CHAPTER 4

FUNDAMENTAL PRINCIPLES OF QUESTIONNAIRE DESIGN

Successful questionnaires take the respondent through the interview in such a way that he or she finds it easy to give accurate answers to the questions. Too often questionnaires do not work because they fail to *see the questions from the point of view of the respondent.* Bad questionnaires are those where the designer has thought about what is wanted from the survey but where there has been insufficient consideration given to the respondent. This leads to questions which are too long, which are unintelligible (at least to the respondent), and which are too complicated.

Eight rules guide the framing of the questionnaire and these are:

1. think about the objectives of the survey
2. think about how the interview will be carried out
3. think about the knowledge and interest of the respondent
4. think about the introduction
5. think about the order of the questions
6. think about the type of questions
7. think about the possible answers at the same time as thinking about the question itself
8. think about how the data will be processed.

Think about the objectives of the survey

In some surveys, the interview programme is just one part of a multi-faceted study. A variety of research techniques could be involved, each contributing pieces of information to the jig-saw. Desk research, expert interviews, interviews with distributors and interviews with end-users, could all play their part. In an eclectic study of this kind, the components parts will have their own separate objectives and the success or otherwise of the whole survey will not depend solely on the interview programme. By limiting the objectives for each part of the survey, and by playing to the strengths of each method which is employed, a questionnaire for an interview programme will not grow too unwieldy since the questions which are within it will only be those relevant to that part of the study.

At the outset, the researcher should sit down with the proposal (the statement of what is to be achieved and the methods which will be involved) and list out the objectives appropriate to the interview programme. This will ensure that the survey covers all the necessary points and secondly it will begin the process of developing a rough topic list which will eventually be converted into more precise questions.

For example, the proposal may state that an objective of the study is to determine what people think of a company and its competitors. The researcher should jot down, in rough, an outline of the questions which will enable the objective to be met, in a simple form such as:

- What is the awareness of the company and its competitors?
- How many people have experience of using the company and its competitors?
- What do they think of the company and its competitors in general terms?
- What do they think of the company and its competitors in specific terms - that is on the quality of its products, the availability of its products, its prices?

Each of these questions opens up more questions and they too should be noted.

- Which competitors should the company be compared with? - all of them or just two or three of the major ones?
- What does experience of use mean? - that a person has bought the product ever? buys it regularly? buys it for someone else to use?
- What do we mean by `think of the company'? Are we interested in the strengths and weaknesses of firms or their brands or both?
- How do we want people to rate the companies? Should it be in words or on some form of scale?

In this way the researcher brings into focus key words which will help in the framing of the final questions. What is meant by *experience* and *use?* What is meant by *competitors?* What is meant by the word *think?* The thought processes are also turning the researcher's mind towards the possible answers - open ended comment, fixed responses or scalar ratings.

Frequently, at this stage, the researcher needs to talk again with the person who has commissioned the study to find out exactly what they want.

Think about how the interview will be carried out

At the time of designing the interview programme, the research method will have already been decided. The way the interview will be carried out will have a bearing on the framing of the questions. Face-to-face interviews undertaken by an experienced researcher can cope with more difficult questions than those which would have to be used in a self-completion questionnaire. For example, there is no problem asking open ended questions in face-to-face interviews while such questions usually generate poor replies in self-completion questionnaires. Questions laid out in a grid (see the examples in the sample questionnaire in Chapter 1) are much more suited to interviews which are administered by a trained researcher but are off-putting in a self-completion questionnaire.

It is worthwhile noting here that the type of researcher or interviewer who will carry out the interviewing will also influence the design of the questionnaire. A skilled and experienced interviewer can make even the worst questionnaire work while a very inexperienced interviewer will need a questionnaire which is buttoned down perfectly with instructions which say clearly what to do now and where to go next.

Think about the knowledge and interest of the respondent

Questions must be within the scope and interest of the respondent. It is not unreasonable for a computer company to want to find out what chief executives think of its (and its competitors') products. However, realistically, how much will the chief executive know and how much time will he be prepared to give to the subject? If it is believed that the chief executive will only have a broad view on computer companies and the performance of their products, then the questions should be framed to capture these general feelings and should not get lost in a tangle of questions which are outside the respondent's experience.

Think about the introduction

In street interviews as many as a half of the respondents who are asked to take part in the survey may refuse. In business-to-business surveys over the telephone the refusal rate varies considerably but is frequently around 20% to 30%. The greater the refusal rate, the greater the concern because researchers distrust survey results where the co-operation levels are below 50%. High refusals are costly in terms of time and money but they also can skew a survey if the refusers are in any way different to those who take part. The introduction to a questionnaire can win or lose the respondent and great care should be taken in its construction.

The introduction should make the interview sound interesting and at the same time it should give an explanation as to what it is all about. It may be appropriate in the introduction to provide assurances of confidentiality and to emphasise that there will be no follow-up sales pressure.

Examples of introductions are covered in Chapter 8 which deals with the layout of the questionnaire.

Think about the order of the questions

An important characteristic of a questionnaire is the sequence of questions. Questions at the beginning of the questionnaire may be designed to check that the right person is being interviewed, perhaps filtering respondents with a peripheral interest in the subject to a special collection of questions. Screening questions may be part of a separate `recruitment questionnaire' used solely to find suitable respondents before administering the questionnaire proper.

