations between Individual Psychological

Differences and Real-World and Fictitious Conspiracy Theories." *British Journal of Psychology* 102:443–63.

<https://doi.org/10.1111/j.2044-8295.2010.02004.x>.

Swami, Viren, and Adrian Furnham. 2012. "Political Paranoia and Conspiracy Theories." In

Power, Politics, and Paranoia: Why People Are Suspicious About Their Leaders, edited

by Jan-Willem van Prooijen and Paul A.M. van Lange, 218–36. Cambridge: Cambridge

University Press. <https://doi.org/https://doi.org/10.1017/CBO9781139565417.016>.

Swami, Viren, Martin Voracek, Stefan Stieger, Ulrich S. Tran, and Adrian Furnham. 2014.

“Analytic Thinking Reduces Belief in Conspiracy Theories.” *Cognition* 133:572–85.

<https://doi.org/10.1016/J.COGNITION.2014.08.006>.

Tingley, Dustin, and Gernot Wagner. 2017. “Solar Geoengineering and the Chemtrails

Conspiracy on Social Media.” *Palgrave Communications* 3:12.

<https://doi.org/10.1057/s41599-017-0014-3>.

Toplak, Maggie E., Richard F. West, and Keith E. Stanovich. 2014. “Assessing Miserly

Information Processing: An Expansion of the Cognitive Reflection Test.” *Thinking and*

Reasoning 20:147–68. <https://doi.org/10.1080/13546783.2013.844729>.

Uscinski, Joseph E., Casey Klofstad, and Matthew D. Atkinson. 2016. “What Drives

Conspiratorial Beliefs? The Role of Informational Cues and Predispositions.” *Political*

Research Quarterly 69:57–71. <https://doi.org/10.1177/1065912915621621>.

Whitson, J. A., and A. D. Galinsky. 2008. “Lacking Control Increases Illusory Pattern

Perception.” *Science* 322:115–17. <https://doi.org/10.1126/science.1159845>.

Wood, Michael J. 2016. “Some Dare Call It Conspiracy: Labeling Something a Conspiracy

Theory Does Not Reduce Belief in It.” *Political Psychology* 37:695–705.

<https://doi.org/10.1111/pops.12285>.

