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COGNITIVE MODEL OF THE QUESTION-ANSWERING PROCESS AND DEVELOPMENT OF PRETESTING

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Our testing services are mainly used by Statistics Finland's Social Statistics unit and by external social research institutes. It is, therefore, important to develop our testing activities so as to be of interest to different customer groups. Finnish social scientists are not very interested in the cognitive theory when interpreting test results, and have criticised the theory underlying the testing (cf. Ahola & Lehtinen & Godenhjelm 2002). My presentation discusses the two main criticisms as well as methods by which our results could be made more interesting for our clients.

Two critical comments

First, the cognitive model in which the question-answering process is seen as a four-phase process (comprehension–retrieval–judgment–response) should be enhanced by taking better into account the ways respondents of different subsets interpret the reasons for asking specific questions. People do not reply to any questions without thinking why they were asked, what the answers will be used for and who will be using them.

Although questionnaires must be pretested, there will always be questions that all people do not quite understand, or they will want to know why a particular question has been asked: what exactly are the researchers after. Theoretically, all this discussion about answers is disallowed because it does not take place identically in each interview, and there are personal differences between interviewers. However, in practice it is impossible to eliminate the element of human interaction that is present in the filling of a questionnaire (e.g. Alasuutari 1998).

The fact that one is responding to a survey is not a sufficient interpretive frame for answering questions. Different questions evoke different frames within which answers are given and these may also vary from one individual and population group to another.

People give their answers in terms of these frames. Likewise, because people believe that surveys may serve them or the society at large, for instance by conveying messages to decision-makers, they may respond in ways which best serve their interests.

The second criticism is that as well as for a cognitive analysis, interviewing also calls for a socio-cultural analysis, in terms of what certain conversation means in a given situation (Ronkainen 2002). The interviewee's categorisation of the situational interaction will profoundly influence what subjects will be addressed, how much information can be given, how many personal secrets should be revealed, what speech forms may be used, etc. The way respondents frame the event will significantly affect their interpretation of the questions and thus the nature of the answers.

According to the critics, some interviewees find the speech community of a survey interview (cf. Briggs: interview as a communicative event) an outstandingly good mode of talking because it allows them to say things that in a deep interviewing situation would require an entirely different vocabulary and trust relationship. The question then arises of what possibilities the survey interview situation opens for the respondent and what possibilities it excludes. There is no such speech community that would not in one way or other open and close options on what can be said and how. "If I tell a friend about my heartaches, I have certain options for doing it, but acceptance of this discoursive world means that my friend then has to respond in a certain manner, thereby encouraging me to pour out my heart. If I were to talk about the same thing at the pub, I would inevitably do it mockingly, giving details of all the partner relationship therapies we have undergone, for example. Neither account of these is inferior in terms of authenticity. For me, as the person telling them, they represent different ways of reflecting upon my experience" (Ronkainen 2002).

What is then the nature of the information produced in the survey interview situation?

Received comments and previous workshop discussion

I will next try to locate the received comments into the framework of the previous discussion at the last workshop. At the last QUEST Workshop, Elizabeth Martin (2001) described three theoretical models or approaches that she believed underlie the understanding of the question-answering process. She identified also the issues and aspects of survey questions that are implied by each theoretical perspective. Finally, she summarised whether the question evaluation methods allow us to deal with these issues.

Elizabeth Martin organised the theoretical perspectives into the question-answering process into three models or approaches: the model of the standardised survey interview,

the model of the interview as social interaction or discourse and the cognitive process model. The different approaches set different kinds of objectives for the evaluation of survey questions. According to Martin, today's pretesting methods best answer questions produced with the standardised survey interview model and the cognitive process model, although the evaluation of certain stages of the cognitive process model still deserves more theoretical consideration. Martin suggests that today's pretesting methods produce poor answers to questions generated by the model of the interview as social interaction.

According to Martin the approach considering the interview as social interaction is not a uniform theoretical perspective, but a sum of many perspectives focused on trying to understand the social context of an interview. Whereas older theories see the context as an error source in survey responses, newer theories do not analyse social interaction this way but instead see it as a resource for mutual understanding. The building of a meaning in an interview has been viewed as social discourse rather than as a cognitive process. The two comments presented above associate with the same questions that the newest theories concerning the social interaction and discourse of surveys bring to the fore.

