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Online Survey Respondents' Reactions to Required Questions

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ABSTRACT

One of the most common errors committed by "amateur" online survey questionnaire designers is the improper use of "required" questions, where the survey respondent is not allowed to continue in the survey unless the question is answered. The problem with this design feature is that if a valid choice is not offered, the survey respondent must either give an incorrect answer to proceed, or terminate the survey. In order to get an empirical sense of how survey-takers respond to such situations, two studies were conducted, both employing 600+ members of a commercial online panel. Respondents were asked their opinion of a fictitious feature of a well-known law under varying required and unrequired response options. We conclude that there are unexpected threats to data quality when using required questions and such questions should be used with great caution.

INTRODUCTION

The availability of easy to use online survey software such as Survey Monkey® has led to a dramatic growth in the number of do-it-yourself survey researchers, many of whom have little experience in survey design or administration. One of the most common errors committed in such surveys (or any online survey, for that matter) can come from the use of required questions, where the survey respondent is not allowed to continue in the survey unless the question is answered, and question response options which are valid to the respondent are not offered.

To illustrate, in Figure 1 taken from an actual commercial survey conducted on behalf of a major brewer, it is assumed that the respondent is familiar with Sierra Nevada beer. Respondents who do not have opinions about taste, image, or value are not given a "don't know" ("DK") or "no opinion" choice and must therefore make up a response in order to move forward in the survey (which offered a large financial incentive for participation).

Likewise, in Figure 2 respondents were not given a "none of the above" choice but received the error message that they must provide a response in order to continue when they did not select any choices.

Figure 1
Required Question Example 1

Please rate the following characteristics of Sierra Nevada beer:					
	Very bad				Very good
Taste	1	2	3	4	5
Image	1	2	3	4	5
Value	1	2	3	4	5

Figure 2
Required Question Example 2

Which of the following would apply to you in the next 12 months?	Check if Yes
Get engaged	
Get married	
Become a parent	
Become a grandparent	
Have a child go away to college	

These examples point to severe accuracy problems when questions are required and appropriate response choices are not offered. *This is not a trivial issue, as such errors are found in assessments of medical practices, social engineering studies, and other societally important practices where evidence-based decision making has become increasingly common.*

An exploratory analysis of the *types* of errors suggests that they all can be categorized as providing "non-exhaustive response options". A further breakdown includes:

1. Lack of a "don't know/no opinion" response in single response (often referred to as "multiple choice") questions.

2. Lack of an "other" response in single response (often referred to as "multiple choice") questions.

3. Lack of a "none of the above" choice for checklist questions.

4. Inability to use a value of "0" (zero) in questions requiring a numerical value (e.g. "What percent of the time when you visit a bank do you use the ATM inside the branch itself?" when the respondent does not visit a bank.

To more fully understand how respondents react in such situations, we conducted two empirical studies involving required questions in online surveys of the type noted as category "1" above, the lack of a "don't know" response option.

LITERATURE REVIEW

The topic of "required questions" appears to be ignored by the scholarly published literature. Illustrative is "A Technical Guide to Designing and Implementing Effective web Surveys" (Baatard, 2012). The author notes that while traditional survey methodology has been widely studied, "…there are numerous issues that arise specifically when surveys are delivered online". The paper then goes on to discuss a variety of "technical" issues such as what characters to use when using a respondent identifier or access code; whether radio buttons should be used instead of drop down lists; recommending numerically coded responses rather than capturing the actual verbiage of the response for structured questions; how many questions should be on a page; the pros and cons of using JavaScripts for data validation, and many other topics. However, the seemingly equally important issue of whether questions should be required or not is not mentioned at all.

Literature specifically about the use of required questions seems mainly to reside in practitioner oriented publications. Typical of practitioner advice is Dillman's early commonsense recommendation that appeared about the time that online surveys (referred to as "internet" or Web surveys at the time) had become established: "One of the much talked about attributes of Web questionnaires is the ability to force respondents to answer every question….This quality is often promoted as a distinct advantage of Web surveys"…"Respondents should never be forced to provide a substantive answer before moving to the next question. Sometimes there are legitimate reasons for objecting to a question and sometimes the respondent may, in fact, be unable to pick one of the answer choices. The frustration associated with this requirement seems likely to lead to annoyance and premature terminations" (Dillman, 2000, p.394).

A well-regarded commercial online survey package, Survey Gizmo, has a similar message about requiring answers to all questions: "Nothing is more annoying to respondents than having offered their time to complete a survey and then having trouble progressing through the survey. A few skipped responses is not going to change your results – and ultimately you cannot force respondents to answer a question. If they want, a respondent can just close their browser and forget about your survey." (Survey Gizmo, 2011.)

