

Automated Cognitive Debriefing

Musashi Hinck¹, Uma Ilavarasan^{2,✦}, Gary King², Kentaro Nakamura², Brandon M. Stewart¹

Generally speaking, do you think of yourself as a Republican, a Democrat, an independent, or something else?

Cognitive debriefing: *necessary* for researchers & respondents to agree on question meaning but prohibitively expensive, so rarely used.

- Administer survey, then go back & discuss what respondent thinks each question means.
- Universally-recommended best practice.

Our goal: easily & drastically improve question wording through an **automated cognitive debriefing tool (ACD tool)**.

Hello, I am a conversational AI designed to improve survey research.

In the survey you were asked the following question:

Generally speaking, do you think of yourself as a Republican, a Democrat, an independent, or something else?

What did you think was meant by the question?

Type response here. Hit "Enter" or click the arrow to submit.

↑

(Mis)interpretations of Party ID, the most common political science question

- Ran survey (on Harvard Digital Lab for the Social Sciences) 6/21/24 ($n = 211$).
- Analyzed results with *semi-automated* pattern identification using LLMs and a theme-focused, inductive *hand-coding* of transcripts in NVivo.

Question (mis)interpretations

Beliefs, not identity (175 total refs)

Relies on concordance between party's platform or ideology and respondent's own preferences or values; related to specific policy stances (581 refs).

- "I think you wanted to know what type of political beliefs I hold."
- "Which party most closely aligns with my ideology and policy preferences."

Answer (mis)interpretations

Cross-cutting beliefs (40 total refs)

Communicates belief set crossing partisan boundaries; related to thinking for oneself (31 refs) and candidate-centered choice (28 refs).

- "I share some beliefs with Republicans, and some beliefs with Democrats. I don't agree with parts of each party's platforms."
- "I do not adhere solely to the platform of a single political party. I am independent in that I pick the best principles from multiple parties."

Survey (mis)interpretations

Reacting to classification (52 total refs)

Assumes answer will be used to categorize respondents or make inferences regarding their future actions; occasionally overlaps with anti-university sentiment (8 refs).

- "[The question was trying to assess] what candidate I might vote for; if I lean left or right and how far in that direction."
- "I feel [the question] was used as a shorthand to identify a certain bucket of beliefs that I probably hold, given the way that I identify myself."

ACD Algorithm

1. Write Qualtrics survey with usual covariates & one question for **ACD tool** to automatically interview respondents.
2. Run survey as usual. **ACD tool** interviews respondents & produces:
 - n responses and interview transcripts
 - k question interpretations with text of examples for each.
3. Explore interpretations, particularly variation by covariates.
 - If k is small, rewrite the question so all respondents can reasonably be expected to interpret it in the same way.
 - If k is large, break the original question into multiple, separate questions.
4. If necessary, rewrite question(s) and go to Step 1.
5. Run full survey!

Behaviors, not identity (84 total refs)

References some behavioral dimension of choice, including voting, registering, or donating.

- "How I register to vote...I might think you might be asking about my values, but that would be my assumption and not strictly what you were asking."
- "I am registered as Independent. I cannot participate in the Republican or Democratic primaries in my state or sign petitions for primary candidates."

Rejecting all choices (63 total refs)

Refutes association with either major party; related to 2D negative identification (35 refs) and criticism of the two-party system (10 refs).

- "[Identifying as an Independent] just indicates I do not align myself with the two main political parties. A better descriptor, that I use when it is available, is Conservative."
- "I am not beholden to either major political party]...All politicians are corrupted, only interested in self enrichment."

Reacting to surveys (93 total refs)

Explicitly discusses or critiques survey-taking process, components of survey, or **ACD tool** itself (12 sub-refs).

- "I think the way the options [for political self id] are presented in the media and surveys shape the actual political landscape and reinforce the two-party system."
- "The fact that Harvard's surveys tend to focus more on beliefs and thinking patterns rather than actual voting is the main thing influencing my answer."

Try **ACD tool** now!



Sample of ten selected **ACD tool** transcripts.