

Don't Just Ask Me for Facts!

Measuring Political Sophistication using Open-Ended Responses

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Abstract

There is a broad consensus among scholars of political science and public opinion that the American electorate is not well informed about politics. However, there is no agreement in the discipline about *how to measure* how little citizens actually know. While many studies rely on simple factual political knowledge questions to assess political sophistication, others have criticized this approach from methodological and theoretical perspectives, claiming it does not provide a valid measure of the concept of interest. We propose a new measure of political sophistication based on open-ended survey responses about individual political attitudes and preferences. Using conventional political knowledge metrics and open-ended responses from the 2012 American National Election Study (ANES), we consider word count, response diversity, topic diversity, and a novel aggregate weighted measure to show that ...

Keywords: political sophistication, measurement, open-ended responses, structural topic models

Word Count: ...

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1 Introduction

One of the fundamental concepts in the study of political attitudes and behavior is political sophistication and knowledge (Converse, 1964; Delli Carpini and Keeter, 1996). While most scholars emphasize how little people know about politics, the question of how to assess individual knowledge has been subject to re-occurring scholarly debate (e.g. Mondak, 2000; Mondak and Davis, 2001; Sturgis, Allum, and Smith, 2008; DeBell, 2013; Pietryka and MacIntosh, 2013). Many analyses exclusively rely on individual levels of political knowledge measured by correctness of factual knowledge questions. However, recent research points to important differences between types of knowledge questions that have previously been disregarded (Barabas et al., 2014), such as distinguishing between policy-specific and general knowledge questions. Furthermore, scholars argue that factual political knowledge as measured in many surveys may not be theoretically relevant (Lupia, 2006, e.g., the question writer and respondent have differing world-views). Rather, the conceptualization of political sophistication should take into account how people structure their attitudes and beliefs (e.g. Luskin, 1987). As such, measuring sophistication solely based on answers to political trivia may misclassify respondents who cannot recall these facts, but do indeed have a coherent cognitive framework of political ideas.

We propose an alternative measure of political sophistication based on an individual's responses to open-ended questions about their attitudes towards major parties and presidential candidates. We make inferences about the respondents' level of political sophistication and belief constraints by focusing on *how* respondents describe their preferences and beliefs. More specifically, we consider the diversity in topics raised by respondents. Topic diversity will be measured using structural topic models (Roberts et al., 2014). Furthermore, we consider additional characteristics of individual open-ended responses, such as response length and diversity between opinions. Our aim is to assess the degree to which political attitudes are structured and expressed in a more complex manner than discernible from correctness on a factual questionnaire. We suspect that the diversity in topics a respondent discusses, or the detail with which they speak about the topics they mention, will covary with other political knowledge measures. We therefore compare the text-based measures to common factual knowledge items as well as the interviewer assessment of the respondent's political knowledge as benchmarks for political sophistication. This text based analysis will likely be conceptually closer to the actual structure and constraint of political belief

systems (see for example Tetlock, 1983; Luskin, 1987) than fact based knowledge items can capture.

Overall, we hope to show that our measure of political sophistication can provide novel insights compared to conventional knowledge measures. Furthermore, developing valid measures of political sophistication based on open-ended responses will provide new opportunities for comparisons of political knowledge across time and contexts.

2 Political Knowledge and Sophistication

In his seminal study, Converse (1964) examined the degree to which citizens hold constrained belief systems about politics. In the paper, belief systems are defined as “a configuration of ideas and attitudes in which the elements are bound together by some form of constraint or functional interdependence” (Converse, 1964, 207). The analyses showed that the majority of the electorate does not hold structured and constrained belief systems, understand abstract ideological concepts, or hold stable issue positions.

This pessimistic view regarding the competence of the US electorate has been supported in multiple subsequent analyses. Delli Carpini and Keeter (1996) showed that large parts of the American electorate are not sufficiently informed about politics. Furthermore, there are systematic differences in political attitudes and behavior between citizens who are well informed compared to those who are not. Such a finding is problematic from a normative perspective, since it indicates that differences in levels of information can result in unequal representation in the political system (see also Althaus, 1998; Kuklinski et al., 2000; Gilens, 2001). However, rather than relying on the degree to which individuals hold constrained belief systems, Delli Carpini and Keeter (1996), conceptualized knowledge as the awareness of key democratic values, which was measured using factual knowledge questions (see also Carpini and Keeter, 1993). A broad range of studies focused on similar factual knowledge measures as indicators of sophistication (e.g. Zaller, 1991; Jacoby, 1995; Gomez and Wilson, 2001). Most prominently, Zaller (1992) argued for the measurement of political awareness using tests of neutral factual information about politics, since they “more directly than any of the alternative measures, capture what has actually gotten into peoples minds” (Zaller, 1992, 21). However, other research casts doubt on this assertion, both from methodological as well as theoretical perspectives.

