But what will people think? Getting beyond social desirability bias by increasing cognitive load

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Introduction

When was the last time you donated to a charity? You might not know the exact date but you probably have a rough idea of timescale. If a stranger asked you that question as part of a survey, some of you might be completely fine answering it, happy to divulge that you have a monthly direct debit going to an animal welfare charity or you sponsored a marathon-running friend last week. However, for some of you, that question might be a little bit awkward. You know that giving to charity is a Good Thing but what with how busy you are, you haven’t really even considered donating for a while now. But the last category is ‘More than a year ago’ and you certainly don’t want anybody thinking you’re on the outskirts of miserliness. You could just tell this friendly questioner something that sounds a bit better – let’s go with ‘In the last month’. It’s not like this tiny obfuscation is going to matter …

This pattern of thought, so easily recognisable, leads to social desirability bias (SDB) being a phenomenon in the results of market and social research.

In this industry, we collect data from respondents in order to inform clients about what their target market or audience is thinking and doing. From predicting election outcomes to measuring the success of rebranding a soft drink, research can lead to huge decisions being made, whether that is the recommendation of policy change or spending millions on a preferred ad campaign.

Unfortunately, it is seldom the case that asking direct questions results in accurate, relevant and detailed responses from all that can be straightforwardly interpreted at face value. Critics of market research are concerned that these problems are insurmountable, with accurate results being more down to luck than good research design (Graves 2010, p. 13). However, I propose that increasing the cognitive load of respondents could be an effective way of improving data quality by creating a situation where respondents are more likely to give an apposite and accurate answer.

This article is concerned with decreasing SDB. I am most familiar with quantitative research, so I will focus on this; however, there could be ways to bring this theory to qualitative research, too, which I will consider briefly.
At this point, my idea is rooted in theory; the next step will be to test the application of the theory to establish whether and to what extent changing cognitive load affects responses and therefore data quality.

Social desirability bias in face-to-face interviews

While the purpose of surveying people is to collect data that represent as closely as possible people’s attitudes, experiences or demographics, this tends to be reliant on respondents giving answers that accurately reflect their reality. However, there are circumstances in which a respondent might not feel willing to give an answer that reflects reality, sometimes due to SDB, defined by Grimm as ‘the tendency of research subjects to give socially desirable responses instead of choosing responses that are reflective of their true feelings’ (2010, p. 2).

Responding on topics such as health (including weight, drinking habits, diet and exercise), finances, voting patterns, general social attitudes and many other areas can invoke SDB, as respondents adjust their answers to make them more palatable or impressive than the reality. Tourangeau and Yan give a number of examples of tests where SDB was demonstrated to be present, including self-reports about illicit drug use compared with very accurate urinalyses showing drug use is very underreported, and self-reported voting compared with voting records showing a significant proportion of respondents say they vote when they haven’t (2007, p. 859). They also note that SDB does not only lead to inaccurate responses being given but also increases non-response rate (p. 862).

This could be occurring due to self deception or ego defence, where the respondent has convinced themselves of something that is inaccurate, or other deception and impression management, where the respondent consciously gives an inaccurate answer (Nancarrow & Brace 2008, p. 2).

Although it is possible for either of these to happen in any surveying situation, impression management is a particular problem in face-to-face interviewing, as the actual presence of the interviewer is more likely to invoke a desire to save face. A number of studies have indicated that online surveys help to mitigate this (though not entirely remove it) (Nancarrow & Brace 2008, p. 10). However, online surveying is not suitable for all projects. Therefore, SDB is clearly a problem, as although insight on sensitive topic areas is highly sought after, the utility of survey questions is dramatically undermined when the researcher has reason to suspect respondents will not answer as truthfully as they can.

Increasing cognitive loads

In social psychology, a common technique in experiments is to alter the subjects’ cognitive loads. Increasing cognitive load involves giving subjects more to think about or focus on as they perform a task, which therefore occupies some of their cognitive power. Theoretically, how we approach decision making changes while under a heavier cognitive load. Kahneman calls the parts of the mind that think in these different ways System 1 (fast, instinctive, emotional) and System 2 (considered, deliberative, slow), noting that when given a cognitively taxing task, System 2 becomes occupied, leaving System 1 to make remaining decisions. He gives an example of choosing between a chocolate cake and a fruit salad while trying to remember a string of digits, writing ‘System 1 has more influence on behaviour when System 2 is busy, and it has a sweet tooth’ (2011, p. 41). Chocolate cake all round!

