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THE IMPACT OF QUESTION ORDER ON COGNITIVE EFFORT IN SURVEY RESPONDING

Wendy R. Smith
Irving J. Culpepper

The Ohio State University
Columbus, Ohio 43210

Faculty Advisor: Jon A. Krosnick

When surveys are conducted, respondents are often asked to expend a great deal of mental effort answering questions. It is likely that subjects will become increasingly fatigued and will therefore reduce the cognitive effort they expend in constructing answers. This study explores whether respondents do so by responding "I don't know" with increasing frequency. Telephone interviews were conducted with 200 male and female residents in the Columbus, Ohio metropolitan area. As expected, respondents were least likely to say "I don't know" near the beginning of the interview and most likely to do so near the end of the interview.

INTRODUCTION

It is now well known that changes in question wording can substantially affect reports of attitudes in surveys. One particular effect that has been examined by public opinion researchers (e.g. Schuman and Presser, 1981) is the presence of an "I don't know" response alternative. Many previous studies show that when "I don't know" is explicitly stated as a response option, more people will choose it than if it is not given as an option.

Many researchers have been interested in the reasons why people are more likely to say "I don't know" when this alternative is offered as a legitimate answer. Sometimes, people say "don't know" because they truly have no opinion on an issue. However, Krosnick (1991) has proposed that people might also choose this response as a result of what he calls satisficing. People satisfice when they do not expend the amount of effort needed to answer a question to the best of their capabilities.

The process that must be performed in order for respondents to provide optimal answers entails four steps (Tourangeau, 1984). The first of these is comprehension; people need first to understand the question. Second, people must search their memories and gather relevant information. Third, people must condense this information into overall judgements that represent their attitudes. Finally, respondents must select a response that accurately reflects their condensed judgement. When respondents do not proceed through these stages carefully and thoroughly, they are

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considered to be satisficing (Krosnick, 1991).

People who satisfice might take short cuts when performing the four stages of cognitive processing, or they might skip steps altogether (Krosnick, 1991). When respondents proceed through each step briefly and without much thought, their behavior might be called weak satisficing. When they skip steps two and three altogether, and choose an answer based only on what sounds good regardless of their opinions, their behavior constitutes strong satisficing. Responding "I don't know" is a form of strong satisficing, because it can be done without retrieving any information from memory. This allows people to choose a legitimate answer while expending very little cognitive effort.

Krosnick proposed that people are more likely to satisfice at the end of a questionnaire than at the beginning. When surveys are conducted, respondents are consistently asked to expend a great deal of mental effort answering question after question, and they receive little or no tangible reward for their efforts. Consequently, it is likely that subjects will become fatigued, distracted, or disinterested with the study as they proceed through a questionnaire. When this occurs, subjects become increasingly likely to engage in satisficing due to a decrease in motivation. Thus, when a "don't know" response is offered, respondents may be especially inclined to choose this as their answer toward the end of an interview.

This paper explores two hypotheses. First, people may choose the "don't know" response more when it is offered than when it is not, as was found in previous research. Second, this tendency would be greater toward the end of a survey than at the beginning.

METHODOLOGY

Telephone interviews were conducted with 200 male and female residents of the Columbus, Ohio, metropolitan area. Telephone numbers were generated by a random digit dialing (RDD) method. Four trained interviewers administered the questionnaires. Interviewers began at the top of a list of telephone numbers and worked their way down the list until 200 interviews were completed. Numbers were discarded if they were out of service, if the person who answered the phone refused to participate, or if the number belonged to a business or car phone. All busy phone numbers, numbers with no answer, and numbers that had no eligible respondent available (eg. 18 years old or older) were usually called back at least once before being retired from the sample.

The respondents were asked 36 questions about social and political issues. Four of these questions were target questions on criminals, government power, day care, and Communism. For half the respondents (selected randomly), the target questions offered a "don't know" response option. For the other half, the target questions did not explicitly offer a "don't know"

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alternative.

The wordings of the four target questions were:

- Criminals: In general, do you think the courts in the Columbus area deal too harshly with criminals, (or) not harshly enough with criminals, (or don't you have enough information about the courts to say)?
- Government: Do you think the government in Washington is too powerful, (or) not powerful enough, (or do you have no opinion on this issue)?
- Day Care: Do you think the federal government should provide day care for children of working mothers, (or) do you think the federal government shouldn't be involved in this issue, (or don't you have an opinion on this)?
- Communism: This next question is about a man who admits he is a communist. Suppose he wrote a book that is in your public library. Somebody in your community suggests the book should be removed from the library. Would you favor removing the book, (or) oppose removing the book, (or do you have no opinion on this)?

Respondents were randomly assigned to receive one of four question orders (see Table 1). In order one, the criminals question was in the beginning of the questionnaire (within the first nine questions), the government question was in the late beginning (within the second nine), the day care question was in the early end (within the third nine), and the Communism question was at the end of the questionnaire (within the last nine questions). In order two, the Communism question was in the beginning, the day care question was in the late beginning, the government question was in the early end, and the criminals question was in the end of the questionnaire. In order three, the day care question was in the beginning, the Communism question was in the late beginning, the criminals question was in the early end, and the government question was in the end of the questionnaire. In order four, the government question was in the beginning, the criminals question was in the late beginning, the Communism question was in the early end, and the day care question was in the end of the questionnaire.