Questions should flow easily from one to another and this is helped if they are grouped into topics which follow a logical sequence, collecting respondent's thoughts in a sensible and orderly way.

In the body of the questionnaire itself, the questions should follow an obvious path and so help the thought processes of respondents. This invariably means moving from the general to the particular; from open ended questions to closed questions; from unprompted to prompted questions.

Questions should start with those which are relatively easy to answer while the more difficult or threatening ones are left to the end. This enables people to warm to the task of answering questions, gets them into their stride and prepares them for those which are more complex. There is also a build up of confidence during

the interview and an associated relaxation on the part of the respondent. This means that there is a greater likelihood that the tricky questions will be answered towards the end of the interview. It would be imprudent to ask the difficult and sensitive questions at the beginning of an interview as there is a strong possibility they result in the interview being abandoned.

Think about the types of questions

Long questionnaires which are made up entirely of closed questions and scales can be tedious for respondents who suffer frustration in not being able to express an opinion beyond the fixed choices of responses with which they are presented. Questions which are all the same are in danger of placing respondents' minds in a groove. In any case, they can lead to boredom or irritability and neither lead to quality responses. Texture should be given to an interview by building a variety of questions into the questionnaire. The researcher can choose from open ended questions, closed questions and scales and these are discussed in detail in Chapter 5.

Think about the possible answers at the same time as thinking about the question

As the initial questions are roughed out, and with the respondent firmly in mind, the researcher should think about the possible answers which will be received. It may seem presumptuous to attempt to determine answers before the very question itself has been framed, but this process will help tighten up the question. Since the whole purpose of a question is to derive an answer, it is essential that some thought is given to what these may be because they may, in turn, influence the shape of the question.

Think about how the data will be processed

When the interviewing is complete, the data will require analysing. In a survey involving hundreds of respondents, it is extremely costly to analyse the free ranging responses to open ended questions. Where there are hundreds of individual responses, they must distilled into a much smaller number of groupings in the search for meaningful patterns of response. In order that these replies can be grouped, a coding frame must be developed, which is a short list of cryptic phrases (a dozen at the most) reflecting the essence of the wordy answers. Each open ended response must then be looked at and given a code number which

assigns it to one or other of the cryptic phrases so that it can be keyed into the computer for analysis.

Coding is a laborious and expensive process. The answer written on the questionnaire may not make it absolutely clear what the respondent meant - and it is too late to ask for clarification. Making judgements on how to classify the open ended responses is a potential source of error. All this can be avoided if the answers are pre-empted and listed on the questionnaire ready to be circled during the interview itself. Using aforethought or a small number of depth interviews prior to the major study, it should be possible to build a list of most of the alternative answers.

Since data are keyed into a computer as numbers, it makes sense for the response codes to also be numbers which can be circled as opposed to boxes which are ticked. The example question which follows has not been tested and almost certainly there will be replies beyond those which are listed. These would be recorded on the final line (Others) and can be subsequently coded in the normal way. At least the majority of replies will have been catered for.

Q What are your favourite activities when on holiday? **DO NOT PROMPT. CAN MULTI-CODE.**

Go on the beach	1 (13)
Swim (not specified where)	2
Sun bathe	3
Play/sit around the pool	4
Sail/windsurf	5
Go walks/walking	6
Go sightseeing	7
Read books/magazines	8
Have a drink (alcoholic)	9
Go out for meals	10
Play with the children	11
Relax (not specified where)	12
Play sport (any kind)	1 (14)
Meet with friends	2
Do nothing	3
Others (Specify _____)	(15-17)

Most analysis packages emulate one of the first methods of automation used in data processing - the punched card. In the 1950s through to the 1960s a card with

80 columns was punched on a special machine so that when all the cards were stacked together, a needle could be passed through the holes which lined up. The cards with the appropriate answers could then be pulled out and quickly counted. The jargon which originated with the punched card is still used today for describing the method of coding up a questionnaire. The term `hole count' refers to a straight count of the answers to a question. Data are held in files known as `cards' and the codes which relate to individual responses are part of a column (the columns are identified by the number in brackets in the above example). Each column has a number and there can be up to 80 columns on a `card'.

It is necessary that the researcher who designs the questionnaire is familiar with the analysis package which will be used. For example, the following information may be required from a respondent:

Q What proportion of the products you buy are sourced from:

	%
Builders merchants	_____
DIY sheds	_____
Other distributors	_____
Direct from manufacturers	_____
TOTAL	**100**

Most computer analysis programmes would cope better with answers to this question if it was laid out thus:

Q What proportion of the products you buy are sourced from:

	Builders merchants (12)	DIY sheds (13)	Other distributors (14)	Direct from manufacturers (15)
0%	1	1	1	1
1-10%	2	2	2	2
11-40%	3	3	3	3
41-65%	4	4	4	4
66-99%	5	5	5	5
100%	6	6	6	6
DK[1]/Refused	7	7	7	7

[1] Don't know

Though this layout helps computer analysis, it limits the data since the answers are forced into ranges. In most studies this is acceptable, even desirable, as it removes the necessity for the respondent to be specific. Any calculations can be carried out on the mid point values of the range.