

# Constructing Survey Data

An Interactional Approach

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# THREE

## The answering process

The real test of the researcher's design choices is the *answering process*. The interviewee's reaction to wording, question order, data collection mode, etc. will reveal the quality of the researcher's decisions. In addition, the analysis of *response strategies* (the cognitive and communicative processes that guide interviewees) will reveal the types of bias that may compromise data quality, and point to appropriate remedies and solutions.

However, this requires a focus shift: from the questions (old paradigm) to the answers (new paradigm). Designing the data collection system without taking account of the interviewee's point of view would be like designing a product or service without considering the habits and needs of the users or clients.

### 3.1 ● Backstage: what lies behind the datum?

The survey *datum* (e.g. the interviewee's gender or age) is the minimum unit of information and occupies one cell in the data matrix. Originally, 'datum' was the past participle of the Latin verb *do* (to give) and it easily lends itself to misunderstanding: literally translated, the word 'data' means 'things that are offered', 'donated'. It is based on an agricultural metaphor, as if data could simply be collected like apples. In fact, however, 'data is produced, not given' (Marsh 1988: 42). A table from the US Census Bureau or the Office for National Statistics (UK) was not found in nature in this form; it has been constructed, compiled. Someone had to ask questions, using language, and someone else had to respond. Someone had to ask permission for access to documents and sources, and someone else had to respond to these requests. Virtually all social science data are derived from some form of discourse or textual material, such as a document, a written report, an interview, a visual or sound file, etc. (Cicourel 1982: 11). What emerges is a vast and complex network of relations, of actual *negotiations*, whose outcome becomes at once a limit and a resource for compiling a statistical table. This is the true sense of the expression, only apparently controversial, 'the data are constructed'.

Thus, 'data collection', strictly speaking, is a misleading term (Groves, Presser and Dipko 2004) and, if we sometimes use it in this book, we do so only for simplicity of exposition. The datum is the outcome of a complex and structured process that begins with the conceptualization of the problem and ends, after passing through intermediate steps, with the organization of collected information into a data matrix.

Researchers' decisions always end up interacting with the behaviour of other social actors. Data are, in fact, the outcome of the interaction among at least four actors: the researcher, the questionnaire, the interviewer and the interviewee, and this is why we can say that *the datum is co-constructed*. In this respect the datum is like an iceberg – only the top part (a questionnaire with ticks or answers) is visible to the researchers. But the deepest part, what lies beneath the answer (the interactional and cognitive process that has produced it), is largely unknown to them. Only the interviewer and the interviewee (and in some cases not even they) possess information about this process. Consequently, all procedures of data quality control that rely solely on calculations within the data matrix (based on comparison among parallel vectors of figures) risk entirely missing the biases that arise in the interview situation, when the four components of the survey network interact.

## 3.2 ● The co-construction of survey data

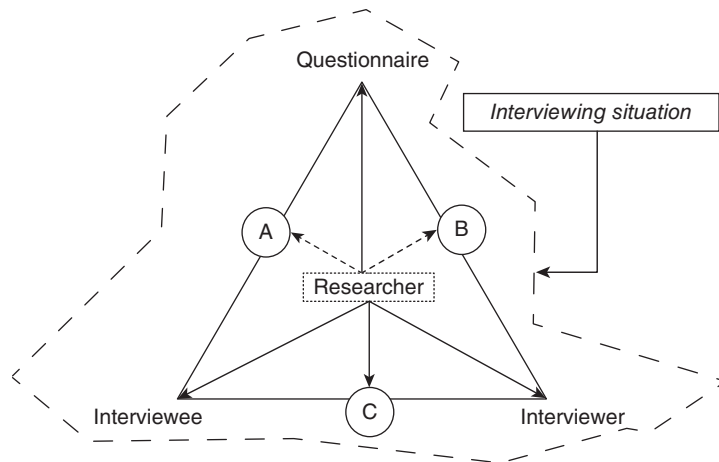
Recognizing the relational nature of the interview (see Part III) and of the fundamental role played by communicative and interpretive processes (see Chapters 4, 5 and 6) makes it necessary for the research team to establish reciprocal interaction with the other three components of the data gathering system: the questionnaire, the interviewer and the interviewee.

### 3.2.1 ○ The network model of data co-construction

The reciprocal interactions among the elements can be represented using a triangle (see Figure 3.1) with vertices representing the questionnaire (which orients contents and processes of signification during the course of the interview), the interviewee (who interprets the questions and formulates the answers) and the interviewer, who acts as a mediator between questionnaire and interviewee.

The researcher is placed at the centre of the network because s/he designs the questionnaire and chooses the interviewees and interviewers. The researcher also 'draws' the connections in the network, making decisions that will allow the three components to relate to each other (A, B and C) in ways that minimize the risk of bias. A failure on the researcher's part to create the necessary conditions for fluid connections among the three components in the interview situation will spell the failure of the survey.

Unfortunately, the researcher often remains outside the interview situation. Consequently, s/he doesn't know how questionnaire, interviewee and interviewer actually come together in as many different ways as there are cases in the sample.



**Figure 3.1** The network model of data co-construction

Source: Mauceri 2003: 100

### 3.2.2 ○ The interviewee-centred survey approach

Introducing an analogy with Total Quality Management, in which the central points are customer focus, increased collaborator responsibility and the idea that employees must feel free to ask questions and make suggestions about work methods, and substituting interviewees for clients, research assistants for workers and interviewers for employees, then a new model of the survey begins to take shape. This model adopts a customer care policy, putting the focus on the interviewees and building a system of interviewee relationship management that will tailor the whole system of data collection – the questions, items, response alternatives, rhetorical devices, interactive strategies and rituals of the interview – to the real linchpin of the model: the interviewee.

According to this approach the researchers need to:

- a) Design a questionnaire adapted to the characteristics, conceptual categories and linguistic competence of the interviewees. This requires knowing the study context in order to discover the variability in the meanings of the questions generated by the research participants. This can be done (for example) through a pilot study (see Chapter 11).
- b) Familiarize the interviewers during training with the aims and meanings behind the questions and response alternatives so that they can support the interviewees in their tasks (see Chapter 7 and 8).
- c) Provide interviewers with principles and instructions for conducting the interview which take into account its interactional nature, both verbal and non-verbal, and the need for incentives that will motivate the interviewees (see Chapter 8).

In order to assess in advance (before starting large-scale data collection) how good the designed network will be at producing high-quality data, the pretesting phase takes on particular importance and should be viewed as a test of the whole data gathering system, not just of the questionnaire (see Chapter 11).

