

What interviewers think about Blaise III?

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Introduction

In Statistics Finland (SF), Blaise III was introduced in May 1997 simultaneously with the new laptops. Previous laptops were not powerful enough for Blaise III instruments and therefore the conversion was not possible earlier. Blaise III applications replaced Blaise 2.x applications gradually so that all new questionnaires were written by Blaise III, and by the end of same year practically all old questionnaires were converted to the new platform. The conversion was carried out so that no visible changes were made to the user interface of interviewers' laptop (see Kuusela, 1995). Of course, some changes were necessary in the initiation of an interview but they were embedded in the shell software and they did not have an effect on the interviewers' daily routines.

Before Blaise III was implemented, the user interface of DEP was translated in Finnish and the interface was adjusted both to Finnish language (changing hot keys), and to the object-based CAPI information system of Statistics Finland, as far as it was possible. For instance, most of the items in the File menu were not needed anymore, because of the architecture of the information system.

In Blaise III there are many new functions, but basically interviewing by a Blaise III instrument does not differ much from a 2.x instrument. The major change is the interface of DEP, which in Blaise III is based on the drop-down menus and 'hot keys'. On the other hand, there are many minor changes, which have a direct effect on the interviewer's usual working routine.

Still, the nature and the extent of the changes in the data entry interface were considered to call for one-day interviewer training. The training included only the use of DEP menus and the new functions in DEP. Additionally trigram coding was included in the training because it was not applied earlier. In the same context, also the new coding procedure was taught.

It is self-evident that interviewers are experts in interviewing. However, it is not always clearly recognised that they are also experts in the use of survey software and their opinions should be an important factor in the design of the interface of the data entry software. In many organisations, lots of effort is put on improving the quality of surveys. The actual data collection is a critical part in the quality process that may lead to many kinds of errors and biases if disturbed some way. Interviewing as such is a delicate occasion, especially in a face-to-face interview, and the technical apparatus should be as transparent as possible so that it does not interfere with the interview. Otherwise, the benefits gained by CAI may be lost.

Despite the evident importance of the usability testing of interviewers' interface there appears to be no reports or studies on that. However, the user organisations have little or no possibilities to influence the functions or appearance of survey software. Yet, monitoring interviewers' feelings

and opinions is possible. In that purpose the interviewers of SF were asked about some features of the new software.

Study material

In June 1998, approximately one year after Blaise III was introduced, interviewers were asked about their experience and feelings of the new system. Nearly all interviewers (n=133) completed a questionnaire where they were asked how they use different DEP function and what they think of the new features. In the present study are included also the 15 new interviewers hired after the introduction of Blaise III and hence they had not use Blaise 2.x.

The longer-standing interviewers were mostly middle-aged women and most of them had four years experience with CAPI. The new interviewers were younger women and in their selection was applied the experiences on how the old interviewers had learned the use of the computer (see Kuusela, 1996). For instance, all the new interviewers were already familiar with computers and they had more education than the older interviewers. Comparing the answers of the new and the longer-standing interviewers had been interesting, but unfortunately the results based on 15cases are not very reliable.

Results

The CAPI information system in SF is based on object-based architecture (see Kuusela and Parviainen, 1997, Gray, 1995). That means that every interview is stored in a separate file and the shell module initiates the interview and gives DEP the sequence number of the sample point. The sequence number connects the form to the sample frame. If the sequence number in an opened form is changed, the link disappears and the probable consequence is that the case will end up as technical non-response.

DEP asks the primary key regardless whether it was given during the initiation or not, and touching any key (except enter) while the field is active will erase the entire field. Then, if the interviewer does not remember the (sometimes eight digits long) sequence number, the case will be lost. Also other organisations have faced the same problem (Sjodin, 1997). During the training the danger was brought up and stressed many times and interviewers were advised how to bypass it. However, occasionally accidents have happened. The interviewers' experiences were asked by the following question:

Question: The sequence number is shown every time during the initialisation of an interview and you must not change it. Have you ever changed it by accident?

<i>Never</i>	<i>88%</i>
<i>Sometimes but rarely</i>	<i>12%</i>

The result means that 12% of interviewers have sometimes accidentally changed the sequence number, but it is not clear how many interviews actually have been lost. Probably not a very large amount. On the other hand, the result shows that the danger is real and some cases will be lost even in the future unless the primary key field may be protected or hidden.