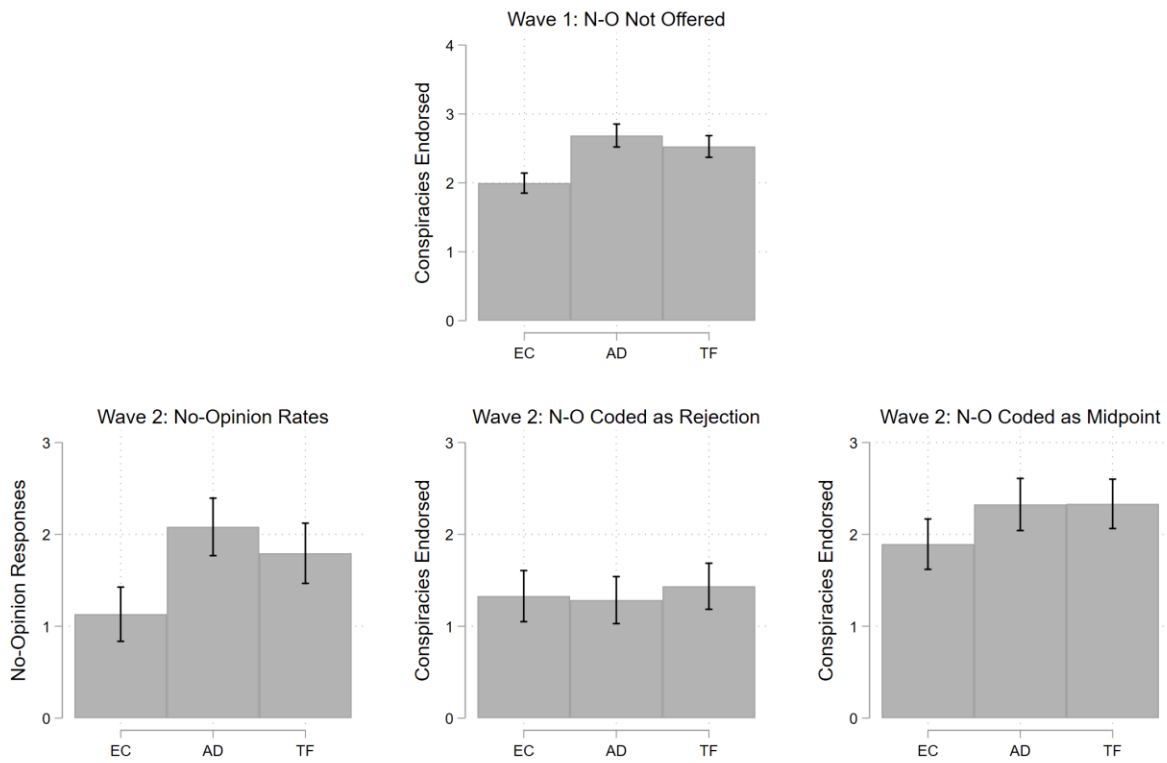


Figure 1. No-Opinion Rates and Conspiracy Beliefs by Question Format (Study 1).

Note: EC = explicit choice. AD = agree/disagree. TF = true/false. N-O = no-opinion. Top panel shows mean conspiracy endorsement by condition in Wave 1. Bottom left panel shows mean number of no-opinion responses by condition in Wave 2. Bottom right two panels show mean conspiracy endorsement by condition in Wave 2. Error bars are 95% confidence intervals.

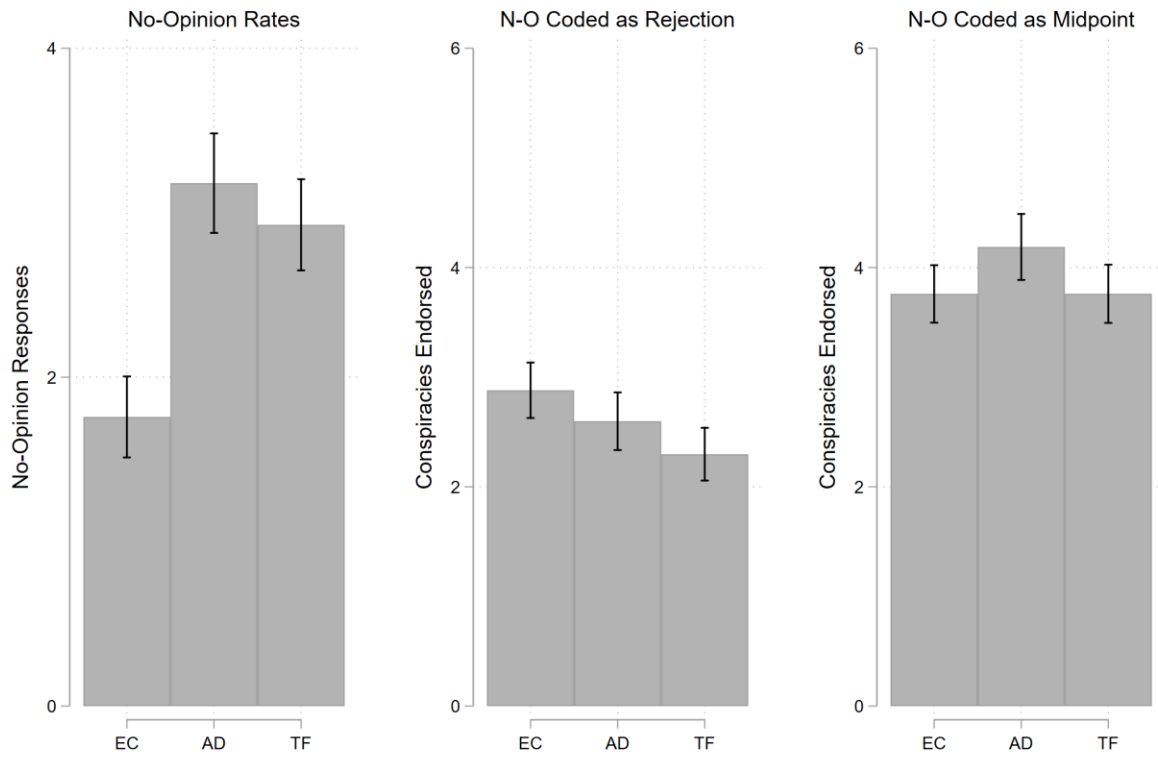


Figure 2. No-Opinion Rates and Conspiracy Beliefs by Question Format (Study 2).

Note: EC = explicit choice. AD = agree/disagree. TF = true/false. N-O = no-opinion. Left panel shows mean number of no-opinion responses by condition. Right two panels show mean conspiracy endorsement by condition. Error bars are 95% confidence intervals.