Methodologically, many studies raised issues related to the validity of factual knowledge questions.

One fundamental problem discussed in the literature are potential biases due to guessing (Mondak, 2000, 2001; Mondak and Davis, 2001; Miller and Orr, 2008). Knowledge items that offer a “Don’t Know” option essentially convolute two very distinct concepts: the individual information level as well as the propensity to guess. Based on this argument, Mondak and Anderson (2004) showed that conventional knowledge measures overestimated the gender gap in political knowledge due to the fact that male respondents are more likely to take a guess if they are not fully informed (see also Pietryka and MacIntosh, 2013, for a more recent discussion of differential item functioning as an explanation for knowledge gaps). The conclusions drawn from these studies were to rely on closed rather than open-ended knowledge questions and omitting “Don’t Know” response options (but see Sturgis, Allum, and Smith, 2008; Luskin and Bullock, 2011). Other scholars further criticized open-ended factual knowledge questions such as those administered in the American National Election Study due to problematic coding rules, which do not accurately capture partial knowledge (Krosnick et al., 2008; Gibson and Caldeira, 2009; DeBell, 2013).

Focusing exclusively on factual political knowledge has also been criticized on theoretical grounds. For example, Lupia (2006) argued that the information asked for in the item batteries has no clear relevance for individual political participation. Instead, researchers should concentrate on knowledge and heuristics that directly help citizens to make competent political decisions (see also Lupia, 1994). Responses to factual knowledge questions have further been shown to be conditional on the respondents’ motivation, their partisanship, as well as monetary incentives in the survey (Prior and Lupia, 2008; Bullock et al., 2015; Prior, Sood, and Khanna, 2015). Conventional items also differ with regard to the specific dimension of political knowledge they measure (Barabas et al., 2014) and ignore important aspects such as visual cues (Prior, 2014).

Overall, the studies discussed so far suggest that the conventional item batteries have problematic measurement properties. More importantly, however, some authors raised doubts whether factual political knowledge actually captures the phenomena that are ultimately most interesting for scholars of public opinion. Converse (1964) initially discussed the level of constraint in political beliefs rather than isolated pieces of factual information about the political system. Other scholars emphasized similar conceptualizations of political sophistication. Tetlock (1983), for example, used the term *integrative complexity* to describe the variety and integration of considerations related to an issue. It is important to note that here, sophistication is not based on the content (or accuracy) of related considerations but rather on its

structure. Luskin (1987) also defined political sophistication based on the structure of individual belief systems. More specifically, the author argues that belief systems can vary on three separate dimensions: (1) their *size* – i.e. the number of cognitions, (2) their *range* – i.e. the dispersion of cognition over categories, and (3) their *constraint* – i.e. the extent to which cognitions are interconnected. Political sophistication, in turn, is seen as the conjunction of these dimensions: “A person is politically sophisticated to the extent to which his or her [political belief system] is large, wide-ranging, and highly constrained.” (Luskin, 1987, 860).

Such a conceptualization of political sophistication seems theoretically more interesting and useful than simple tests of factual information. However, why does such a large body of literature in political science and public opinion then only focus on knowledge questions? One answer to this question is provided in the early study by Converse (1964, 206), who stated: “what is important to study cannot be measured and that what can be measured is not important to study.” Factual political knowledge is much easier to assess (albeit not perfectly) than the structure of political belief systems. Indeed, Tetlock (1983) had to rely on manual coding of policy statements of US senators in order to assess their degree of integrative complexity. Such manual coding procedures, however, become increasingly infeasible with large amounts of text data (such as in large surveys). Advances in automated text analyses, on the other hand, provide us with the necessary tools to derive a measure of political sophistication that captures the theoretical arguments put forward by Converse (1964), Tetlock (1983) and Luskin (1987), without the necessity of human coders. In the following, we will derive and explore such a measure based on open-ended survey responses.

3 Measurement Approach

We propose that the the dimensions laid out by Luskin (1987) — size, range, and constraint of political belief systems — can be measured by directly examining how individuals describe their political attitudes and beliefs. More specifically, we will consider individual responses to a set of open-ended questions where respondents were asked to describe aspects that they liked and disliked about both major parties and presidential candidates before the 2012 US election. Considering likes and dislikes separately, there are a total number of 8 open-ended responses where individuals describe their beliefs and attitudes

towards political actors. Table 1 summarizes how different characteristics of open-ended responses can be matched to the aspects of political sophistication discussed previously.

