The Use of Pre-Existing Survey Questions: Implications for Data Quality

Laura Hyman, Julie Lamb and Martin Bulmer[1]

ABSTRACT

When designing survey questionnaires, the potential inclusion of existing questions is a possibility that is not often contemplated by researchers and students, despite it being perfectly feasible This is partly due to the pressures of being 'original' in the academic and research worlds, but also because of a general lack of awareness of the availability of ready-made questions used in UK social surveys (See for instance: Lamb 2004). This paper draws attention to a facility that seeks to remedy this problem. The ESRC Question Bank (Qb) [URL: http://qb.soc.surrey.ac.uk] is an online resource that provides access to a repository of social survey questionnaires, as well as information and commentary on social measurement in key topic areas. It holds questionnaires (from 1991 onwards) from 57 large scale UK national probability sample surveys, as well as further information about each survey.

One advantage of using these pre-existing questions is that they will have been extensively tested at the time of first use. Information on the exact reliability of each question cannot always be easily accessed; where such information is available, it can be found using the further resources pointed to by the Question Bank. In a few cases, for example the conceptualisation and measurement of 'social class' and socio-economic position, quite a lot of methodological work has been done. On other topics, there is much less, at least publicly available.

The topic commentaries in the Qb allow concepts to be explored in terms of how they can be measured. Taking these into account could help to shed light on the extent to which particular questions can accurately measure one's concept of interest. This extent, unfortunately, may not always be large – compromises may have to be made, or questions adapted to fit one's requirements. This paper discusses the implications this could have for the quality of survey data obtained from these questions, particularly in terms of validity. One major caveat of using pre-existing questions is the potential result of low data quality if measures are unreliable. However, if 'recycled' questions are accurate measures of the concept of interest (and many will have been pre-tested to ensure this), the degree of validity is likely to be high, resulting ultimately in obtaining data of higher quality.

Keywords: Question Bank, measurement, validity.

---
[1] Laura Hyman, Julie Lamb and Martin Bulmer, the Question Bank, Department of Sociology, University of Surrey, Guildford, Surrey, GU2 7XH. L.Hyman@surrey.ac.uk.

1. The Question Bank: a resource for survey research

1.1 What is the Question Bank?

The Question Bank is an online social survey resource funded on a modest scale by the UK Economic and Social Research Council and run from the Department of Sociology, University of Surrey. Founded in 1996, it provides access to a repository of questionnaires that have been used in large-scale government and academic social surveys since 1991. It currently contains questionnaires of fifty-seven surveys, although new ones are continuously being added. Questions can be found on a wide range of substantive social science topics, including health, crime, social and political attitudes, employment, education and housing.

The resource has three main aims; the first is to bridge the gap of understanding between survey professionals and academic researchers. This gap has always been considerably large in the UK, with researchers in academia being quite unaware of the activities of professional survey organisations such as the Office for National Statistics and the National Centre for Social Research. The Question Bank, in providing the questionnaires (as well as other information) from surveys carried out by these organisations, acts as a source of information on such research activities. Second, the Question Bank aims to provide access to examples of quantitative measures of key variables, or in other words, survey questions that aim to measure concepts commonly under study in the social sciences. These are from a variety of substantive areas including those indicated in the previous paragraph. Its third aim is to be freely available online to any individual who visits the site.

1.2 Who are its primary users?

Three main groups of people are targeted by the Question Bank; researchers who are designing their own questionnaires, secondary analysts of survey data and students of research methods. The first group may use the resource in order to gain an insight into how questions that have previously been used in social surveys have been written. They may even 'borrow' or 'recycle' some of these questions and incorporate them into their own questionnaires. This is a possibility that many researchers may not have even contemplated, and detailed discussion of its implications will be returned to later in this paper. Secondary analysts of quantitative data might benefit from using the Question Bank by seeking questionnaires that may act as documentation of the variables that they are analysing, in order to gain more familiarity with them. Lastly, the resource could be used by students of research methods who may simply want to gain a deeper understanding of the world of large-scale government and academic surveys.