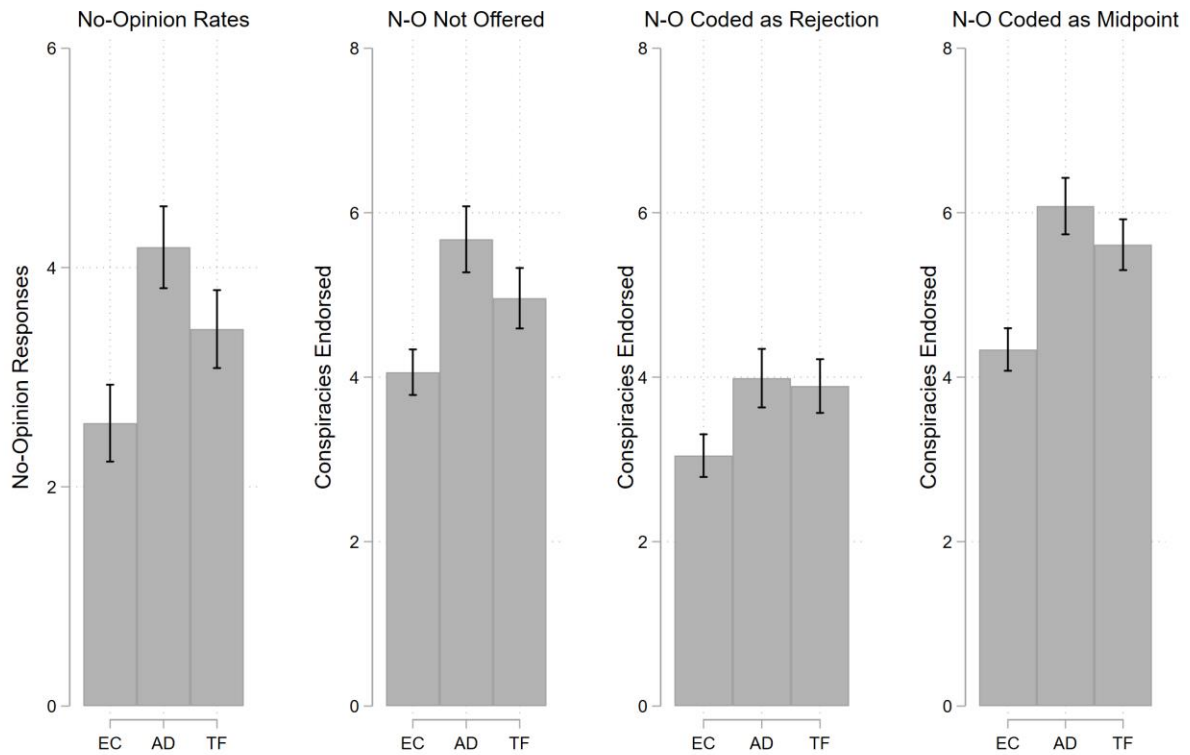


Figure 3. No-Opinion Rates and Conspiracy Beliefs by Question Format (Study 3).

Note: EC = explicit choice. AD = agree/disagree. TF = true/false. N-O = no-opinion. Leftmost panel shows mean number of no-opinion response. Three right panels show mean number of conspiracy endorsements. Error bars are 95% confidence intervals.