### 3.2.3 ○ The interview situation: where do the actors in the network meet?

One element of uncertainty is the variability of the interview situation, where the interviewer–questionnaire–interviewee encounter takes place. The researcher will only partly be able to construct the context of the interview situation, since the context ‘is not a stable and fixed entity’ (Houtkoop-Steenstra 2000: 21) and is largely undetermined and unpredictable (the broken and irregular line in Figure 3.1). So the researcher will have to rely mostly on the interviewers to check whether the context-sensitivity of meaning could be responsible for introducing excessive biases.

On the other hand, some of the researcher’s decisions do strongly influence the construction of the interview context. The most important is the mode of questionnaire administration (generally called the mode of data collection). This choice may result in the elimination of the interviewer, one of the three components. However, in the interactional approach presented in this book (see Part III) the interviewer is no longer a mere accessory but constitutes an essential element.

### 3.2.4 ○ Modes of data collection

The concept of modes of data collection has a long history in survey research, even though the term itself didn’t appear until the late 1970s (Groves and Kahn 1979). Mail and face to face were the main modes from the 1940s up to that date, after which the telephone survey became the most common mode. Prior to the 1980s, most survey data collection was done by an interviewer using PAPI (paper-and-pencil interviewing). The development of computer-assisted modes and widespread access to the internet led to a proliferation of new modes that were ever more complex and economical (in the case of extended samples). As Couper observes, ‘the idea of a face-to-face survey is rapidly becoming a thing of the past’ (2011: 891), while the telephone interview survives in the form of CATI (computer-assisted telephone interviewing). During these decades, attention was gradually transferred from data quality to the cost reduction permitted by technological progress. It has been forgotten that face-to-face interviewing modes are the most versatile and that they alone allow the development of fully extended interaction with the interviewee. As we will argue in the following chapters, the suppression of interaction strongly reduces the possibility of obtaining quality data (see Part III).

#### A typology

Modes of data collection can be classified on the basis of two principal criteria:

- 1) *type of interaction* between interviewer and interviewee (face to face/verbal only/ none);
- 2) *type of support*, i.e. presence/absence of computer assistance (paper-and-pencil versus computer assisted): when computer support is present, the questions are read (by the interviewer or the interviewee) on the screen and the answers are recorded directly into the data matrix, using appropriate software.

The combination of these two classification criteria yields the following property space, from which the typology of the *main* modes is derived (see Table 3.1).

**Table 3.1** Typology of main modes of data collection

		TYPE OF INTERACTION		
		<i>Verbal and non verbal (face-to-face)</i>	<i>Verbal only (telephone)</i>	<i>None</i>
TYPE OF SUPPORT	<i>Paper and pencil</i>	1) PAPPI (paper-and-pencil personal interview)*	4) PAPTI (paper-and-pencil telephone interview)*	6) SAQ (self-administered questionnaire)
	<i>Computer</i>	2) CAPI (computer-assisted personal interviewing)	5) CATI (computer-assisted telephone interviewing)	7) CASI (computer-assisted self-interviewing)**
		3) AA-CAWI (animated agent computer-assisted web interviewing)		8) CAWI (computer-assisted web interviewing)**

\* Types (1) and (4) are generally united in a single type: PAPI (Paper-and-pencil interviewing).

\*\*For types (7) and (8) we use current terminology. However, in these cases the term 'interviewing' is inappropriate because there is no interaction between interviewer and interviewee. Where there is no interaction there is no interview.

- 1) *Paper-and-pencil personal interviewing (PAPPI)*. This provides for both audio and visual contact with the interviewee (face to face), and the entry of answers on a paper questionnaire (they are later inserted into the data matrix). Before the development of CAPI, it was simply called the 'face-to-face interview'. The verbal and non-verbal interaction that develops between interviewer and interviewee allows for greater cooperation and offers a series of advantages that will emerge in the chapters to come.
- 2) *Computer-assisted personal interviewing (CAPI)*. An interviewer in the scene (face-to-face interview) collects survey data using a computer to administer the questionnaire and recording the answers (see Lavrakas 2008). This technique has been developed relatively recently thanks to the 1980s information technology (IT) revolution. It is less commonly used than the other computer-assisted modes of data construction.
- 3) *Animated agent computer-assisted web interviewing (AA-CAWI)*. With CAWI (see type 8 below), this is the latest frontier of the survey: an avatar appears on the screen and acts as an interviewer.
- 4) *Paper-and-pencil telephone interviewing (PAPTI)*. Very widespread up to the IT revolution of the 1980s, this consists of conducting an interview over the telephone and recording the answers on a questionnaire. It has been progressively abandoned in favour of CATI.
- 5) *Computer-assisted telephone interviewing (CATI)*. In its simplest form a computer replaces the paper questionnaire on a telephone interviewer's desk (Lavrakas 2008). CATI was a real revolution because it was linked to the development of call centres. Thus, along with the automated compilation of the questionnaire, it generally includes sorting of the names of people to be interviewed and monitoring of the sample and quota saturation. In addition, as in the case of all call-centre activities, the interviews may be centrally supervised.
- 6) *Self-administered questionnaire (SAQ)*. Paper questionnaires are mailed to interviewees, who complete and return them. Sometimes they are administrated collectively (e.g. in classroom).

- 7) *Computer-assisted self-interviewing* (CASI). The questionnaire is mailed or appears on the respondent's home TV screen and the respondent completes it without an interviewer. The respondent must be able to read adequately or hear recorded questions as they are played back (audio computer self-interviewing – ACASI). See Lavrakas (2008).
- 8) *Computer-assisted web interviewing* (CAWI). This is a special case of CASI in which the questionnaire is self-administered by respondents via the internet on sites where it has been published. If the survey is administered to a particular population whose email addresses are available, respondents can click on an encrypted link and autonomously fill out the questionnaire. The increasing popularity of this mode of data construction has led to interest in a new type of survey that seems to be opening a new era: the web survey.

### Mode selection: three guiding principles

Talking about the web survey, Schober and Conrad note that 'we can no longer afford *not* to consider the communicative properties of new technologies' (2008: 3). This valuable observation needs to be applied to all modes, old and new. Each mode has specific communicative properties and performative capacities that need to be assessed in advance.

Numerous studies have documented the extent to which the choice of a type of data collection mode affects the findings that can be obtained and how the data gathering system has to be adjusted accordingly (among many: de Leeuw 1992; Couper 2000; Biemer 2001; Holbrook, Green and Krosnick 2003; Kreuter, Presser and Torangeau 2008). The results of such studies change, however, according to what forms of bias are taken into account and, overall, to what the idea of bias entails. If, for example, the fact that a trained interviewer may at times exhibit non-standardized behaviour is considered as bias, then all forms of interviewing (face to face or by telephone) are in themselves producers of serious bias. Our idea is altogether different and is based on the pragmatic principle that data is biased only if it does not respond to the cognitive objectives of the question (see Chapter 10).