Selection of menu items

The interface of DEP, i.e. the menu system, is in close resemblance to many common and popular software and, of course, to Windows. Therefore it should be familiar to many people, especially to ADP professionals. However, interviewers are not ADP professionals. In fact, for most of them the laptop is the only computer and the survey software is the only application they use actively. Consequently, the menu system with its implications and its use was new to most interviewers.

Question: Many functions may be invoked either from the menu or by a 'hot key'. Which way do you use more often?

<i>Mostly from menu</i>	24%
<i>Both ways</i>	38%
<i>Mostly by hot keys</i>	38%

Question: In case you use the menu, do you select the item by arrow keys and enter or do you use the highlighted letter?

<i>Mostly arrow keys</i>	63%
<i>Both ways</i>	22%
<i>Mostly the highlighted letter</i>	13%
<i>Don't know</i>	2%

Question: In general, do you find inconvenient the use of menus?

<i>Yes</i>	9%
<i>Don't know</i>	17%
<i>No</i>	74%

The newly hired interviewers seemed to use more often hot keys whereas the more experienced interviewers more often turned to menus. Even when the new interviewers open a menu they select the item more often by a highlighted letter (i.e. hot key) while the old interviewers usually make the selection by the arrow keys.

In the average, the newly hired interviewers were more familiar with computers than the long-standing interviewers, although none had used CAI software before. That may partly explain the different behaviour of the two groups.

Effect of the screen layout

In SF, only the basic screen layout has been applied, so far. The only screen item that has been different from one questionnaire to another is the location of the horizontal line dividing the screen in two panes. Additionally, throughout each questionnaire only one layout has been applied; that is, separate questions do not have different layouts in a questionnaire. Consequently, sometimes long questions and/or long lists of answer categories are not shown completely. Usually this has been pointed out in the question text, but sometimes the author has forgotten to include the remark. Then, in the worst case, there is no way to notice that part of the question is missing.

Question: Long questions and/or long lists of answer categories are not shown completely on the screen and that has not been indicated every time. Have you faced problems due to that?

<i>Never</i>	32%
<i>Sometimes but rarely</i>	61%
<i>Repeatedly</i>	7%

Less than one third of the interviewers have not faced problems with long questions. Bearing in mind that even researches make mistakes, this feature of Blaise III is a potential source of serious errors. In some cases there has been doubts whether the cause of a curious distribution was a partly 'hidden' list of answer categories.

Question: Scrolling the text of the long questions and/or long lists of answer categories is possible by changing the active pane by pressing F6. Have you experienced it too complicated? Have you faced problems with that?

<i>Never</i>	42%
<i>Sometimes but rarely</i>	56%
<i>Repeatedly</i>	2%

The use of F6 to display the whole question text is appears convenient enough, but many interviewers have expressed that in Blaise 2.x this was handled in a better way. In Blaise III, this problem could be solved by different screen layouts, but their definition is so complicated that in the usually very tight time limits it is not possible to design them.

Question: The question text may be shown in a separate screen by pressing F9 and the screen may be enlarged by F5. Have you used this option?

<i>Never</i>	41%
<i>Sometimes but very rarely</i>	52%
<i>Repeatedly</i>	7%

Displaying the question text by the F9&F5 key combination is awkward and its applicability is even more restricted because of the fact that the interviewer cannot make any selection in it. Therefore few interviewers use it.

Question: In multiple choice questions answer categories may be selected by first pressing key F6 and then by arrow keys. Have you used this method?

<i>Never</i>	1%
<i>Sometimes but very rarely</i>	10%
<i>Repeatedly</i>	89%

The selection and marking the answers in a multiple choice questions by arrow keys suits well in the situation, because both presenting and answering this type of questions if different from the other questions types.

Interviewing with Blaise III

Three questions dealt with the interviewing practice with Blaise III, that is marking the answers, browsing forms and moving in a form.

Question: Have you faced problems with opening forms, interrupting interview or with closing forms?

<i>None or very little</i>	88%
<i>Sometimes but not disturbingly</i>	11%
<i>A little, disturbing my work</i>	1%

Question: Have you faced problems with marking answers or moving in forms?

<i>None or very little</i>	71%
<i>Sometimes but not disturbingly</i>	24%
<i>A little, disturbing my work</i>	5%

Question: Have you faced problems with browsing, checking or correcting completed interviews?