1.3 How might one find the information they require?

The content of the Question Bank site is organised around three main areas; Surveys, Topics and Resources. The Surveys menu provides access to questionnaires according to the title of the survey from which they are taken. These titles are listed alphabetically; an overview is available for each survey, providing methodological and background information on it, and questionnaires for several different years of fieldwork can be downloaded. The Topics menu lists twenty-two

substantive social science topic areas, some examples being Health, Crime, Social Attitudes, Ethnicity and Race, Social Class and Housing. Each of these has a web page that contains one or more commentaries on quantitative measurement of concepts in that area – users may find these of use if they are concerned with the extent to which survey questions are accurate measures of their concepts of interest. Each area is also broken down into several sub-topics that are linked directly to questionnaires containing relevant questions. Lastly, the Resources section contains auxiliary information such as Frequently Asked Questions, written material on Computer Assisted Interviewing and links. Users are, according to their specific needs, able to decide the route through which they will attempt to locate their desired information.

2. Utilisation of pre-existing questions

As previously mentioned, survey questions asked in major social surveys on a wide variety of substantive topics can be accessed via the Question Bank. As one of the resource's primary groups of users, researchers designing their own questionnaires can locate and 'recycle' such questions for their own use; this prevents the need to re-invent the wheel. Despite this being perfectly feasible, this inclusion of existing questions is not something that is often contemplated by researchers; this is partly due to pressures of being 'original' in the academic and research worlds, but also because of a lack of awareness of the availability of such questions. The Question Bank is in a prime position to heighten awareness of such a service.

2.1 Advantages of using pre-existing questions

The survey organisations that produce the questionnaires that are represented on the Question Bank web site are particularly experienced in questionnaire design and have a large workforce to develop and test questions. Biemer and Lyberg state that there are three goals in questionnaire design:
1. To write questions that convey the meaning of the enquiry exactly as the research intended.
2. To provide the correct manner in gaining information from respondents (i.e. using self completion methods for sensitive questions) which are designed to generate the most accurate responses possible.
3. To minimise the time burden on respondents in proportion to the analytical requirements of the survey.
(Biemer and Lyberg 2003:120)

It is highly likely that the research teams in these major survey organisations will take all of these question design factors into account when developing their questionnaires. Using the questions which have already been developed in this way has several advantages. The first and possibly most obvious one is that the questions would have already been tested at the time of their first use, thus researchers could be fairly confident that they are good indicators of their concepts of interest. This leads to a second advantage, in that savings can be made in terms of both money – as no question developers are needed - and time – as questions, coding categories and accompanying show cards do not need to be developed and tested.

A third advantage is that in some substantive areas, methodological work on conceptualisation and measurement has been done; this can complement the questions and provide guidance as to how they can act as indicators of concepts. An example of this is the work on Socio-economic Classification in the UK by Rose and Pevalin (2003) that is concerned with measurement of social class position.
Lastly, the Question Bank also points to further online resources, one of which is the Nesstar Catalogue [URL: http://nesstar.esds.ac.uk/webview/index.jsp] that can display the spread of responses given to many of these questionnaire items (although Nesstar's survey coverage is less extensive than that of the Question Bank). Again, this can be utilised to complement these.

2.2 Measurement of concepts

The commentaries found in the Topics area of the Question Bank site (which are currently being developed and expanded upon) are written by experts in their respective fields and allow concepts to be explored in terms of how they can be measured. Taking this material into account could help to shed light upon the extent to which certain questions can accurately measure one's concept of interest (Sartori 1984, Burgess 1986, Goertz 2006). Dale states that "Sociologists tend to place great weight on the link between questions, variables and concepts and the validity of measures used in survey analysis" (Dale 2006). Unfortunately however, this extent may not always be large; if questions are found to be inaccurate measures, a compromise may have to be reached, and questions may need to be adapted. For example, the commentary on Ethnicity highlights how it can be measured using a closed-ended question consisting of thirteen answer categories (see Fig. 1). However, in some cases, a question that seeks to measure ethnicity may be open-ended, leaving the respondent to enter his or her perceived ethnic group in a space provided. If researchers feel that such closed-ended questions act as more accurate measures of ethnicity, they may choose to adapt an open-ended one to include answer categories like those in the example below.