- 1) A 'market' principle: lower cost, lower quality

With this idea as a starting point we can introduce the following general principle: lower costs mean lower data quality. In fact, the further we move from type 1 to type 8 the more costs are reduced. Similarly, the further we get from the face-to-face mode (PAPI and CAPI), the more remote is the possibility of controlling and limiting the bias linked to the cognitive and interpretative processes that stand between question and answer. This inverse proportion between data quality and reduction of survey costs will be explored further (see Chapter 10). It leads us at present to concentrate principally (in the next chapters) on face-to-face and telephone interviews, even though many of the ideas that emerge will be valid in the case of self-administered questionnaires as well.

- 2) The complexity principle

An abstract comparison of the different modes, without relating them to the whole research design of a specific survey, the characteristics of the interviewees or the available time and economic resources, risks giving the false idea that some modes of data collection are intrinsically better than others.



For this reason, a second guiding principle (for choosing a mode) is: the greater the extent to which the research goals call for a long and complex problem conceptualization and questionnaire design, the less advisable it is to move away from modes that include face-to-face interaction. This is because self-administered questionnaires and/or computer-assisted modes, and to some extent also telephone interviewing, do not include resources essential to the cooperation of interviewees in the tasks required by the questionnaire/researcher. In this regard it should be kept in mind that surveys, unlike polls, usually address aims that require the conceptualization of complex problems (and thus longer and multifaceted questionnaires), because their intent is to reconstruct the variety of factors and mechanisms that affect the target behaviours and attitudes (see Chapter 2). If the researcher's cognitive demand requires a long and complex questionnaire, it would be inadvisable, for example, to rely on CAWI. And it would be wrong to eliminate *pertinent* questions or items just to adapt to a certain mode that would save time and money.

### 3) The pragmatic principle

The previous two principles come together in the pragmatic principle: rather than basing the design of the research tools on a mode preference, the researcher should choose the mode that best fits with the research design and the characteristics of the interviewees. In addition, it is crucial to assess correctly whether the complexity of the tasks respondents are given is commensurate with their ability to handle them autonomously, without any support.

## 3.3 ● The 'cognitive turn': the CASM movement

For a long time, particular attention in research design was focused on the questions (which encompass the point of view of the researcher), and little was given to the answers (which should represent the interviewees). The shift from the questions to the answers is due chiefly to a group of academics, mainly cognitive psychologists (see Schwarz and Sudman 1996; Tourangeau, Rips and Rasinski 2000), who conducted problem-oriented and hypothesis-driven experimental research:

having been dominated by the paradigm of behaviorism for nearly four decades, experimental psychology underwent a 'cognitive revolution' in the 1970s, bringing mental process back to center stage. In contrast to behaviorism's emphasis on stimulus-response sequences and the importance of rewards, the emerging paradigm of information processing emphasized complex mental processes. (Sudman, Bradburn and Schwarz 1996: 11)

Since the 1980s, thanks to the CASM (Cognitive Aspects of Survey Methodology) movement, there has been a paradigm shift in survey methodology. The previous paradigm, founded on a statistical model emphasizing the *effects* of survey errors, has given

way to a new paradigm rooted in a social scientific model that concentrates on the *causes* of such errors (Tourangeau 2003). While error prevention or reduction was of little concern to the old paradigm, it has become a major focus of the new one. By the same token, the old paradigm's focus on sampling error has all but disappeared under the new one. They are thus more complementary than conflicting. Nevertheless, the developments of the cognitive revolution 'went largely unnoticed by the survey research community' (Sudman, Bradburn and Schwarz 1996: 12).

### 3.3.1 ○ Sequences in the answering process

Cognitive psychologists have shown that before arriving at an answer, interviewees are faced with a multiplicity of tasks that call for a series of cognitive operations. These include listening to the sounds emitted by the interviewer, understanding the meaning of the question and the type of answer required (for example, formulating an answer in their own words or choosing a response alternative), retrieving from memory the information relevant to answering, deciding not to answer, and so on. These operations constitute the preliminary phase preceding the answer. Tourangeau and Rasinski (1988) have suggested a sequence of five phases:

- a) *interpretation* (of the question)
- b) *retrieval* (of relevant information from memory)
- c) *judgement* (based on the retrieved information)
- d) *response selection*
- e) *editing* (of the answer).

Respondents may short-circuit the cognitive processes necessary for generating the optimal answer, compromising one or more of these steps (Sudman, Bradburn and Schwarz 1996).

However, in spite of the fact that, with slight variations, it is widely accepted in the cognitive literature, this sequence seems altogether too rational because it 'assumes that the fidelity of the answer depends entirely on information possessed before the formulation of the question, and that the interviewee's choice of an answer to give (or of an alternative to indicate) will be informed and transparent' (Fideli and Marradi 1996: §5c).

In addition, the cognitive model proposed by Tourangeau and Rasinski (1988) seems to consider 'social interaction primarily as a medium for the transmission of information, and not as a way of producing interpretations of the information itself or of making decisions that diverge from the preferences of the participants in the interaction' (Saferstein 1994: 306).

It would instead appear more appropriate to describe the interviewees' behaviour on the basis of the specific tasks they are asked to perform in each individual case and the interactional modalities imposed by the questionnaire. The interviewee's answer would then be more satisfactorily viewed as the product of a complex social procedure which, from an analytical point of view, can be broken down into three phases:

- 1) *sensemaking* (Weick 1988): the attribution of sense to the questions in the questionnaire (wording, cognitive tasks, etc.);
- 2) *evaluation*: the formation of a judgement according to the cognitive task required by the questions;
- 3) *verbalization*: the verbal communication of this judgement (answer) within the constraints of the questionnaire and the social situation in which the interview is conducted.

These three stages are presented in this order only for ease of exposition – in interviews they may happen in a different order and may even overlap.

### 3.3.2 ○ Tasks in sequences

Each of these three phases plays out in sequences that differ according to the actions in which the interviewee is involved.