Dimension of political belief system	Characteristic of open-ended response
Size (number of cognitions)	Overall length of responses
Range (dispersion of cognitions over categories)	Diversity in topics raised in responses
Constraint (interconnectedness of cognitions)	Diversity in response length between items

Table 1: Aspects of political sophistication and its measure in open-ended responses.

The size of the political belief system can simply be captured as the overall length of individual responses. If people possess a larger number of considerations related to political parties and candidates, then this should be reflected in the overall collection of their responses describing their attitudes and beliefs.

The range of cognitions over categories could be measured as the diversity in topics raised in individual responses. If individuals hold more diverse cognitions towards political actors, we should observe that they address a wider range of topics in their responses, rather than focusing on an isolated issue to describe their preferences.

The last dimension, the degree of constraint or interconnectedness of cognitions, is more difficult to capture in an automated way based on characteristics of an open-ended response. While we cannot directly measure the interconnectedness of cognitions, we argue that the diversity in response length between items could be used as a possible proxy. In order to see why this is the case, consider two hypothetical individuals who possess a belief system of similar size and range. Accordingly, we would expect that their open-ended responses should be of similar overall length and have a comparable degree of diversity in topics. Now, suppose that for one individual, the belief system is highly interconnected, and for the other individual it is not. Holding the overall length and topic diversity of their set of responses constant, higher interconnectedness allows individuals to spread their response topics more homogeneously across items. In other words, if considerations were not interconnected, then responding to likes as well as dislikes (for party/candidates of in/out-party), would require an increase in the overall length and diversity of the response. As such, distributing responses across different items can be seen as a proxy for interconnectedness of cognitions.

Of course, the measurement strategy derived here makes strong implicit assumptions about the

nature of political belief systems. However, the sole purpose of this short discussion was to suggest potential links between the theoretical construct and measurable characteristics of open-ended responses. Ultimately, it is an empirical question, as to whether these characteristics provide valid measures of political sophistication. Before we turn to the issue of validation, we will discuss the data and methods used in the analyses in more detail.

4 Data and Methods

We use survey data from the 2012 American National Election Study in order to demonstrate and validate our measure of political sophistication. The dataset consists of 5914 adults (2054 of which participated in face-to-face interviews while the remaining 3860 participated in a representative online survey). While both samples differ slightly with regards to the inclusion of some specific variables, we will mostly rely on the pooled dataset purpose of our analysis.

The knowledge measure is based on open-ended questions in which respondents were asked to list anything in particular that they like/dislike about the Democratic/Republican party as well as anything that might make them vote/not vote for either of the Presidential candidates and were probed by the interviewer asking “anything else?” until the respondent answered no. All open-ended responses were pre-processed by correcting spelling errors using an implementation of the Aspell spell checking algorithm in R (www.aspell.net), and deleting individuals who responded in Spanish (228 individuals).

One way to measure this may be to consider the number of items the respondent chooses to answer. However, in the ANES data, respondents who took the survey online were far more likely to enter an answer for all questions than respondents who complete the survey with an interviewer. Therefore, we to look at the length of the collection of responses for each individual, rather than the number of items answered.

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5 Descriptive Results

6 Validation Performance

Ideas for evaluation:

- replicate common findings, e.g. gender gap in political knowledge (e.g. Barabas et al., 2014)
- Increase in consistency b/w policy attitudes (e.g. Prior, 2014)