Despite these common sense admonitions about the use of required questions, such questions seem to be commonly used and misused. A tally of 107 recent online surveys to which they were invited to participate by the authors and their students showed that 59% had at least one required question, and many of those (44%) contained an inappropriate use of this feature; (more questionnaires may also have had problems but were not detected.)

A critical issue for required questions is the inclusion of a "Don't know" or "Other" or a similar choice which allows the respondent to continue past a required question when the correct response choice is not available[1]. "Don't know" has been extensively discussed in the questionnaire design literature, including Stanley Payne's classic *The Art of Asking Questions* first published in 1951. Although Payne believed that efforts should be taken to minimize DK responses, he very much appreciated the necessity of offering a DK response option. He notes that while a low number of DK responses may be indicative of a well written question, "With some questions a high response is not desirable and should not be expected. If most respondents have basis for opinions but in effect would have to flip coins mentally for their answered, it would be better if their answers were not recorded. Forcing a choice where none exist is not realistic." (p. 23.) He later concludes that "Don't know" or "No opinion" answers have to be provided for except in rare circumstances" (p. 230).

Arrow et al (1993) state that "A 'no-answer' option should be explicitly allowed in addition to the 'yes' and 'no' vote options" on questionnaires seeking to ascertain a respondent's position on referendums.

However, as Wang (1997) has noted, the DK response can cause a "serious" loss of information when that information is needed and some authors believe that it is not always necessary to accept the DK. Many authors have made the distinction between factual and opinion questions when deciding if a DK response should be offered. Typically, DK responses are suggested as appropriate for factual questions but not for opinion ones. However, Wang notes that while some respondents truly do not have an opinion, others may choose DK because there were circumstances of the questioning that caused them to not think about their preferences, they knew their preferences but chose DK for other reasons, or they were not willing at the time that the questionnaire was administered to form an opinion.

A more theoretical treatment of the DK response comes from satisficing theory (Heerwergh, Dirk and Geert Loosveldt, 2008). This approach suggests that responding to questionnaires requires a substantial amount of cognitive work, and some respondents may make less of an effort thus satisficing rather than maximizing. It was thus hypothesized (and concluded after an experiment involving a student population) that web based surveys would elicit a greater amount of such satisficing behavior, as indicated by a greater use of the DK response, than face-to-face surveys asking the same questions. They found the DK rate among twelve questions where it was offered to be 2.6 times higher in the web version than in a follow-up interviewer administered version of the questionnaire. However, there were many issues that bring the validity of the results into question (e.g. the web version showed a DK response option, while in the interviewer administered version the DK response was accepted but not explicitly offered).

Finally, it is known from previous studies (e.g. Beatty and Herrmann, 1995) that many respondents will exhibit opinions about obscure laws when they are not offered the option of a

[1] In this paper we treat "Don't know" and No opinion" as being equivalent but recognize that some respondents may see the choices as having different meanings.

DK. This impacts our study in that a central feature of the research design was responses to a fictitious provision of a recent law.

METHODOLOGY

In order to get a sense of how survey-takers respond to such situations of poorly structured required questions, we conducted two studies using a quarterly proprietary financial services tracking survey administered to the Harris Interactive/Nielsen panel on behalf of a bank. The first study employed 603 respondents; the second 608.

Participants were experienced online survey takers who receive cash rewards for their participation. Both studies encompassed the Rochester, NY, Metropolitan Statistical Area, which offers a variety of respondents demographically. As is typical in online panel surveys, respondents skew female, older, and better educated than the over age 18 US population as a whole. However, in only one instance did we encounter a statistically significant difference in response according to gender or age. Thus, results were not weighted by these variables but differences in response results according to these characteristics are noted later in this article. (See Table 1.)

As shown in Table 1a the majority had completed more than ten online surveys during the past ten months from the time of our survey. (Results taken from second study but may be presumed to be representative of both studies' respondents.)

Study 1

The first study focused on the research issue of "How do experienced survey takers respond differently when they are asked to give their opinion about a fictitious law when a "don't know" response category is not offered and the question is required?" The question asked the extent to which respondents agreed that the "Revitalization Clause" of the Dodd-Frank Wall Street Reform and Consumer Protection Act should be repealed. Since there is no such clause, the correct response should be "Don't know".

This study employed a five point scale with each response category labeled. Table 2 below shows the research design and the number of respondents (randomly assigned) in each of the four cells.