Could test data be used from various perspectives?

We use focus groups interviews, cognitive interviews and systematic questionnaire evaluations to study the data collection tools, terminology, classifications and background concepts. Our commonest task is testing of draft questionnaires. We design the tests and interpret the results using the cognitive model and theory. Our cognitive testing still needs further development that we can bring the model to life and ask good test questions (cf. Martin 2001). The timetables for analysing responses to interviews conducted for the purpose of improving data collection tools are usually very tight, which is why we only apply the cognitive model in their interpretation.

However, besides as pretesting data, cognitive interview data can also be analysed by understanding the question-answering process as social interaction. Cognitive test interviews can also generate a lot of "superfluous" discourse as, for example, happened with interviews conducted for the purpose of developing the measurement of values. In certain projects we also try to collect such data that can be analysed from the perspective of social interaction and discourse. In these cases we attach to the test interviews additional elements allowing more "open" conversation about the studied phenomena or concepts. For example, when we tested the EU-SILC survey questions measuring subjective poverty, we added to the test questions concerning the way people talk about poverty. The study sought answers to the questions of what poverty is, how people categorise it and whether people felt themselves poor if statistics claimed they were

(Kallio 2004). The study was a good example of the fact that cognitive test data can also be used to study cultural discourses.

Last summer we collected data for an indicator project, and these are currently being analysed. The study was based on cognitive testing of two international indicators, that is, questions measuring monthly pay and the experiencing of health. These indicator questions had been embedded into the EU-SILC questionnaire in order to make their asking plausible in the context of a survey interview. We also compared the impact of two different explanations of the purpose for which the collected data would be used: 1) the data would be used for a national indicator and 2) they would be used for an EU indicator. Next I will describe this pretesting more closely.

Design of the testing of indicator questions

The underlying notion in the indicator project was that the behaviour of an individual person in each situation is dependent on that person's definition of it. Thus, answering questions also requires from the respondent inferences about the interviewer's intentions and about the reasons for asking the questions. Norenzayan and Schwarz (1999), for instance, have shown empirical results on how the institution the interviewer represents influences inferences about the meaning of a question. When respondents were asked why they thought mass murders took place, their answers stressed personality aspects or social factors depending on whether the questionnaire had been printed on the stationery of a psychological research institute or a social research institute. The answering was, therefore, influenced by the respondents' "knowledge" or mental picture of what the inquiring institution would do with the answers.

In our project, the comparative institutions were the European Union and Statistics Finland. The respondents were explained the purpose for which the data would be used in the contact letter, while making an appointment for the interview and at the beginning of the interview. Besides by cognitive testing, the interviewing protocol was steered by the following questions: How did the respondents perceive the data collection situation and the use of the data? What kinds of mental images did they have of Statistics Finland and the EU as data collectors? In addition, the perceived importance of the data collection, and trust in the survey topic and methods, and in the conductor of the interview were discussed in the interviews.

Our samples were drawn for the data collection from the areas of *Helsinki and Pohjanmaa (Finland's strongest anti-EU region)*. Efforts were made to get equal numbers of men and women interviewees aged 25 to 64 from all socio-economic groups. The

sample was split into two groups – one of which was told the data were collected for the EU and other that they were collected for national purposes. The conducted interviews numbered 43, for half of which the survey was justified by EU needs and for the other by national needs.

Comprehension of the interview situation was studied with the semi-structured theme interviewing method, understanding of the indicator questions was tested using the cognitive interviewing method and the standardised interview portion was conducted using the regular structured interviewing method. The interviews in Helsinki (23 persons) were done face-to-face, at the respondent's home or workplace or at Statistics Finland's premises as preferred by the respondents. The interviews in Pohjanmaa (20 persons) were conducted as telephone interviews.

The speech community in surveys of Statistics Finland?

The preliminary findings from comparing the face-to-face interviews was that the given justification, that is, EU use or national use, did not influence the answering. The respondents did not differentiate between the EU indicators and the national indicators. The participants of the telephone interviews paid next to no attention to the contact letter or to the justification for the purpose for which the data would be used. At the end of the telephone interview, some respondents did not even know who had commissioned the interview, and were not interested in finding out, either.