#### Sensemaking

In this first phase, the interviewer asks questions that may differ in their internal structure. Each type of question carries with it several tasks that the interviewee must understand. These concern:

- a) the attribution of an area of (general) semantic correspondence to the single terms in the question;
- b) the choice of the specific meaning these terms may have in the context of the (particular) question;
- c) the attribution of a semantic value to the response alternative;
- d) pragmatic comprehension of the task – that is, of how to answer (how to make use of the response alternatives, whether more than one answer is permitted, whether the answers need to be ordered according to some criterion, etc.);
- e) understanding what type of reasoning is required in order to give a correct answer (for example: counting something, estimating frequency, making a time calculation, expressing a general judgement, making an inference about a particular situation, etc.).

How these tasks are carried out has important implications for the reliability of the answer (congruence of syntactic, semantic and pragmatic meaning in the interpretation of questions, items and response alternatives – see Chapters 5 and 10).

#### Evaluation

The ‘sensemaking’ of the question is accompanied by a series of operations that allow the interviewee to make a judgement. These operations include:

- a) attributing a pragmatic value to the question, both in its illocutionary and perlocutionary aspects (respectively, its ends or intentions and the social effects and consequences of the answers [see Austin 1962]);
- b) pursuing generalizations, abstractions and lines of reasoning that permit the development of an answer that matches the level of accuracy required by the question.

The correct performance of these tasks affects the degree of reliability of the answers, particularly their sincerity and accuracy (see Chapters 5 and 10).

## Verbalization

At the conclusion of this second phase, interviewees must:

- a) adapt their evaluation to the constraints and limitations imposed by the interaction with the questionnaire;
- b) adapt their evaluation to the constraints of the social situation in which the interview is taking place.

Even in this phase the constraints imposed by the questionnaire and by the interview situation can affect the interviewee's willingness to give sufficiently sincere and accurate answers.

Many cognitive or communicative errors can, in fact, happen during these brief phases (see Tourangeau, Rips and Rasinski 2000): interviewees may misunderstand the question or the answer categories; they may forget or inaccurately recall important information; they may supply irrelevant information; they may decide to keep certain information to themselves; they may answer mechanically to minimize mental exertion; or the interviewer may misunderstand the answer or encode it inaccurately. Groves (1989) groups these errors into three categories:

- 1) intentional errors or lies invented by the interviewee (Johnson and DeLamater 1976: 168);
- 2) errors of memory about how things happened or the period in which they occurred – such errors can originate not only with the topic but also in the way the question is formulated;
- 3) errors of communication, including situations in which the question is not formulated in a way the interviewee can understand (or the interviewer can comprehensibly read), and cases in which the interviewer does not put the question clearly or the interviewee does not answer clearly.

In Chapters 4, 5 and 6 we will look in detail at some of the error types.

## The weaknesses of the concept of error

However, grouping all these events under the concept of 'error' may be misleading. With regard to the relation between inner status, reality and statements, Selltiz et al. (1963) maintain that surveyors fail to consider an obvious fact: in daily life, not everything we say can be taken at face value. Similarly, Chomsky (1957: 97–100) affirms that what we say is not always what we mean. The presumed correspondence between inner statuses and answers (along with subsequent behaviours) is an unjustified assumption (Cicourel 1964: 52).

According to Deutscher, interviewees may express opinions that differ according to the situation in which they express them, without one necessarily being more sincere than another. For example, speaking of racism we might tailor our opinions according to the recipient (partner, child, colleague, boss or stranger). From this perspective, any answer might be considered real and adequate in the specific circumstances (1972: 326).

But even this is not the whole story. The concept of measuring error, as Marradi (1990: 81), points out, presupposes at least two conditions:

- a) that an actual state of a property exists and that it is therefore knowable. But this condition seems to be satisfied by a limited number of characteristics (e.g. nationality, place of birth or residence, level of education, having a driving licence or a criminal or voting record, etc.) for which official documentation not only records but actually *constitutes* the status;
- b) that the property in question is measurable – that is, that there is a definable unit for measuring the gap between the actual and the recorded status.

It remains to be seen whether there are properties that satisfy both these conditions, but it seems at first glance unlikely, given that the actual states of any continuous property seem unknowable, and discrete properties are not measurable in the strict sense of the word (Marradi 1990: 82).

However, it is not our intention to reach relativistic conclusions, but rather to establish epistemologically the problem of data validity. In later chapters we will attribute this to the sincerity and intentionality of the interviewee in supplying an answer as close as possible to his or her personal and contingent definition of the situation or event that the questions address (see Chapter 10).

### 3.4 ● Inference procedures

The cognitivist literature on how we reason is vast. There are various approaches, some of which yield results that are complementary and others that stand entirely on their own. This is not the place for reviewing these approaches and their results. We would like, however, to present some hypotheses and theories that can usefully contribute to an understanding of the ‘answering process’, in particular in the areas of comprehension (of the questions and response alternatives), heuristics (of providing an answer) and remembering or forgetting information or events.

#### 3.4.1 ○ The sensemaking of questions (and answers)

A question can be interactionally defined as a ‘move’ [that is, ‘everything conveyed by an actor during a turn at taking action’ (Goffman 1955: 228)] made by the interviewer. Asking a question in fact means performing an action – taking a position within an interactive exchange. By means of the question, the interviewer supplies some of the resources required by the interviewee to understand the interviewer’s action semantically and pragmatically, and to know what to do next. Questions, then, are moves that transmit cognitive tasks in communicative contexts. In addition, the questions give the interviewee instructions about what kinds of information need to be retrieved from memory, how to build a judgement that conforms to the expectations of the researchers,

how to answer accurately and how to perceive the request for information. These instructions seem to have consequences both for the reasoning of the interviewee (that is, the sequence of cognitive processes, such as generalizations, comparisons, abstractions, etc.) and, as we shall see in the next chapter, for how to assign a pragmatic value to the question, which may be perceived as a rumour, a test, a denunciation, an accusation, etc.

The interviewee's attempt to make sense of the question is guided by deductive (top-down) and inductive (bottom-up) processes that can be considered solutions to problems of signification. To perform this task of signification the interviewee makes use of a combination of textual resources (the question and the answer categories) and contextual resources (the interviewer's moves and the knowledge possessed by the interviewee at the moment the question is read).

The comprehension process therefore appears to be the result of an interaction between a stimulus (a question, for example), the knowledge held by the interviewee and the social context. We understand a text by imposing on it a pre-existing organization. The meanings of the words (read or listened to) are not stored in the words themselves, but in the interviewee's contextual knowledge and the perspective or role s/he assumes at the moment of answering. So the sense of a question is not in the question itself, but rather is 'constructed' during the interview using prior knowledge (Brandsford and Franks 1976).