Due to the independent random assignment procedure described above, half of the respondents who received each question order received the "don't know" filters, and the other half did not. Therefore, the study is a 2 ("don't know" filter included, "don't know" filter omitted) x 4 (question order) between-subjects design.

RESULTS

People consistently chose the "don't know" response more often when it was explicitly offered (Table 2, Column 3). 22.0% more people chose "don't know" in the criminals question and 28.4% more people chose "don't know" in the government question when it was offered as a response alternative. In both the day care and Communism questions, 15.2% more respondents chose to answer with the "don't know" response when given the option. Therefore, consistent with prior research, offering a "don't know" option increased the number of respondents who selected it.

Table 3 displays the combined effect of offering a "don't know" alternative for all of the target questions in the beginning, in the late beginning, in the early end, and in the end. In the beginning, late beginning, and end of the questionnaire, the combined effects are relatively similar (16.0%, 17.9%, and 19.1% respectively). However, in the early end of the questionnaire, the percentage of people who chose the "don't know" response increased to 28.2%. This increase is statistically significant ($z = 1.687, p < .05$).

DISCUSSION

The results confirm the hypothesis that people will choose "don't know" more often when it is explicitly stated as a response alternative. The results also support the hypothesis that the effect of offering a "don't know" option becomes greater as respondents proceed through the questionnaire. This was found, however, only through the early end of the questionnaire. At the very end, respondents chose "don't know" much less than they did in the early end. This finding is exactly opposite of what was hypothesized. We expected the effect of offering the "don't know" alternative to increase up through the end of the questionnaire, with the end segment showing the greatest amount of "don't know" responses chosen. Instead, the end had nearly the same percentage of people answering with "don't know" as in the beginning and late beginning.

This effect might have occurred for a number of reasons. First, it is possible that respondents anticipated the end of the interview approaching. When the respondents were initially asked to complete the survey, they were told that it would only take a few minutes to answer the questions. Respondents could have been watching the time and anticipating when the end was near. Knowing this, respondents might have increased their efforts in answering the final questions. It is also possible that the interviewers told the respondents that only a few questions were remaining. Although this was not a part of the questionnaire itself, the interviewers might have felt the need to encourage the respondents to continue answering the final questions. Again, if the respondents knew about the nearing end, they might have been more motivated to think about the

questions. As a result, satisficing might have been reduced, explaining why less "don't know" responses were chosen at the end of the questionnaire.

A second possibility is that, although the interviewers might not have explicitly informed the respondents about reaching the end, inadvertent changes in the interviewer's behavior could have influenced the respondents. Knowing the end was approaching, the interviewers might have shown more enthusiasm, exhibiting more energy in asking the questions. The respondents could have picked up on these cues, causing an increase in their motivation to answer the questions more carefully. Satisficing would have been reduced, explaining why less "don't know" responses were chosen at the end of the questionnaire.

A third possible explanation is that respondents may have been satisficing in both the early end and end of the questionnaire, but the form of satisficing may have changed. This hypothesis proposes that responding with "don't know" is a form of weak satisficing, causing the respondents to choose the response requiring the least effort. This would explain the increased amount of "don't know" responses chosen in the early end of the questionnaire. However, during the end, the respondents may have proceeded to strong satisficing, where they would randomly choose among all of the responses offered. This phenomena is called mental coin flipping (Krosnick, 1991). If this explanation is correct, then offering a "don't know" alternative wouldn't effect the response people choose once engaging in strong satisficing.

These results lead to many interesting questions about how respondents cope with the cognitive demands of a questionnaire. It is not yet known whether the interviewers influenced the respondents' level of motivation near the end of the questionnaire, if the respondents coped by mental coin flipping, or if another variable was affecting how the respondents chose their answers. Given all of the possible explanations, many interesting studies can be conducted to examine how respondents cope with the cognitive demands of a telephone survey.

REFERENCES

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Table 1
Target Question Placement

	Question Order			
	1	2	3	4
Beginning	Criminals	Communism	Day Care	Government
Late Beginning	Government	Day Care	Communism	Criminals
Early End	Day Care	Government	Criminals	Communism
End	Communism	Criminals	Government	Day Care

Table 2
Percentages of "Don't Know" Responses Chosen

Question	Question Form		Effect	χ^2	P
	"Don't Know" included	"Don't Know" omitted			
Criminals	40.8%	18.8%	22.0%	10.24	.00
Government	43.3%	14.9%	28.4%	17.24	.00
Day Care	18.2%	3.0%	15.2%	10.59	.00
Communism	19.2%	4.0%	15.2%	9.80	.00

Table 3
Target Question Placement and Effect of "Don't Know" Manipulation

Placement	Effect	χ^2	P	Number of people
Combined				
Beginning	16.0%	8.57	.0034	196
Late beginning	17.9%	10.84	.0010	196
Early End	28.2%	24.43	.0000008	195
End	19.1%	10.56	.0012	196