Examples of using this technique in experiments include the following.

- Schulz et al.’s use of changing the cognitive loads of subjects while they played Dictator games, which indicated that generosity was negatively correlated with cognitive load, suggesting a SDB towards appearing generous (2012).
van’t Veer et al.’s finding that honesty in reporting die rolls that could result in pay-outs increased with cognitive load, suggesting that being misleading is more cognitively taxing than telling the truth (2014).

Duffy and Smith’s experimentation with changing cognitive loads of subjects playing a series of prisoner’s dilemma games, which found that strategic decision making decreased as cognitive load increased, suggesting that strategic calculation can be limited by increasing cognitive load (2014).

The results of experiments like these suggest that cognitive load is a relevant consideration when conducting surveys. In some instances, when somebody is focused on giving an answer to a sensitive question, they are not only thinking about the answer itself but also considering how that answer would appear and whether adjusting it is a worthwhile course of action. However, increasing their cognitive load with a different task means their focus is elsewhere or divided, and they are more likely to take the cognitively less taxing route of relying on their subconscious to provide an answer, which is therefore more likely to be more representative of their actual status or opinion.

Where next?

Although, as established, this idea is theoretically sound, it has never to my knowledge been properly put to the test in reducing SDB in a market or social research context. This might be due to some possible limitations, discussed below, but the potential impact of a successful method to counteract SDB would be significant. The next step therefore will be to see how it plays out when applied to real data collection scenarios. An ideal initial experiment would comprise two stages: cognitive testing and trial data collection.

First, a suitable questionnaire would have to be designed. This could be taken from existing surveys that deal with sensitive issues (such as voting intention polling). Alternatively, a questionnaire could be written that asks questions that could be affected by SDB. Asking questions across a small range of sensitive subjects might be helpful in terms of distinguishing between subjects that are more affected by SDB motivated by ego defence (which is driven more by System 1) or by information management (driven more by System 2). It is also worth highlighting that, in so far as questions are about attitudes, as Triandis defines them, there are affective and behavioural components as well as the cognitive one – so how people feel and behave might not always be aligned to how they think about an issue (1971). This means that the questionnaire design should take into account how pertinent these components are, and hypotheses would probably reflect these nuances.

To increase the cognitive load of respondents, I would use the following method.

- Give the respondent a random string of digits to memorise and indicate that they will be asked to recall these in a few minutes. For English speakers, seven digits is thought to be the average limit for people to hold in their short-term memory, so this is enough to be taxing without being so difficult that people don’t bother trying (Jones 2001, p. 6). Experiment with different numbers of digits if necessary.
- Ask the respondent the questions, some or all of which are at risk of being affected by SDB.
- Ask the respondent to indicate what the digits were, which will be useful data for analysis, as there might be a difference between people who remember correctly (and therefore might have used more cognitive capacity) and those who don’t.
- Ask respondents who did not recall the digits correctly whether they attempted to remember them. This is to assist interpretation of the results and get a better estimate of the impact on those who cooperated with the cognitive load task.

At this point, cognitive testing would give some initial insight into the utility of increasing cognitive
One of the uses of cognitive testing is to establish whether a question is perceived to be too sensitive (Caspar 2004). If respondents are asked to talk through their thinking as they consider a question, sometimes this reveals that they are concerned about how their answer will be perceived. By asking the designed questionnaire to two groups, one of which receives the full questionnaire and one control group that is not asked to remember a string of digits, this exercise will give an initial indication as to whether the process is decreasing the propensity of respondents to dwell on social desirability.

With an appropriate questionnaire honed, it can then be used in the field. Again, a test and control group would be used. It is not possible in a survey to find out whether individual respondents have given answers that are reflective of their true feelings and activities, but comparing groups that have been randomly divided from original sample will indicate whether the additional step designed to increase cognitive load has affected the results. It could also be useful to repeat the same split-sample test with a group of online respondents; this would indicate whether the method’s effectiveness changed depending on mode. In addition, the sample should include people with varying levels of cognitive ability to see if impact differs with this.