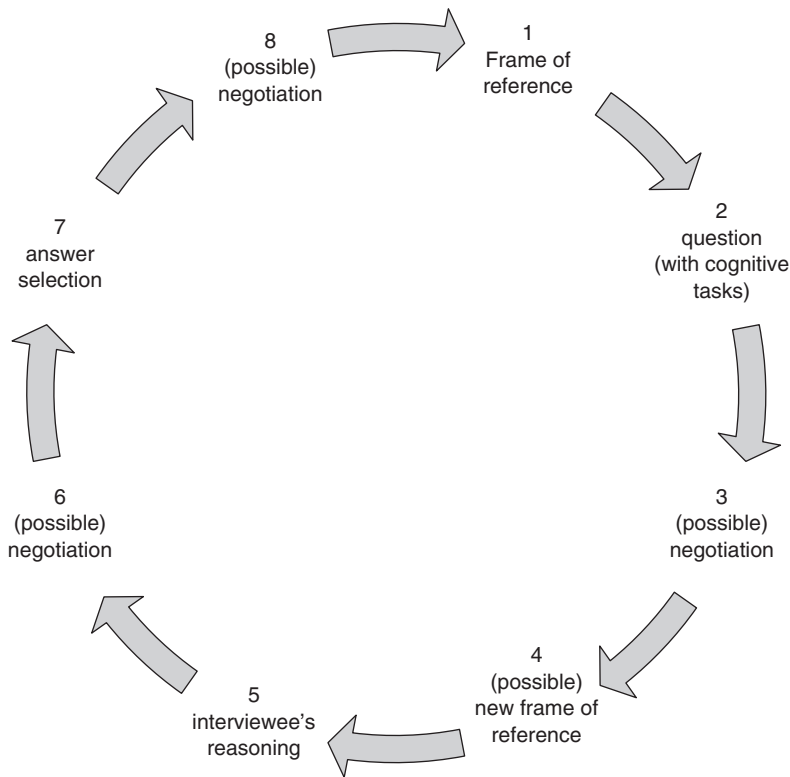
The comprehension process is thus a mixture of recognition and construction. Initially, we recognize the pattern both through the general structures of a text (macrostructures – see van Dijk 1977) and its narrative logic (Rumelhart 1975; Mandler and Johnson 1977), and through schemata or scripts pertaining to stereotypical situations (Schank and Abelson 1977; Bower, Black and Turner 1979; Abelson 1981). Subsequently, we construct/recognize the way the individual pieces of the text fit into the schema (Rumelhart 1975; Mandler and Johnson 1977).

Each question on the questionnaire is therefore always crafted onto a previous cognitive, semantic and pragmatic 'frame of reference'. Nevertheless, each question modifies it, at least in part, in a circular flow (see Figure 3.2). In Figure 3.2 we can see sensemaking in sequences 2 and 3; evaluation in sequences 4, 5 and 6; and verbalization in sequences 7, 8 and 1.

### 3.4.2 ○ The heuristics of the evaluation

Max Weber believed that rationality was the basic characteristic of Western society. Even today,

though principles of rationality seem as often violated as followed, we still cling to the notion that human thought should be rational, logical, and orderly. Much of law is based upon the concept of rational thought and behavior. Much of economic theory is based upon the model of the rational human who attempts to optimize personal benefit, utility, or comfort. Many scientists who study artificial intelligence use the mathematics of formal logic—the predicate calculus—as their major tool to simulate thought. (Norman 1988: 114)



**Figure 3.2** The circular flow of the answering process

In solving a problem, providing a judgement or opinion, making a decision or dealing with incomplete information, people will, for practical reasons (possibly even having to do with the limitations of the human cognitive system), rely on intuition, emotions and circumstances rather than following the procedures of formal logic or the algorithms of statistical probability.

Human thought—and its close relatives, problem solving and planning—seem more rooted in past experience than in logical deduction. Mental life is not neat and orderly. It does not proceed smoothly and gracefully in neat, logical form. Instead, it hops, skips, and jumps its way from idea to idea, tying together things that have no business being put together; forming new creative leaps, new insights and concepts. Human thought is not like logic; it is fundamentally different in kind and spirit. (Norman 1988: 115)

Heuristics are therefore short cuts, chains of reasoning based on simple and efficient rules of thumb, ‘fast-and-frugal’ decision-making rules that skip over some of the phases of a proper inferential process that would require more time and effort. They simplify the scope of a problem that would otherwise be unmanageable due to its excessive complexity (Simon 1982). In evaluating a situation or problem, individuals are influenced

less by rational principles than by the context, their own past experiences, their beliefs, the format in which information is presented and the information gaps prevalent in real contexts (Kahneman and Tversky 2000). People's choices seem, moreover, to be governed by emotional attitudes and evaluations rather than by economic preferences based on calculations of expected utility (Kahneman, Ritov and Schkade 1999).

### Five main heuristics

The concept of heuristics was originally introduced by Nobel laureate Herbert Simon (1957), but much of the work of discovering heuristics in human decision-making was done by Amos Tversky and Daniel Kahneman (another Nobel winner). The best-known heuristics are availability, representativeness, anchoring and adjustment, diversification and escalation of commitment.

The *availability heuristic* describes people's basing their estimates of the frequency or probability that an event will take place on 'salient' associations, examples and stereotypes – that is, whatever comes to mind first and with the least effort (Tversky and Kahneman 1973).

The *representativeness heuristic* identifies the tendency of individuals to make rapid generalizations based solely on the partial similarity between some characteristics of the observed event or object and the characteristics that are presumed to fit into the category they believe the event or object belongs to. The individual thus hastily includes the event in a category it is assumed to be representative of (Kahneman and Tversky 1972; Tversky and Kahneman 1974). This heuristic may be successful but can also be misleading.

The *anchoring and adjustment heuristic* emerges when people 'anchor' their judgements in the first piece of information they get, and all successive information is used only to 'adjust' the initial information, but never to question it (Tversky and Kahneman 1974). Individuals are therefore cognitively conservative: in some experiments the subjects persistently rejected successive information even when the experimenter told them that the initial information was false (Einhorn and Hogarth 1978). Goffman and the ethnomethodologists have also pointed out an additional, complementary phenomenon. In attempting to frame an event and define a situation, the interpretive efforts (framing) of a social actor to attribute meaning (keying) to a situation may proceed retroactively – events that happen after the episode in question can edit the meaning of the episode itself. In this case the interpretation does not follow the anchoring and adjustment heuristic but rather that of *frame substitution*.

A fourth heuristic is *naive diversification*. When people are asked to make a simultaneous choice (for example, to invest simultaneously in the funds in a portfolio), they tend to diversify more than when making the same type of decision sequentially (selecting one fund at a time: Read and Loewenstein 1995; Benartzi and Thaler 2001).