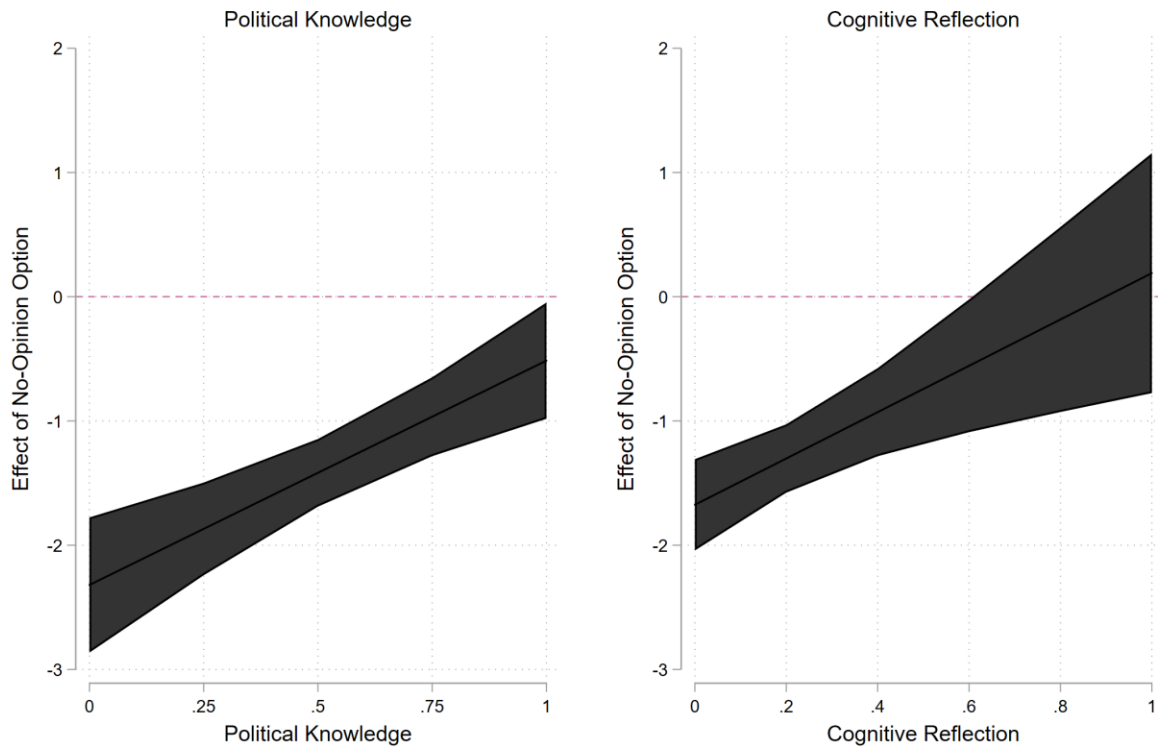


Figure 4. Effect of No-Opinion Option on Conspiracy Endorsement.

Note: figure shows the effect of providing a no-opinion option on conspiracy endorsement rates across levels of political knowledge (left panel) and cognitive reflection (right panel). See Appendix for model details.