The face-to-face interviews produced interesting information about ordinary people's trust in questionnaire surveys and especially in surveys conducted by Statistics Finland. So, the factor influencing the interactive situation of an interview is the institution conducting the interview – an official, government agency, Statistics Finland – and the mental images respondents have of the way the data will be used.

The impact of the organiser of the survey is depicted well by one respondent's answer in which he stresses the social importance of Statistics Finland's data collecting and the influencing opportunity this gives to an individual person:

Interviewer (I): What made you decide to take part in this survey?

Answer (A): Well, I just generally consider it important (…) After all, Statistics Finland is an official interviewer… or maker of surveys, so that if there are things that are important in society, you can say what you think of them, I mean ordinary people have few opportunities for saying what they think, and by coincidence Statistics Finland also

recently conducted a survey at work and my workmates sort of thought it would not be worth answering but in my opinion responding to these should be taken seriously.

The answers contain several examples of this type. Participation in an interview conducted by Statistics Finland was almost regarded as a civic responsibility. It was viewed as a means of influencing decision-makers in society. Therefore they considered it **important** to respond to Statistics Finland's surveys:

I: What about when we rang you, what influenced your decision to participate then, was it the phone call or the letter you got?

A: I thought it my civic duty to do this thing, nothing more complicated, as I hadn't actually forbidden it.

In contrast, some respondents did even express reservations about other interview and survey organisations. Diverse market research surveys were especially regarded as dubious and unreliable.

However a couple of young persons preferred to participate in market research surveys instead of Statistics Finland's surveys. They thought that the topics of Statistics Finland's surveys were boring, but that they nevertheless, produces important data. However, compared to these other alternative organisations they regarded Statistics Finland as a most reliable and the safest. They had confidence in the way the data would be used.

The perceived **confidence** in the data collection situation seems to have been influenced by trust that the answers would be used anonymously, belief in the importance of the data collection (the obtained data would not used for making quick money) and the data collection method (face-to-face interview). Many respondents thought that they would probably talk about the same matters differently in a telephone interview because would not know whom they would be speaking to.

The subject of sensitivity was discussed in connection with the testing of the indicator questions. We presumed that the topics of pay and health in the indicator questions would be somewhat sensitive in the Finnish culture. Surprisingly enough, the interviewees defined Statistics Finland's face-to-face interviewing situation as confidential enough for them to talk about their income which they regard as a sensitive subject they would not discuss with their friends or acquaintances. The survey interviewing situation gave them the opportunity to talk about matters they would not discuss with friends or acquaintances. Some respondents regarded health as a more sensitive subject than pay, while others thought the opposite.

All in all, it would seem that at least as far as the face-to-face interviews are concerned it would not be appropriate to talk about a general survey speech community but about a speech community in interviews of the institution conducting the survey. It would be interesting to see this way of defining an interview situation within the framework of an international comparison.

Conclusions

Survey responses are used either as basic data for statistics or as research data for social studies. A statistical table without interpretation tempts treating a survey response as a fact representing both social reality and truth about differences between population groups. Survey responses collected with different interviewing methods become easily transformed into comparable facts in a statistical table. The conversion of mass interview responses into statistics is often a technical black box, on whose validity no information is generated, or is at least not reported or seen in interpretations. This may contain the presumption that the right measuring instruments used in the appropriate manner can produce truth that is free from errors. The aim in pretesting questionnaires is to support the above described way of using survey responses in order to develop questions that are as unambiguous as possible. It is not customary to use the information describing the question-answering process in the interpreting of results.

At the end of her article, Martin (2001) asks whether the standardising (stimulus-reaction) model on which surveys are based should be corrected or rejected altogether, because the two other theoretical perspectives have increased our understanding of survey answering as a cognitive process and as social interaction. However, changing of the current interviewing method into a conversational one in respect of questions other that so-called factual ones would seen an unlikely development direction. Instead, the trend would seem to be towards ever more efficient production of mass data. For example, the computer as an interviewing tool seems to support in many ways the stimulus-reaction based model of the question-answering process.

Cognitive pretesting of questions helps to design questions that are as unambiguous as possible. What if understanding the question-answering process as social interaction were to be used in the interpreting of survey answers? This would, of course, be more prudent for the research use than for the statistical use of survey responses.

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