Staw (1976) was the first to describe the fifth and final heuristic, *escalation of commitment*. This has more recently come to be known as the *sunk cost fallacy*, a phenomenon in which additional investment in a decision is justified by accumulated previous investment even in the face of evidence that the present and future cost is greater than



the expected benefit. This investment may take the form of money, time, or even – for example in the case of troop commitments – human lives.

Kahneman and Tversky's work has opened the way to the identification of other heuristics and variants thereof, though this is not the place to list them all. What is important, as we shall see in the following chapters, is that heuristics affect the reasoning of interviewees as they deal with questions, items and answer categories. This is why neither heuristics nor the biases they give rise to should be undervalued.

### 3.4.3 ○ Remembering and forgetting

Cognitivists also consider recognizing and recalling information to be a process of construction. We encode and store our interpretation of a text (a representation), not the text itself. In making an inference we have added something of ourselves to the event. Having carried out this 'aggregation', we are no longer able to distinguish what we have seen or heard from what we have inferred (Loftus and Palmer 1974). Or we invent/remember absent details in the event as a result of scripts that prompt us to reconstruct the event in a stereotypical form (Cantor and Mischel 1977; Mandler and Johnson 1977; Bower, Black and Turner 1979). The content of a recollection is probably a mixture of the event that actually took place and the successive contributions, made through recourse to standard elements from the script.

Hastie (1981) argues that the probability that an event or object will be remembered is expressed by a convex parabolic function of congruence: information-stimuli that are highly consistent with the mental schema (e.g. noting that the weather changed exactly as and when I predicted) or highly inconsistent with it (e.g. hearing vulgarities from the mouth of an apparently distinguished lady) will be remembered best. Similarly, elements at the beginning or end of a series are remembered better than those in the middle.

There may thus be many reasons for forgetting. The information may never have reached long-term memory, or it may be difficult to retrieve because it was encoded and stored in modules other than those triggered by the recall (the so-called paraphrase problem). It may be that the information is difficult to distinguish from related information, or that the original information was contaminated by inferences made at or after the time it was learned. Redirecting our attention, however, from mnemonic processes to the events that are the object of the memory, we can collect numerous stimuli that are useful for social research. Some researchers have documented the fact that events that give rise to emotions are those that are remembered best of all (Holmes 1970; Brown and Kulik 1977; Sheingold and Tenney 1982). In particular, Bower (1981) and Linton (1982) have suggested that emotionally charged events are remembered best when they 1) were emotionally charged at the time they happened, 2) marked a moment of transition for the person, 3) remain relatively unique and 4) keep their original emotional meaning. Complementary results have come from research on the reliability of eyewitnesses. These suggest that the memory of emotional events can also be particularly distorted. D'Andrade (1989) has pointed out that the greater the degree to which information carried by a stimulus is organized in a coherent cultural schema, the easier it is to retrieve.

## Limitations

While these cognitive models are of great utility for social research, they have at least two limitations. In the first place they conceive of recall as either right or wrong, contrary to the best-known epistemologies of the constructivist approach. Secondly, they hold to a ‘mentalist’ conception of practical reasoning, and conceive of a memory as the product of a process that largely takes place ‘inside peoples’ heads’. In spite of the widespread ‘psychologism’ that prevails in the cognitive sciences, other approaches have nevertheless made headway. As Donald Norman recalls,

much of our everyday knowledge resides in the world, not in the head ... People certainly do rely upon the placement and location of objects, upon written texts, upon the information contained within other people, upon the artifacts of society, and upon the information transmitted within and by a culture. There certainly is a lot of information out there in the world, not in the head. (1988: ix)

Anyone who plays a musical instrument will surely have had the experience of not remembering how to play a line or melody they used to play in the distant past, but nevertheless finding the chords by putting their hands on the keyboard of the piano or the fingerboard of the guitar. The hands and fingers just ‘do it by themselves’, somehow independently of conscious thought. This is the conclusion Sudnow reaches in *Ways of the Hand* (1978), his book on playing jazz, where he reports that the feeling he had after having acquired sufficient skill was that his hands knew what sounds they were producing and that his mind didn’t have to do anything except observe them. In fact, it was only when his hands could play jazz ‘in their own way’, without having to be mentally trained, that the music came out best. Similarly, Geertz (1962) points out that children count on their fingers before counting ‘in their heads’. A recollection is therefore more precisely the result of the interaction between knowledge held in the memory, in the form of mental schemata (schematized knowledge), and knowledge present in the specific social situation of the interview (local knowledge) in which information is collected (Cicourel 1988: 908).

### 3.5 ● Situation awareness

Being interviewed is not a frequent event in a person’s life. It is normal, therefore, that the interviewee should to some degree experience the interview as an unexpected event, not least because the way of posing questions and soliciting answers in a standardized interview is so different from the rituals and the question–answer format of daily life. In other words, the interviewee must understand and learn the survey ‘answering process’. What is required, then, is a situation awareness quite different from the one commonly maintained in mundane activities.

Situation awareness refers to a consciousness of the events in one’s immediate surroundings that indicate the effect that the information, events and the actions of the interviewer

will have on immediate and short-term goals and objectives (Endsley 1995). While situation awareness is obviously critical in tasks in which there is a rapid flow of information and good decision-making is crucial (e.g. air traffic control, armed combat, emergency medical treatment), forms of situation awareness are activated in all social interactions, including those that happen during the administration of a questionnaire. In fact, as Goffman (1967: 185) pointed out, every interaction involves gambling (of a sort) and risk-taking, and is potentially 'dangerous'. Any question may represent a threat – sensitive questions or not knowing how to answer may create embarrassment and the possibility of losing face.

### 3.6 ● The limits of the 'cognitive turn' and Social Information Processing (SIP)

As we shall see (in Chapter 12), the CASM movement and its 'cognitive revolution' were guided by the 'emerging paradigm of information processing' (Sudman, Bradburn and Schwarz 1996: 11).

This paradigm informed the main research techniques of CASM such as 'behavioural coding' (or 'verbal interaction coding'), 'concurrent protocols' (for pretesting), 'verbal reports', 'verbal protocols', 'cognitive interviewing', 'coding system sorting tasks', 'think aloud' and so on (see Schwarz and Sudman 1996 for a review of such techniques; for the uses of some of them in pretesting, see Chapter 12). These techniques were important because they brought to light and clarified many aspects of the answering process (see Chapters 4 and 5). Nevertheless, they are *indirect* methods, that rarely collect and analyse the real interactions between interviewer and interviewee that take place during a survey interview.