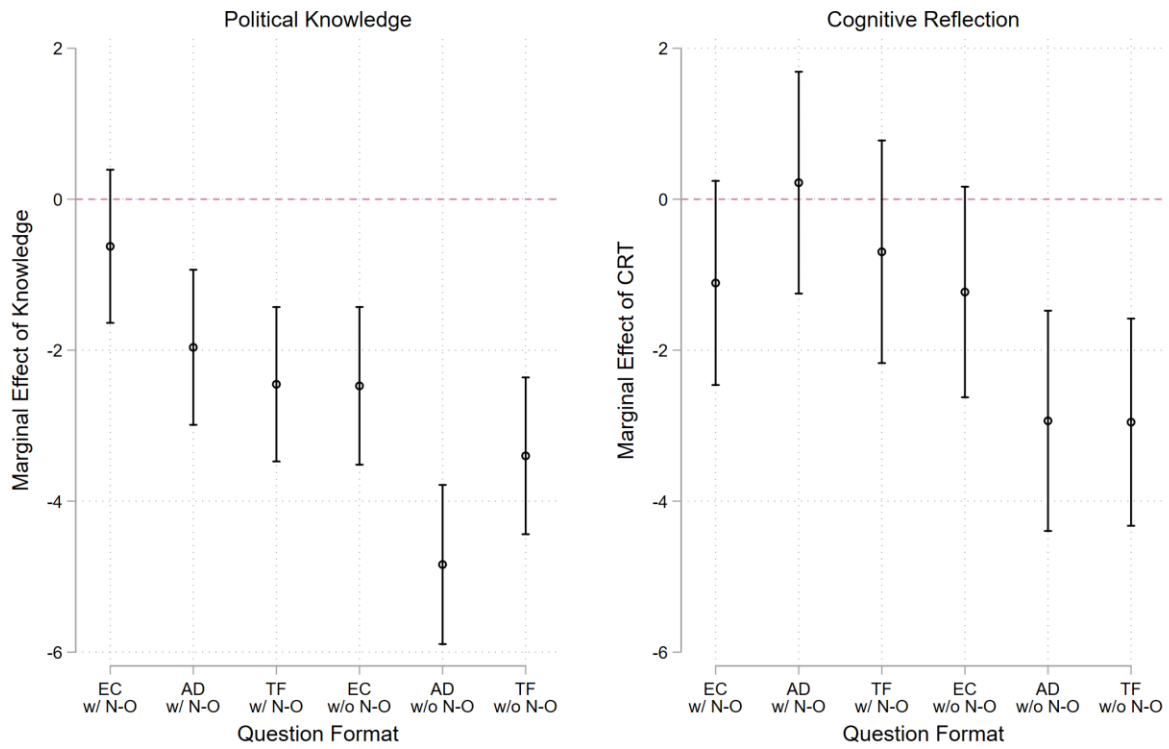


Figure 5. Effects of Knowledge and CRT on Conspiracy Endorsement by Question Format. Note: figure shows estimated effects of political knowledge (left panel) and cognitive reflection (right panel) on conspiracy belief by question format. EC = explicit choice. AD = agree/disagree. TF = true/false. N-O = no-opinion. See Appendix for model details.

Table 1. Measurement and Coding Practices in Seven Journals, 1990-2018

Provision of no-opinion response option	N	%
<i>No-opinion option not provided</i>	11	44%
<i>No-opinion option provided</i>	14	56%
Total	25	100%
Type of no-opinion option	N	%
<i>Midpoint</i>	5	36%
<i>Explicit DK</i>	8	57%
<i>Volunteer DK</i>	1	7%
Total	14	100%
Coding of no-opinion response option	N	%
<i>Acceptance</i>	5	36%
<i>Midpoint</i>	5	36%
<i>Rejection</i>	1	7%
<i>Insufficient Information</i>	3	21%
Total	14	100%

Table 2. Conspiratorial and Conventional Explanations of 14 Events

Topic	Conspiratorial explanation Conventional explanation	Citations
Princess Diana	<p>Princess Diana’s death was planned by Prince Philip, Prince Charles and MI6 to prevent her marriage to Dodi Fayed, a Muslim, because such an engagement in the British Royal Family would not be tolerated.</p> <p>Princess Diana’s death was caused by a car accident. While the paparazzi may have played a role in the accident, the driver was intoxicated and using prescription drugs.</p>	(Jolley and Douglas 2014)
Climate Change	<p>Climate change is being exaggerated by foreign countries that are doing little to prevent climate change. These countries are trying to get the U.S. to adopt costly policies that will harm the American economy and businesses.</p> <p>Many foreign countries are concerned about the possible effects of climate change and are adopting costly policies to prevent these effects. These countries have also been trying to encourage the United States to adopt these policies.</p>	(Miller, Saunders, and Farhart 2016; Saunders 2017; Smallpage, Enders, and Uscinski 2017)
MLK	<p>Dr. Martin Luther King Jr. was allegedly killed by James Earl Ray, but his killing was actually part of an effort by the government. Loyd Jowers, a local businessman, testified to working with government officials to carry out the assassination.</p> <p>Dr. Martin Luther King Jr. was killed by James Earl Ray, a fugitive from a penitentiary. The Department of Justice conducted a follow-up investigation in 2000 and confirmed that James Earl Ray was the sole actor in King’s assassination.</p>	(Goertzel 1994)
Iraq War	<p>The 2003 Iraq War was an effort by the U.S. to remove Saddam Hussein from power in order to take control of an oil-rich country. The war was motivated by the desire to bring down oil prices and help the American economy.</p> <p>The 2003 Iraq War was an effort by the U.S. to remove Saddam Hussein from power because U.S. officials believed that Hussein was building weapons of mass destruction and sponsoring terrorism.</p>	(Oliver and Wood 2014b; Smallpage, Enders, and Uscinski 2017)
Obama Birth	Former President Barack Obama was born in Kenya in 1961. Given that he was not born in the U.S., he was	(ANES 2014; Miller, Saunders,