7 Discussion and Conclusion

References

- Althaus, Scott L. 1998. "Information effects in collective preferences." *American Political Science Review* 92 (3): 545-558.
- Barabas, Jason, Jennifer Jerit, William Pollock, and Carlisle Rainey. 2014. "The Question(s) of Political Knowledge." *American Political Science Review* 108 (04): 840-855.
- Bullock, John G, Alan S Gerber, Seth J Hill, and Gregory A Huber. 2015. "Partisan Bias in Factual Beliefs about Politics." *Quarterly Journal of Political Science* 10 (4): 519-578.
- Carpini, Michael X Delli, and Scott Keeter. 1993. "Measuring political knowledge: Putting first things first." *American Journal of Political Science* 37 (4): 1179-1206.
- Converse, Philip E. 1964. "The Nature of Belief Systems in Mass Publics." In *Ideology and Discontent*, ed. David E. Apter. New York: Free Press.
- DeBell, Matthew. 2013. "Harder than it looks: Coding political knowledge on the ANES." *Political Analysis* 21 (4): 393-406.
- Delli Carpini, Michael X., and Scott Keeter. 1996. *What Americans Know about Politics and Why It Matters*. New Haven, London: Yale University Press.
- Gibson, James L, and Gregory A Caldeira. 2009. "Knowing the Supreme Court? A reconsideration of public ignorance of the high court." *The Journal of Politics* 71 (02): 429-441.
- Gilens, Martin. 2001. "Political ignorance and collective policy preferences." *American Political Science Association* 95 (02): 379-396.
- Gomez, B.T., and J.M. Wilson. 2001. "Political sophistication and economic voting in the American electorate: A theory of heterogeneous attribution." *American Journal of Political Science* 45 (4): 899-914.
- Jacoby, William G. 1995. "The Structure of Ideological Thinking in the American Electorate." *American Journal of Political Science* 39 (2): 314-335.
- Krosnick, Jon A, Arthur Lupia, Matthew DeBell, and Darrell Donakowski. 2008. Problems with ANES questions measuring political knowledge. Technical report Ann Arbor, MI: American National Election Studies Report.
- Kuklinski, James H, Paul J Quirk, Jennifer Jerit, David Schwieder, and Robert F Rich. 2000. "Misinformation and the currency of democratic citizenship." *Journal of Politics* 62 (3): 790-816.
- Lupia, Arthur. 1994. "Shortcuts Versus Encyclopedias: Information and Voting Behavior in California Insurance Reform Elections." *American Political Science Review* 88 (1): 63-76.
- Lupia, Arthur. 2006. "How elitism undermines the study of voter competence." *Critical Review* 18 (1-3): 217-232.
- Luskin, Robert C. 1987. "Measuring political sophistication." *American Journal of Political Science*: 856-899.
- Luskin, Robert C, and John G Bullock. 2011. "Dont know means dont know: DK responses and the publics level of political knowledge." *The Journal of Politics* 73 (02): 547-557.
- Miller, Melissa K, and Shannon K Orr. 2008. "Experimenting with a Third Way in political knowledge estimation." *Public Opinion Quarterly* 72 (4): 768-780.
- Mondak, Jeffery J. 2000. "Reconsidering the measurement of political knowledge." *Political Analysis* 8 (1): 57-82.
- Mondak, Jeffery J, and Belinda Creel Davis. 2001. "Asked and answered: Knowledge levels when we will not take 'don't know' for an answer." *Political Behavior* 23 (3): 199-224.
- Mondak, Jeffery J, and Mary R Anderson. 2004. "The knowledge gap: A reexamination of gender-based differences in political knowledge." *Journal of Politics* 66 (2): 492-512.

- Mondak, Jeffrey J. 2001. "Developing valid knowledge scales." *American Journal of Political Science* 45 (1): 224–238.
- Pietryka, Matthew T, and Randall C MacIntosh. 2013. "An Analysis of ANES Items and Their Use in the Construction of Political Knowledge Scales." *Political Analysis* 21 (4): 407–429.
- Prior, Markus. 2014. "Visual political knowledge: A different road to competence?" *Journal of Politics* 76 (1): 41–57.
- Prior, Markus, and Arthur Lupia. 2008. "Money, time, and political knowledge: Distinguishing quick recall and political learning skills." *American Journal of Political Science* 52 (1): 169–183.
- Prior, Markus, Gaurav Sood, and Kabir Khanna. 2015. "You Cannot Be Serious: Do Partisans Believe What They Say?" *Quarterly Journal of Political Science* 10 (4): 489–518.
- Roberts, Margaret E., Brandon M. Stewart, Dustin Tingley, Christopher Lucas, Jetson Leder-Luis, Shana Kushner Gadarian, Bethany Albertson, and David G. Rand. 2014. "Structural Topic Models for Open-Ended Survey Responses." *American Journal of Political Science* 58 (4): 1064–1082.
- Sturgis, Patrick, Nick Allum, and Patten Smith. 2008. "An experiment on the measurement of political knowledge in surveys." *Public Opinion Quarterly* 72 (1): 90–102.
- Tetlock, Philip E. 1983. "Cognitive style and political ideology." *Journal of Personality and Social Psychology* 45 (1): 118.
- Zaller, John. 1991. "Information, values, and opinion." *American Political Science Review* 85 (04): 1215–1237.
- Zaller, John. 1992. *The nature and origins of mass opinion*. Cambridge University Press.