Generally speaking, the Social Information Processing (SIP) approach is too cognitive and mentalist, too closely tied to an individualistic and 'psychologistic' vision (Schegloff 1991). As a matter of fact, understanding the point of a question is not a solely cognitive process, a problem for the interviewee alone, but fundamentally an interactive achievement (Schaeffer and Maynard 1996: 72). This is evident mainly 'when there are departures from the paradigmatic question-answer sequence; researchers ... see these departures as deviations that index a respondent's own problems in cognition' (Schaeffer and Maynard 1996: 83). Indeed, as we shall see in Chapter 12, 'behaviour coding' procedures view interviewee requests for clarification as a symptom of error rather than a normal function of the interaction.

#### The neglected interaction

SIP makes use of a simplified vision of interaction, a mere individual exchange rather than the *primary* site of the construction of meanings. It overlooks the fact that meanings are not *primarily* in the mind but are constructed locally, during interactions; that 'there is a socially organized tendency to construct answers interactively' (Schaeffer and Maynard 1996: 85).

Adapting Wittgenstein (1953: 128), Perucca and Buzano (1954: 213) and Brodbeck (1962: 258), we may observe that questions, items and response alternatives do not have any self-evident meaning (the origin of considerable bias!). Phenomenologically, they are just ink on paper. It is the interviewer and interviewee working together who provide a frame of reference that will make the ink into something significant. Its meaning is thus constructed in the interaction (Cicourel 1964; De Santis 1980; Oakley 1981; Potter and Mulkey 1985; Briggs 1986; Suchman and Jordan 1990; Schaeffer 1991; Hester and Francis 1994).

SIP relegates language to the role of a medium for transmission of information rather than seeing it as a constructor of identities, interpretations and realities. People do not simply exchange information, much less process bits. As Clark and Schober put it, there is a 'common misperception that language use has primarily to do with words and what they mean. It doesn't. It has primarily to do with people and what they mean. It is essentially about the speaker's intentions' (1992: 15).

Most of CASM researchers' 'attention is usually limited to the semantic information provided, at the expense of its pragmatic implications' (Schwarz 1996: 85). If we consider pragmatics as the study of all those aspects of meaning not captured in a semantic theory (Levinson 1983: 12), SIP underestimates the conversational and 'collaborative process of producing, understanding, and answering a question' (Schaeffer and Maynard 1996: 82), along with the performative capacity of modes of data collection. This also happens because the efforts of the CASM movement are almost exclusively concentrated on improving questionnaire design alone at the expense of wider survey design.

In CATI, as well, the question meaning does not come from words alone; voice and interviewer effects act as a paralinguage that give additional meaning to questions (Smith 1993). In CAWI respondents may also draw information from the visual appearance and layout (Schwarz 1996). Non-verbal languages such as numbers, symbols and graphical features (such as variations in size, spacing, shapes and brightness) act as a paralinguage that gives additional meaning to words (Redline and Dillman 2002; Dillman and Christian 2005: 44).

### 3.7 ● From cognition to interaction: the pragmatic turn

Beginning in the 1990s, scholars from different disciplines, including psychology (Clark and Schober 1992; Schwarz 1996; Sudman, Bradburn and Schwarz 1996; Tourangeau, Rips and Rasinski 2000: 50ff), sociology (Schaeffer and Maynard 1996; Maynard et al. 2002), anthropology (Suchman and Jordan 1990) and linguistics (Houtkoop-Steenstra 2000), have pursued an approach that has placed at the centre the interaction between interviewer and interviewee (and not only their minds). This approach relies on pragmatics, 'the study of the relations between language and context that are basic to an account of language understanding' (Levinson 1983: 21), and revives Grice's conversational maxims and implicatures. This is not a repudiation of the 'cognitive turn' (to which some of these

authors, particularly the psychologists, have contributed), but rather a broadening of its perspective to embrace fundamental aspects of communication, previously overlooked, which can be explained neither in purely semantic terms nor on the basis of grammatical, lexical or textual criteria, but must include, in particular, illocutionary force, deixis and implicature. These tools are essential to an explanation of the actual meaning of an utterance as determined by the specific context where it is produced, which can be very different from the meaning it would have if considered in isolation on the basis of purely grammatical (morphological, syntactic, lexical) considerations. 'Hence, the same question acquires a different meaning in a different context' (Schwarz 1995: 166).

### The survey interview as rooted in ordinary interaction

This approach states that the survey interview is deeply rooted in ordinary interactions; an idea always rejected by behaviourism and given little consideration by SIP, in spite of the seminal work of Cicourel (1964) and, in part, of Kahn and Cannell (1957). As Sudman, Bradburn and Schwarz point out, the

survey is a social encounter ... interviewers conduct interviews in a form that is very similar to that of ordinary conversations and, as such, partakes of the linguistic and social rules that governs ... interactions between strangers ... the survey is a special type of conversation with characteristics that set it apart from many other conversations, but it is a conversation nonetheless and needs to be understood as a conversation. (1996: 1)

For this reason, 'the tacit assumptions that govern the conduct of conversation in daily life are the key to understanding a wide range of response effects' (Sudman, Bradburn and Schwarz 1996: 247), from the impact of response alternatives to wording and order effects (see Schwarz and Hippler 1991; Clark and Schober 1992; Schwarz 1996).

## 3.8 ● The logic of conversation

The cognitive approach underlying SIP did not take sufficient account of the fact that the interpretation of questions is also profoundly affected by the social conventions that guide conversation. One of these is the 'cooperative principle' proposed by Grice, which states: 'make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged' (1975: 45). This principle is then broken down into four main maxims that speakers are expected to observe in order to make a conversation work:

- 1) Quantity [a] 'Make your contribution as informative as is required (for the current purposes of the exchange)'; b) 'Do not make your contribution more informative than is required']
- 2) Quality ('Try to make your contribution one that is true')
- 3) Relation ('Be relevant')
- 4) Manner ('Be perspicuous')

Of course, in order to account for how conversation actually works, these same maxims should also be seen from the point of view of the recipient, who is aware of them and adjusts his/her expectations and decoding efforts accordingly; starting from the assumption that the quantity of information provided by the speaker is sufficient, true, relevant and perspicuous, and making up for any apparent inadequacy with respect to these parameters by elaborating it on logical grounds and generating the necessary implicatures.<sup>1</sup>

Following these maxims, participants go beyond the literal meaning of the sentences uttered and the information provided by the researcher, and draw on the pragmatic rather than the semantic meaning of the researcher's contributions (Schwarz 1996: 7). This causes misunderstanding because 'researchers focus solely on the logical implications of the information they provide to research participants; while the research participants themselves draw on the implicatures provided by the content and the conversational context to arrive at a judgment' (Schwarz 1996: 14).