If the results are positive and indicate a degree of successful mitigation, then further consideration should be given to the best ways to utilise this tool to improve data quality.

### Potential limitations and opportunities

Everything that is done in a survey has an effect, which means that we should be aware that adding a stage requiring the respondent to focus on a task could have repercussions beyond those that are being searched for. It is particularly worthwhile to consider how respondents will feel about being asked to do this in the middle of a survey. Respondent burden is a risk that could arise when respondents feel as if they are being tested, due to increased effort or stress (Bradburn 1978, p. 36). If they become irritable or anxious, then there is a risk of them not engaging with the survey as much as they otherwise would have done, which could decrease data quality – a rather counterproductive result!

However, if respondent burden seems likely to present a problem, gamification could represent a way to exploit the cognitive effort required and avoid unwanted disengagement. Answering surveys in the standard ways can be dull, and bored respondents are also likely to disengage and provide less useful data. Gamification has been championed as a method to address this by, among other things, giving a sense of achievement, motivation through feedback and general engagement through a more enjoyable activity (Bradley 2013, p. 270).

Although the majority of discussion around gamification is focused on increasing engagement and creativity, some recognise that it might have even more potential. Tom Ewing enthuses about the potential for gamifying surveys to change the state of mind of respondents, bringing them closer to the state they are in when making decisions, and calls for experiments that explore the relation between cognitive states, gamification and the resulting data (Ewing 2012, p. 34). Indeed, surveys have been designed with this in mind; GMI’s research shows that putting people under a time pressure that replicates the rush of shopping affects the choices they make (for example, increasing sales of more attractive tomatoes by more than 300%) (unpublished, p. 5). However, more research is needed, particularly because what has been done has not been focused on reducing SDB, which could require different treatment – people might respond less well to being hurried if they feel they are being asked something sensitive. In addition, there would be a difference between my suggested method of memory tasks and alternative techniques such as time pressures.

This is, first, because the method suggested here distracts from the questions being asked
through virtue of separation, whereas techniques used within questions themselves are intertwined with the questions and content. Second, time pressure could lead to answers being given randomly or not at all, if too stringent, but if they are too long they would not be sufficiently taxing. Cognitive loading through memory is more forgiving in terms of allowing respondents to give their answer as suits them while keeping their mind focused elsewhere throughout.

Therefore, the initial experiment should aim to capture respondents’ reactions to the section through a question completed by the interviewer at the end, and further work should be guided by the results of that. Future research could then consider how the method complements and repositions elements of gamification.

Use in qualitative research

It should also be possible to use cognitive loading in qualitative research. The same principles apply; in fact, SDB could be even more intense in a focus group with other people giving different answers, or a depth interview with one person probing on intimate details for an hour. Similarly, people’s reported opinions are affected by what other people are saying, even to the extent where a third of people altered their answer to conform to the prevailing (incorrect) answer given by actors in a test administered in a group environment (Asch 1951). This can actually be a benefit of focus groups, as group dynamic is very important in assessing reactions, but in some instances it is likely to lead to results that are hard to interpret. Cognitive loading, through giving people unrelated tasks, for example, could draw out more diverse opinions if the participants are less able to focus on the nuances of the ways the group is leaning.

Conclusion

Market and social research provide powerful insights into the minds and lives of consumers and citizens. However, to have confidence in findings and recommendations, we must be aware of ways in which the data could be compromised. SDB has long been identified as a factor that affects responses collected, which is particularly problematic as those sensitive insights would often be particularly valuable.

If respondents used their subconscious to answer questions that have socially desirable answers, they might be more likely to give an honest response, but while they have the opportunity to analyse their response and any ramifications, they are more likely to adjust their answer to something they believe is acceptable rather than one that is accurate.

Other fields have been using cognitive loading to increase participants’ reliance on their subconscious to assess options and make decisions. This could signify an important opportunity for the market and social research industry; by using similar techniques, it might be possible to diminish the effect of SDB.

At this point, it is worth discussing the best ways to further explore cognitive loading as a potential method. Theoretically, it should have an effect. The next stage will be to see what that effect is and judge whether its impact could be valuable for collecting better data.

References


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**About the author**

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