Table 1
Selected Demographic Comparisons (Age 18+)

	Study 1 online panel	Rochester MSA	US Population
	Percent	**Percent**	**Percent**
Gender			
Men	33.1	48.6	49.2
Women	67.9	51.4	50.8
total	100.0	100.0	100.0
Age			
18-34	21.1	33.2	26.9
35-44	10.5	13.5	17.1
45-54	16.4	17.5	18.9
55-64	25.8	16.5	16.8
65+	26.2	19.3	20.4
Total	100.0	100.0	100.0
Education			
High school grad or less	18.7	38.0	42.0
Some college/Associates	36.2	29.5	28.8
Four year degree	21.5	18.2	18.9
Some grad school/degree	23.6	14.2	10.4
Total	100.0	100.0	100.0

Table 1a
Number of Online Surveys Started
(Not Necessarily Completed)
Past Ten Months

Number of surveys	Percent
1 - 5	19.9
6-10	12.3
11-20	15.1
21-30	12.8
31-40	5.8
41-50	4.3
50+	16.6
Don't know	13.2
Total	100.0

Table 2
Number of Respondents Per Cell

	"Don't know" offered	"Don't know" not offered
Required response	154	151
Not required	151	147

As expected, we found that Don't Know (DK) when offered was overwhelmingly chosen (columns A and B of Table 3). When a response was required and DK was not offered, respondents chose the midpoint of the 5-point scale (column C).

However, contrary to our expectations, even those who could skip a question (i.e. response not required) chose the midpoint of the 5-point scale rather than choosing to skip the question (column D). In fact none of the respondents skipped the question when it was not required.

Using a t-test for percentages (StatPac, 2014) the differences between columns A & B and C & D were not statistically significant (p =.436 and p =.858 respectively.)

Table 3
Responses to Whether Fictitious Provision of Dodd-Frank Law Should Be Repealed

	A Required question WITH a Don't Know response	B Not required question WITH a Don't Know response	C Required question WITHOUT a Don't Know	D Not required question WITHOUT a Don't know
	Percent	Percent	Percent	Percent
Strongly Agree	3.2	4.6	8.6	6.8
Agree	3.2	4.0	4.0	6.8
Neither Agree nor Disagree	10.4	9.9	81.5	82.3
Disagree	1.3	3.3	2.0	2.7
Strongly Disagree	1.9	2.0	4.0	1.4
Don't know	79.9	76.2	-	-
(skipped question)	NA	0.0	NA	0.0
Total	100.0	100.0	100.0	100.0

Study 2

The second study designed to test whether scale differences affected the use of required questions. It differed from the first in that (1) it employed four-point and ten-point scales, and also asked attitudinal questions about required questions; and (2) DK was not offered in any cell. Thus, the design and sample sizes are shown in Table 4 below:

Table 4
Number of Respondents Per Cell

	4 point scale	10 point scale
Required response	153	152
Not required	151	152

The four-point scale was an agreement scale with each point labeled. As shown in Table 5, 13.2% skipped the question when given the opportunity. Likewise with the ten-point scale which also does not have a true midpoint, many respondents who had the opportunity to skip the question did so (7.9%) This is quite a different result from the first study where none of the 151 respondents who were not offered a DK and were given the opportunity to skip the question did not do so. This is an important finding which perhaps suggests that the lack of a midpoint is significant in determining the respondent's willingness to skip a question that is not required.

Table 5
Four Point Scale Results; Responses to Whether Fictitious Provision of Dodd-Frank Law Should Be Repealed

	Required question; without Don't Know	Not a required question; without Don't know
	Percent	Percent
Strongly Agree	5.9	4.6
Agree	40.5	33.1
Disagree	43.8	42.4
Strongly Disagree	9.8	6.6
Not answered	NA	13.2
Total	100.0	100.0

Table 6
Ten Point Scale Results; Responses to Whether Fictitious Provision of Dodd-Frank Law Should Be Repealed

	Required question; without Don't Know	Not a required question; Without Don't know
	Percent	**Percent**
1=Strongly Disagree	4.6	3.9
2	2.0	2.6
3	1.3	2.6
4	3.3	3.3
5	64.5	57.2
6	15.8	11.8
7	2.6	2.6
8	2.0	3.3
9	1.3	0.7
10=Strongly Agree	2.6	3.9
Not answered	NA	7.9
Total	100.0	100.0

Respondent attitudes about required questions

We also asked respondents to indicate the frequency with which they encountered required questions that were erroneously written (did not have the appropriate response) and how they reacted. About 65% said that they had encountered such questions at least once and another 27% said three or more times. About four in ten said that they had stopped taking a survey at least once in the preceding ten months when encountering such a situation, while 30% said that they deliberately gave an incorrect answer in order to continue. One in five said that at least once they decided to stop taking a survey as soon as they saw it had required questions. These results may be found in Tables 7 through 10.