Fig.1: Closed-ended survey question to measure respondent's ethnicity

`To which of the groups listed on this card do you consider .... (person) belongs'

- 01 White

- 02 West Indian

- 03 Indian

- 04 Pakistani

- 05 Bangladeshi

- 06 Chinese

- 07 Turkish

- 08 Other Asian

- 09 African

- 10 Arab

- 11 Other (give details)

- 12 Mixed origin

- 13 Refused.

Source: Question Bank topic commentary on Ethnicity, Martin Bulmer.
See: http://qb.soc.surrey.ac.uk/topics/ethnicity/ethnicintro.htm

Nevertheless, in most topic areas, there are questions contained in the Question Bank that do comply with the content of the commentaries, and thus could be classed as accurate.

2.3 Potential pitfalls of using pre-existing questions

The use of pre-existing survey questions is unfortunately not free of drawbacks; researchers ought to be aware of these when undertaking any question 'recycling'. First, the availability of information on responses to questions is limited, and in many cases, restricted only to those that are covered by the Nesstar Catalogue. Second, although extensive, the questions available from the Question Bank are not exhaustive, so there is no guarantee that users will find the exact item they are seeking. However, as previously mentioned, adaptation of other questions (as appropriate) is a potential solution to this problem.
A third pitfall is that the routing of a questionnaire can have an effect on individual questions, particularly with regard to their wording. One outcome of such routing is that there will always be some questions which only a subset of the survey's sample was asked (so, only those who gave a certain response to another questionnaire item, for instance). An example of this could be that only those who did not select 'White' as their response to a question on ethnicity could be asked a subsequent question on discrimination based on their skin colour. Problems could arise from this if a researcher was interested in measuring this sort of discrimination experienced by whites and non-whites alike. Again, as above, a possible solution to this would be to adapt the wording of such a question so that it could be applied to both groups. On top of this routing issue is contextual understanding, or context effect. Respondents may be influenced to answer a question differently because of the sequence of questions prior to the one that the researcher is interested in resulting in different responses (Biemer and Lyberg 2003:129). Researchers therefore need to have a very good understanding of the context that the original question was asked in and how it could have been affected by previous questions (See also Seale 2004). Generally this is fairly easy information to find out by looking at the Technical reports which are available through the UK Data Archive. However these can be large and laborious to search through and the information in each varies considerably.
A fourth and last pitfall to be aware of is copyright issues; with most questions these do not pose any problems, but with specific measurement instruments like the SF36

health questionnaire they may be more salient, thus researchers should investigate this before attempting use.

Despite the fact that these pitfalls exist, using existing survey questions is a perfectly feasible option in the design of questionnaires; researchers should simply ensure that they are taken into consideration when doing so.

3. Implications for data quality

3.1 Reliability of questions

One major caveat of using pre-existing questions is the potential result of low data quality if measures (or questions) are unreliable. There are three main types of reliability (Neuman 2006:189) that users need to consider and assess questions for when doing so; the first is *stability reliability*. This is concerned with whether a measure or question yields the same response at different points in time. Topical questions are likely to have low stability reliability, as some respondents may have much stronger opinions on issues if they are 'hot topics' in the news at the time of the survey fieldwork than if they have had little or no recent media coverage.

The second type is *representative reliability*; does a question yield the same response when asked to different subgroups of a population? This may have to be considered when dealing with closed-ended ethnicity questions like the one in Fig. 1. If such a question is to be administered cross-nationally, it may not be sufficient to 'recycle' the ethnicity question from the UK Census of Population, as the response categories available may not sufficiently reflect the ethnic and racial composition of all of the countries being surveyed. If this is the case, members of certain ethnic groups may find that there is no relevant response to select, and thus the researcher would have to conclude that this question has low representative reliability.

Equivalence reliability is the final type; this is concerned with whether a measure or question yields consistent responses across indicators of the same concept. An example of this is where a researcher may be interested in measuring subjective well-being, using questionnaire items on both happiness and satisfaction (which could be said to both be indicators of the concept). While these two variables may be strongly associated, questions on each may not necessarily yield identical results, so would not have equivalence reliability (Lessler and Kaalsbeek 1992, Nunnally 1970). To summarise, researchers considering the use of pre-existing questions in their own surveys must assess them for all three types of reliability and recognise the effects that any potential low reliability may have on the data ultimately obtained from them.