	<p>ineligible to run for president of the United States and his presidency was illegitimate.</p> <p>Former President Barack Obama was born in Hawaii in 1961. Hawaii became a state two years earlier, in 1959, making Obama a U.S. citizen and thus eligible to run for president of the United States.</p>	<p>and Farhart 2016; Smallpage, Enders, and Uscinski 2017)</p>
Russia-Trump	<p>Prior to the election, high-level associates of President Trump communicated with Russian operatives in an attempt to coordinate the release of information damaging to Hillary Clinton's campaign.</p> <p>Prior to the election, high-level associates of President Trump communicated with Russian operatives in an attempt to establish a good relationship between Russia and the incoming Trump administration.</p>	<p>(Albertson and Guiler 2018)</p>
Vaccines	<p>Vaccines do not actually keep people healthy, but they are promoted by doctors and insurance providers as a way to make money.</p> <p>Vaccines are highly effective at preventing disease and they reduce health costs by preventing many other expensive treatments.</p>	<p>(Oliver and Wood 2014b)</p>
Bush-9/11	<p>The Bush administration knew about the 9/11 attacks ahead of time but took no action to stop them because they wanted to go to war in the Middle East.</p> <p>The Bush administration and intelligence community were unprepared for the 9/11 attacks and did not pay close enough attention to the warning signs.</p>	<p>(ANES 2014; Miller, Saunders, and Farhart 2016; Oliver and Wood 2014b; Smallpage, Enders, and Uscinski 2017)</p>
Hurricane Katrina	<p>The federal government intentionally breached the flood levees in New Orleans during Hurricane Katrina so that poor neighborhoods would be flooded and middle-class neighborhoods would be spared.</p> <p>The flood levees in New Orleans were breached during Hurricane Katrina because of flawed engineering and collapsed under the force of the water. Up to 80% of the city ended up being flooded.</p>	<p>(ANES 2014; Miller, Saunders, and Farhart 2016; Smallpage, Enders, and Uscinski 2017)</p>
Pearl Harbor	<p>Prior to Pearl Harbor, President Roosevelt and other U.S. officials were warned that the Pearl Harbor attack was going to occur, but they allowed the Japanese to attack in order to bring America into World War II.</p> <p>Prior to Pearl Harbor, President Roosevelt was warned of the likelihood of war with Japan, but the warning focused</p>	<p>(Allcott and Gentzkow 2017)</p>

	on other regions and did not specifically predict an attack on Pearl Harbor.	
Water Fluoridation	<p>Public water fluoridation is a way for chemical companies to dump the dangerous byproducts of phosphate mines into the environment.</p> <p>Public water fluoridation is a way to prevent tooth decay by adding a small amount of a naturally-occurring mineral to our drinking water.</p>	(Oliver and Wood 2014b)
Trump wiretap	<p>The FBI wiretapped President Donald Trump’s offices in Trump Tower during the 2016 presidential campaign. The wiretap was ordered by President Obama in an attempt to discredit Donald Trump.</p> <p>The FBI wiretapped Trump Tower two years before Trump announced his presidential campaign, although its target was not the building’s owner. The bureau spied on a Russian crime organization operating on the tower’s 63rd floor.</p>	N/A
Oklahoma Bombing	<p>President Bill Clinton had knowledge about the 1995 Oklahoma City bombing before it occurred and allowed Timothy McVeigh and Terry Nichols to carry it out so that he could enact anti-terrorism legislation.</p> <p>The 1995 Oklahoma City bombing caught law enforcement officials by surprise because it was carried out by only two men – Timothy McVeigh and Terry Nichols. President Clinton enacted anti-terrorism legislation to help prevent future attacks.</p>	(Allcott and Gentzkow 2017)
Vapor Trails	<p>Vapor trails left by aircraft are chemical agents deliberately sprayed in a secret program directed by government officials.</p> <p>Vapor trails left by aircraft are the result of normal emissions of water vapor from jet engines at high altitudes.</p>	(Oliver and Wood 2014b; Smallpage, Enders, and Uscinski 2017; Tingley and Wagner 2017)

Table 3. Conspiracy Endorsement Rates

	No-Opinion Provided			No-Opinion Not Provided		
	EC-NO	AD-NO	TF-NO	EC	AD	TF
Princess Diana	20%	24%	21%	25%	38%	31%
MLK	24%	29%	25%	32%	45%	39%
Iraq War	28%	42%	46%	34%	56%	52%
Climate Change	24%	28%	29%	31%	41%	36%
Birther	23%	30%	28%	27%	35%	30%
Vaccines	14%	21%	24%	19%	31%	26%
Trump-Russia	35%	48%	46%	53%	62%	59%
Sept. 11	20%	29%	28%	27%	42%	38%
Hurricane Katrina	12%	21%	18%	18%	33%	25%
Pearl Harbor	22%	29%	28%	26%	41%	41%
Fluoridation	24%	27%	24%	32%	40%	35%
Trump Wiretap	30%	31%	32%	37%	40%	38%
Oklahoma City	12%	18%	19%	21%	30%	24%
Vapor Trails	18%	22%	22%	25%	34%	28%
Average	22%	28%	28%	29%	41%	36%
Observations	415	406	406	400	414	400

Note: table shows the percentage of respondents endorsing each conspiracy, coding no-opinion responses as rejections.