### Interpretive procedures: other essential tacit features of common understanding

In addition to pragmatic principles and maxims, other important characteristics have been discovered by phenomenology, ethnomethodology and cognitive sociology. According to Goffman, interactions are based on a complex interplay of mutual 'obligations' and 'expectations' (1956: 49). As Schutz put it, each participant assumes that his interlocutor assumes what he assumes and, by the same token, the interlocutor does the same. This mutual interplay of 'presuppositions' is based on some essential tacit features of common understanding which were first described by Schutz (1945, 1953), and then referred to in various ways: as 'constitutive rules' (Garfinkel 1963), as 'interpretive rules' (Garfinkel 1967), as 'interpretive procedures' or 'basic rules' (Cicourel 1973). These rules or procedures are typical of practical reasoning, and can be considered as tacit assumptions which each participant in an interaction carries, presuming that everybody does the same. These rules for speakers and hearers include the following:

- 1) *The reciprocity of perspectives* (Schutz 1953; Garfinkel 1963: 212–13; 1967: 89; Cicourel 1973: 85–6): participants take for granted that their points of view and experiences are interchangeable, based on the assumption that everybody interprets the world in substantially the same way.
- 2) *Normalization* (Garfinkel 1967: 91–2; Cicourel 1973: 86): when discrepancies or ambiguities appear, the speaker will attempt to normalize the presumed discrepancies, thereby eliminating small cognitive dissonances;
- 3) *The 'et cetera' assumption* (Garfinkel 1967; Cicourel 1973: 87): speaker and hearer assume the existence of common understandings not only on occasions when the descriptive accounts are seen as obvious, but also when they are not immediately obvious. This serves the function of allowing utterances to pass despite their ambiguity or vagueness, so that communication can continue to flow instead of being constantly interrupted.

1 Grice makes a distinction between implicature (made on logical grounds) and inference (derived from reasoning).

- 4) *Expectation of future explanations* (Cicourel 1973): closely linked to the previous rule, this procedure inhibits potential objections or requests for explanations on the part of the interlocutor by establishing the assumption that explanations will be provided in the course of the interaction.
- 5) *Reflexivity of accounts* (Garfinkel 1967: 1): speaker and hearers, when acting, continually and simultaneously produce both descriptions and explanations of what they are doing, instructing each other on both the meaning of their actions and the reason for performing them (i.e. their logics, rationality, plausibility, justification), thereby making it possible for the interlocutor to understand the sense of the action itself.

Research participants bring these tacit assumptions to the research situation. 'Hence, they expect the researcher to be a cooperative communicator, who observes the Gricean maxims of conversation and whose contributions are informative, truthful, relevant, and clear. Moreover, they design their own contributions to provide the information they infer the researcher to be interested in' (Schwarz 1996: 83).

### Biases as excess cooperation

Grice's principles serve to explain how verbal exchanges consisting of utterances, which, in terms of conventional (i.e. purely linguistic) meaning are scanty, incomplete or fragmentary, are decoded by the interlocutors involved in a conversation. In particular, the cooperative principle highlights the fact that in an interaction the interlocutor's attitude is characterized by a clear determination to make the conversation 'function', even when the speaker's contributions are inadequate in informative, linguistic (e.g. grammatical, phonetic) or textual terms. To tackle these problems, recipients generate implicatures, endeavouring to reconstruct the speaker's intention, i.e. what the speaker has intended to imply (or suggest) in his utterance, without explicitly saying it. Overdoing the cooperative principle may be a source of errors or incorrect implicatures. Interviewees could cooperate excessively through an excessive willingness to make sense out of the communicative exchange and make it function.

When they are asked an opinion question about an issue that doesn't exist or for which a ready-made answer may not exist, interviewees have no reason to suspect that the researcher is not obeying conversational conventions, violating each and every norm of conversational conduct, and not acting as a cooperative communicator (Schwarz 1996: 5, 166). They therefore give the researcher more credit than s/he deserves, and design their own contributions in compliance with conversational norms (Schwarz 1996: 16). According to the cooperative principle, 'they assume that every contribution to the conversation is relevant to its goals' (Schwarz 1995: 166).

Schwarz (1996: 5) suspects that this basic misunderstanding about cooperative communication in research settings has contributed to some of the more puzzling findings in social and psychological research and is, in part, responsible for the less than flattering picture of human judgemental abilities. The interviewees' behaviour does 'not reflect superficial responding, but adequate conversational conduct' (Schwarz 1995: 166). Far from providing superficial answers, 'our respondents work hard at making sense of the questions we ask. In doing so, they draw extensively on the information that we provide in our questionnaires' (Schwarz 1995: 154). In conclusion, what renders the response

error findings problematic is not the behaviour of the interviewees, but researchers' own assumptions about question comprehension.

### 3.9 ● Concluding remarks

The results of research carried out in the wake of the cognitive and pragmatic turn have shown how data is (co-)constructed through the researcher's choices (research design) and the specific encounter involving the components of the data collection network (questionnaire, interviewee and interviewer). This restores to survey research (and to researchers) the creativity and craftsmanship that flourished among its founders (see Chapter 1) and made it a difficult – though stimulating and fascinating – task.

In this sense, the mode of questionnaire administration (which we have begun to explore in this chapter) risks becoming an 'empty shell' if the researcher does not adequately consider the wider context of complex interactions between the elements (questionnaire–interviewee–interviewer) in the interview situation.

#### Cognitive and communicative processes

The stages and sequences of the answering process are crosscut by both cognitive and communicative processes: each social encounter is guided by the interaction between these two orders of processes.

The distinction between cognitive and communicative is analytic: the term 'cognitive' refers to aspects of immediate perception, intuition, rapid recognition and reaction 'without thinking', as research on heuristics makes clear. 'Communicative', on the other hand, designates processes related to social conventions. This is not a rigid distinction – we will see how social conventions guide perception, or in other words how culture shapes the mind (Geertz 1966).

We will describe these two processes, starting with the psychological aspects of the interaction (Chapters 4 and 5) and then moving to those concerning social norms and conventions, and concluding with communicative elements linked to the interview setting (Chapter 6).

#### ● Recommended reading

On the *linguistic* aspects of survey interview: Houtkoop-Seenstra (2000).

On the *interactional* aspects of survey interview: Schaeffer and Maynard (1996).

On the *pragmatic* aspects of survey interview: Schwarz (1996).