3.2 Validity of data obtained from existing questions

There are also implications for data quality in terms of the validity of data obtained from existing questions (Campbell and Stanley 1963). Here, questions need to be considered in terms of four types of validity. Firstly, *face validity* is high if it is generally believed that a question is (or appears to be) a good measure of a concept. Remaining with the example of the measurement of subjective well-being, it could be said that a questionnaire item on how happy one feels appears to sufficiently measure this. Whether or not face validity is high here may be open to debate, as some may feel that a measure of satisfaction could also perform the same function.

Second, *content validity* is concerned with whether a measure or question represents a concept's full definition. For example, if one defined subjective well-being as being concerned with both happiness and satisfaction, a measure of well-being asking only about satisfaction would not have high content validity.

The third type of validity is *construct validity*, that is, whether multiple indicators of a measure produce similar or identical results. Thus, construct validity would be high if scores were the same for a measure of a respondent's self-rated happiness and a measure of the respondent's friend's perception of it. Conversely, it would be low if there was a lot of disparity between the two scores.

Concurrent validity is the last type, and this is a form of *criterion validity*. Criterion validity is considered to be high if a measure or question conforms to a certain standard or criterion; stemming from this, concurrent validity is achieved if a question is associated with a pre-existing indicator or question that is already seen to have high face validity. This will occur with questions that conform to those included in the Office for National Statistics' Question Harmonisation Programme (http://www.statistics.gov.uk/about/data/harmonisation/default.asp). This is a set of questions that provides a standard means of collecting data on certain topics; these include basic demographic and household information, ethnicity, socio-economic status, educational attainment, income, social capital and internet access, amongst others.

As with reliability, all four types of validity need to be considered by researchers when 'recycling' pre-existing questions for use in their own surveys. Again, questions should be assessed for this and the effects of any low validity on the quality of data obtained from these questions must be recognised.

4. Conclusions

Currently, many researchers (particularly those in academia) feel the need, or even a pressure, to be 'original' with regard to questionnaire design and the construction of survey questions for the purpose of measuring aspects of the social world. This sentiment is felt despite the feasibility of 'borrowing' or 'recycling' existing survey questions for use in one's own survey, and thus preventing re-inventing the wheel. There are several implications of this that must be taken into account, particularly concerning reliability and validity, and ultimately, quality of data obtained from these questions. However, question 'recycling' also has many advantages such as savings that can be made in terms of both time and money, and the removal of any need for question testing. Thus, it is imperative that researchers across the board are made more aware of the availability and benefits of existing survey questions from resources like the Question Bank.

References

Biemer, P and Lyberg, L. (2003), *Introduction to Survey Quality,* New Jersey: Wiley.

Burgess, R.G. (ed) (1986), *Key Variables in Social Investigation*, London: Routledge.

Campbell, D.T. and Stanley, J.C. (1963), *Experimental and Quasi-Experimental Designs for Research*, Chicago: Rand McNally College Publishing Company.

Dale, A. (2006), "Quality Issues with Survey Research", *International Journal of Social Research Methodology*, 9 (2), pp. 143-158.

Goertz, G. (2006), *Social Science Concepts: a user's guide*, Princeton NJ: Princeton University Press.

Lamb, J (2004) "Technical Help for researchers from ESRC and ONS", *Labour Market Bulletin,* 18*,* Department for Employment and Learning, Northern Ireland.

Lessler, J.T. and Kaalsbeek, W.D. (1992), *Non-Sampling Error in Surveys*, New York: Wiley.

Neuman, W.L. (2006), *Social Research Methods: Qualitative and Quantitative Approaches*, Boston: Allyn and Bacon.

Nunnally, C.J.Jr. (1970), *Introduction to Psychological Measurement*, New York: McGraw Hill.

Rose, D. and Pevalin, D.J. (eds.) (2003), *A Researcher's Guide to the National Statistics Socio-economic Classification,* London: Sage.

Sartori, G. (ed) (1984), *Social Science Concepts: a systematic analysis*, London: Sage.

Seale, C. (2004). "Using Data Archives for Secondary Analysis", in Seale, C. (ed) *Researching Society and Culture,* London: Sage, pp. 355-365.