<i>None or very little</i>	80%
<i>Sometimes but not disturbingly</i>	15%
<i>A little, disturbing my work</i>	5%

The distributions are nearly the same as with Blaise 2.x that was asked a few years earlier. In general, it seems that no major problems exist. The reason is that this part of Blaise is very similar in both versions. This conclusion is strengthened by the fact that the new interviewers reported more often having faced problems.

Computer assisted coding

It is a common practice in many surveys of SF that interviewers code at least the occupation and community. Also some other answers are coded during the interview. For instance countries in the travel surveys. Previously, with Blaise 2, only the alphabetical coding was applied but in the connection with the change of Blaise version also trigram coding was introduced.

Technically the coding in Blaise III is different from the coding practice previous in earlier versions. Therefore, in the training, a considerable amount of time was used to teach the use and the possibilities of the new method.

Question: Along with the change of the Blaise version also the coding method was changed. Was the previous method better or worse than the new one?

<i>Previous was better</i>	13%
<i>Don't know</i>	47%
<i>Previous was worse</i>	40%

Question: Now we use two different coding methods, trigram coding and alphabetical coding. How do you experience the use these methods?

<i>Trigram coding is easier</i>	13%
<i>No difference</i>	58%
<i>Alphabetical coding is easier</i>	27%
<i>Don't know</i>	2%

It seems that there was some discomfort with the new coding method. Nearly half the interviewers could not say was the new method better or worse than the previous one. The reason may be the coding interface that is not very user-friendly.

Also interviewers' attitudes on the trigram coding was slightly diffuse, although theoretically it should be much better the alphabetical coding. Unfortunately interviewers were not asked to specify why some of them found the alphabetical coding easier than trigram coding.

Three quarters of the new interviewers found no difference between the methods whereas nearly 30% of the longer-standing interviewers found alphabetical coding easier.

General impression of Blaise III

In addition to the single features, the overall appearance of Blaise III is different from Blaise 2.x. For Instance, the wider possibilities to use colours gives many new possibilities for the designers and the colours make the looks of DEP more appealing. Consequently screens contain more information which is fairly easy to grasp. Also some additional new functions (e.g. for navigation) facilitate interviewers work. Some features interviewers cannot see because they affect the structure of a questionnaire, but they may make the forms functionally better, which on turn interviewers notice. This area of Blaise is difficult to cover with specific questions. It was hoped that the questions below cover this aspect:

Question: Generally speaking, what do you think of Blaise III compared with the previous version?

<i>Blaise III is much better</i>	21%
<i>Blaise III is better</i>	69%
<i>Versions are equal</i>	9%
<i>Blaise III is worse</i>	1%

Question: Have there been problems in the use of Blaise III?

<i>Yes</i>	12%
<i>No</i>	88%

The specified problems were diverse and diffuse. Most reported problems were caused by unstable or otherwise badly designed questionnaires, not directly by Blaise. Yet, some interviewers reported confusions with the use of the F6 key.

Interesting option in Blaise III is the inherent calculator but it was not clear would interviewers accept it.

Question: In DEP, there is also a calculator. Have you used it?

<i>Yes</i>	11%
<i>No</i>	89%

Judged by the first impression, which was not very enthusiastic, it was slightly a surprise that 11% of interviewers had really used the calculator. Probably its usage would be more frequent if copying the results to the form was easier.

Interestingly enough, the newly hired interviewers used the calculator more often.

Most of the major surveys carried out by SF are both in Finnish and Swedish. When Blaise 2.x was in use this was solved by installing two surveys in the bilingual interviewers' laptops. The result was problematic in many ways and the possibility to use several languages in a single questionnaire was a major improvement. No one of the 15 bilingual interviewers regarded the old version better and only a few problems were reported. They were mainly caused by problems in switching the language in the middle of an interview in questionnaires, which included imputed question texts.

Discussion

Overall, Blaise III data entry module was accepted well by the interviewers and they considered it better than previous Blaise versions. Some considered Blaise III as a major improvement.

Some functions were not accepted as well. For instance, interviewers' opinions of the coding module were ambivalent. Probably the reason is the interface that is rigid and a little awkward. A feature that may be a source of errors is the screen that sometimes 'hides' part of the question text. Especially when part of the list of answer categories is neither shown nor indicated the danger is real.

As a final observation, we must remember that this study demonstrates only one aspect. Interviewers compared Blaise III to the previous version Blaise that they had used for many years. The results may have been different if interviewers were asked to compare Blaise to other CAI software or to some totally different software.