When evaluating these responses according to gender, and age, we found that no statistically significant ($p \leq .05$) gender differences for these characteristics and only one due to age (younger respondents were less likely to stop taking an online survey as soon as they saw that it had required questions.) Higher levels of education were associated with greater likelihood of encountering a questionnaire with required questions that did not have appropriate response categories.

Additional analyses by experience of the survey taker (as indicated by the number of surveys attempted or completed) showed that those who had taken more than five surveys in the past year were significantly more likely than those who had taken five or fewer to encounter a required question that did not have the appropriate response, to deliberately give a wrong answer, and to stop taking a survey when encountering a required question that did not have an appropriate response. However they did not differ in their propensity to stop taking a survey when they saw that it had required questions.

Table 7
Number of Times a Required Question Was Encountered That Did Not Have an Appropriate Answer Choice and Did Not Include a Don't Know Option

	Percent
None	27.8
1	20.7
2	15.5
3 or more	27.6
DK	8.4
Total	100.0
(n)	(608)

Table 8
Number of Times that Respondents Stopped Completing a Survey When They Encountered a Required Question Which Did Not Have an Appropriate Answer Choice and Did Not Include a Don't Know Option

	Percent
None	47.2
1	17.8
2	12.8
3 or more	13.0
DK	9.2
Total	100.0
(n)	(608)

Table 9
Number of Times that Respondents Deliberately Gave a Wrong Answer to a Required Question that Did Not Have an Appropriate Answer Choice in Order to Continue Taking the Survey

	Percent
None	60.9
1	13.8
2	7.6
3 or more	9.9
DK	7.9
Total	100.0
(n)	(608)

Table 10
Number of Times that Respondents Stopped Taking a Survey as Soon as They Saw that It Had Required Questions

	Percent
None	71.5
1	8.1
2	7.7
3 or more	4.6
DK	8.1
Total	100.0
(n)	(608)

DISCUSSION

These results clearly show that it is risky for questionnaire designers in all applications (not just business) to use the required question option that is available in most online survey design programs. Several dysfunctions are likely to occur. We know for example from this research that non-response error will increase because some potential respondents will decline to take a survey, or finish taking it as soon as they see that it has required questions. This occurs regardless of whether the required questions are properly written. One can surmise that experienced survey takers are aware that required questions can cause frustrations when trying to respond responsibility and do not take the risk that this will occur. Perhaps there is an interaction between the perceived professionalism of the questionnaire or source of the invitation to respond and the willingness to proceed. For example, seeing Survey Monkey in the survey link's URL might be a trigger of non-response.
Another possibility is the evaluation of the use of required questions on *respondent fatigue*. It is likely that having to deal with required questions that have no appropriate response category will cause respondent to become tired more quickly and thus to provide poorer answers or to terminate the survey earlier than they otherwise would. Perhaps this explains why some experienced survey takes do not attempt to complete questionnaires with required questions.

Measurement error can occur during the survey completion process if a question is required and a proper response is not offered. Our results show that most respondents will give an erroneous answer in order to continue with the survey, rather than terminating it on their own. This is probably more likely to occur the longer the amount of time invested in the survey taking and/or the greater the incentive offered. While we understand that in our study all respondents were being compensated for their participation as members of a commercial panel and therefore might be more likely to continue by giving an erroneous answer than if their participation were entirely voluntary, we think it is a relevant issues across all conditions where a respondent has decided to cooperate in answering the questions.

The most common response approach when a Don't Know or equivalent option is missing is to choose a mid-point. This has been documented in other studies as well as reflecting a DK response. Thus, the researcher will believe that accurate information is being provided when it is not.

It is especially dangerous to think that valid responses will be obtained by not offering a DK but leaving a question unrequired and assuming that respondents will skip the question if an appropriate response is not offered (or telling respondents to leave the question blank). This research has shown that most respondents will choose a mid-point rather than skipping the question when DK is the appropriate response and it is not offered.

Of course, the viability of the self-administered survey methodology is threatened as these kinds of mistakes are commonly made and respondent frustrations increase.

Likewise, the "social exchange" approach to motivating survey response (Dillman, 2000) is threatened by the self-centered attitude that could well be behind the widespread use of the required question. (We have encountered untrained questionnaire designers who insist that they are not going to "allow" respondents to take the survey without giving the researcher all the information that the researcher wants to have.)

Thinking about future research, our questionnaire had many required questions in the part of it that asked about financial services and respondents may have thought that a response was required for the study questions as well. Another approach to be included in future research would be to test explicit directions about skipping the question (when not required and/or when a DK is not offered) against more general instructions.

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