As noted earlier, data capture is a key element in improving the quality of surveys. One part of this is the technical apparatus they (have to) use. It should be as transparent as possible so that interviewer may concentrate on interviewing and not having to think the functions of the interface. In the development of data entry interfaces interviewers' opinions and usability testing is important.

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The Health Survey for England -- Preserving consistency over multiple data sources

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1. About the Survey

The Health Survey for England is sponsored by the Department of Health. It is a continuous survey conducted every year throughout the year. A new sample is issued every month. The monthly sample size for the 1998 survey is 1140 addresses. The survey started in 1991 and has been running continuously since 1993. The SCPR has conducted the survey since 1994 in collaboration with the University College of London.

The Health Survey for England is a household survey in the sense that most of the household members are eligible for interview. The current rules for eligibility allow for ten adults and two children aged two to fifteen. Each interview starts with a household section to collect household level information. The interviewer will then select up to four respondents for each session of **concurrent interviewing** to gather person level information. The person level data is partly collected through self-completion booklets.

Concurrent interviewing is a method for increasing the efficiency of household surveys. The sessions are built up by a succession of tables that enables the interviewer to progress with more than one respondent at a time. The tables are short sequences of questions which are repeated for each respondent in the session.

On agreement, each respondent will be visited by a nurse. The nurse records various measurements and collects samples. The samples are then sent to a laboratory for analysis. Each sample and measurement requires a signed consent by the respondent. Because of the nature of the survey, there is an obligation to report the medical results to the respondents, who are also asked for their consent for the results to be given to their GP (physician).

Apart from the laptops and any paper documents, the interviewers and the nurses carry a fair amount of equipment. The interviewers measure height and weight using stadiometers and electronic scales. The nurses have Dinamaps for blood pressure readings; various tape measures; equipment for taking blood samples; and straws for saliva samples.

2. Problems in the Old Days

It is of vital importance for the quality of the survey that the **person identifiers** in each part of the data are consistent and correct. The Health Survey for England has an unusual number of data sources that contribute to the final data set. In addition to the main and nurse interviews, there are self-completion booklets, consent booklets and various laboratory results.

This has always generated a vast effort to detect and solve inconsistencies, even once the main questionnaires were converted to CAPI in 1995. All the information passed between the

interviewer and the nurse was on paper. An error could occur each time a serial number or a person number was transcribed. The only measure used to counter this problem was the use of the respondent's date of birth to supplement these internal identifiers. For this reason the date of birth was typically recorded seven or eight times per respondent. Every time an inconsistency was discovered a very complex set of rules was applied to resolve it.

The data collected with the nurse paper questionnaire also required a substantial amount of editing. As every measurement is repeated at least twice there was an obvious risk of error from misreading the equipment, recording the wrong value or recording a value in the wrong place.

3. Nurses going CAPI

The 1998 survey faced the need to minimise the risk of such inconsistencies. By converting the Nurse Questionnaire to CAPI (Blaise III), we expected a significant reduction in the editing work. Most of the edit checks on consistency can be implemented in the data model. There are also the usual advantages of CAPI compared to paper such as enforcing the route; control over value ranges; and the possibility of recording the time spent interviewing. All the nurses are now equipped with laptops and modems and are given the appropriate training.

Converting the Nurse Questionnaire to CAPI reduces the risk of internal inconsistencies. But it does not actually address the problem of inconsistencies between these different sources of data. A mechanism is required to pass data from the interviewer to the nurse in a way that is more reliable than paper forms. The situation is very similar to that of a panel survey. To control for consistency, data from previous waves are sent out for each new wave.

Ideally, the nurse starts each case with all the relevant information already present. The nurse interview is then coupled to the main interview so that, by definition, the identity of each person is consistent between the two.

We set out to achieve this by amending our in-office system. From the incoming main interviews, we generate data records which are made available to the nurses to download on to their laptops. The Survey Management system writes out ASCII format data files and the appropriate laptop identifier. The ASCII files are then converted to Blaise files for the nurse data model to use as external information.

This **transfer information** is a household level record with a set of person level sub-records. It stores the name, age, sex and date of birth of each eligible household member. For children aged two to fifteen, it also holds information about the parents in the household.

4. Time Is Of The Essence

Our initial approach was to let the transfer mechanism drive the allocation of cases to nurses. That is, the nurses were only given access to the cases that had passed through the in-office system. This hard coupling guaranteed the consistency between the main and the nurse interview.

However, there were three main time factors that ruled out this approach: