

3 INTROSPECTIVE RESEARCH: VERBAL PROTOCOLS

Introducing introspective research

The eye of man hath not heard, the ear of man hath not seen, man's hand is not able to taste, his tongue to conceive, nor his heart to report, what my dream was.

WILLIAM SHAKESPEARE, 1564–1616

A Midsummer Night's Dream, Act 4, scene 1

This somewhat jumbled recount by Bottom in *A Midsummer Night's Dream*, indicates Shakespeare's skepticism about the possibility of the tongue conceiving or the heart reporting what a dream was. But getting reports about what the brain conceives or the heart feels has been a central challenge for human beings (and for psychologists sent to represent human beings formally). Psychology has wrestled (and continues to wrestle) with the issue of defining and analyzing human emotional/mental states throughout its short history as a discipline. The most obvious (and most controversial) way of doing research on, say, mental states is by asking those people who claim to have on-going mental states what is going on as they mentalize. Asking participants to delve into their own states of consciousness and verbally report on cognitive, affective, or social aspects of that consciousness is the technique used in introspective studies.

The researcher using introspective techniques usually sets a task and then asks participants to report on what their brains (or hearts) are processing as they carry out the task. A number of people—you probably know some—seem to mutter their way through life. However, there are a number of life's tasks that almost all of us *talk through* as we do them. An example of this *talking through* process familiar to most people is that of doing mental (or even written) arithmetic.

Exercise 3.1

(Warm-up)

Consider the following multiplication problem and how you go about solving it. To learn more about that process, write down the (mental) words you say to yourself as you go through the process of solving the problem.

$$\begin{array}{r} 45 \\ \times 52 \\ \hline \end{array}$$

Most people seem to talk—either aloud or sub-vocally—their way through solution of such problems: ‘Two times five is ten, put down zero, carry the one; two times four is eight, plus one is nine...’ If you were to carry out the steps of solving an arithmetic problem fully aloud and if you or an observer/listener were to record and transcribe what you are reporting aloud, this would be the beginning of an introspective study.

In this chapter, you will have roles as participant and researcher as you carry out and collect data on some tasks involving introspective reporting. You will also have a chance to examine in some detail some of the options that are available to you as a researcher as you go about coding the data that you collect and analyze.

An excellent overview of the several ways in which introspective research has been used in second language studies is provided by Færch and Kasper’s book *Introspection in Second Language Research* (1987). The text covers introspective studies in test-taking and validation, translation, reading, problem-solving, error analysis, motivation, etc.

Introspective studies had a period of centrality in psychological studies in the early twentieth century. Such studies had the blessing of such psychological giants as William James: ‘Introspective observation is what we have to rely on first and foremost and always. The word introspection need hardly be defined—it means, of course, the looking into our own minds and reporting what we there discover’ (James 1890: 185). Following James, introspective notions were early underwritten by extensive laboratory studies, particularly those conducted by Titchener (1912). These formal introspective explorations seemed fashionably linked to the introspective and stream-of-consciousness writing styles of leading contemporary literary figures such as James Joyce, Marcel Proust, and Virginia Woolfe.

Yet within a few years, introspective studies of the Titchener type were under strong attack by those like ‘Watson (1913) who argues, with evidence, that the introspective verbal report is untrustworthy for scientific purposes’

(Ericsson and Simon 1993: 58). With the rise of behaviorism in psychological studies, introspection came under further attack. For almost fifty years introspective studies of any sort were virtually abandoned.

It was Ericsson and Simon's now already classic work, *Verbal Protocols* (1984, 1993), which, in large measure, was responsible for reviving interest and which showed the way past the criticisms that had been raised against such studies in their earlier form. Ericsson and Simon argued that psychological studies of any sort needed to be designed in respect to a model of mental processes, and they formulated such a model on the basis of information processing theory. The critical feature of this theory is that it assumes a multiple memory model comprising both short-term and long-term memory stores and presumed mechanisms by which they are activated.

As a result of decisions based on the model and experimental work that followed from it, several principles for introspective studies were formulated. These included the dictums that

- 1 time intervening between mental operations and report is critical and should be minimized as much as possible;
- 2 verbalization places additional cognitive demands on mental processing that requires care in order to achieve insightful results;
- 3 verbal reports of mental processes should avoid the usual social conventions of talking to someone;
- 4 there is a lot of information in introspective reports aside from the words themselves. Researchers need to be aware of these parallel signal systems and be prepared to include them in their analyses;
- 5 verbal reports of automatic processes are not possible. Such processes include visual and motor processes and low-attention, automatized linguistic processes such as the social chat of native speakers; and
- 6 research should be based on a model of mental processes that allows predictions about how mental operations will be organized under various conditions.

As a partial consequence of these dictums, Ericsson and Simon distinguished three levels of verbal report.

- 1 TALK-ALOUDS where the report is concurrent with a given mental task and for which the information is already linguistically encoded and can be directly stated. An example would be talking aloud while thinking how to spell a word.
- 2 THINK-ALOUDS where the report is concurrent with a given mental task but where the heeded information is not already linguistically encoded and thus requires linguistic encoding for verbalization. Describing what a corkscrew looks like would be an example.

- 3 RETROSPECTIVE STUDIES where the report is subsequent to a given mental task and where information consists of selected foci, descriptions, explanations and interpretations. Reporting on the route by which you arrived at your present destination would be an example.

Whether you are working alone or working in a class situation, you should be aware that many of the most valued introspective studies are of the solo or self-report type, where one person is both participant-subject and analyst. Diary studies, which we discussed in Chapter 2, are an obvious type of self-reporting and self-analysis. Some contemporary second-language course instructors have learners keep some sort of introspective record of their language learning impressions as a component of the language learning course. In these cases, students are acting both as language-learning participant-subjects and second-language acquisition researchers.

All researchers working in the introspective tradition emphasize the importance of recording—both audio and video where possible—participant responses for later analysis. If you are working on your own, you will definitely need to record your introspective verbalizations on audio tape for later analysis. In some class situations, we acknowledge that having enough tape recorders to share between every two students in the class as well as having noise-restricted, non-distractive areas within your study areas for tape recording may not be realistic expectations. Alternative approaches could include working in pairs and having one member of the pair take notes of what the other says. You may also be able to book time in a language laboratory if you are working in an institution that has one.

The following exercises are designed to give you some experience in carrying out some *classic* introspective tasks whether you are working alone or as part of a class. If you are using this text on your own, you will be wearing two hats. Where exercises are described as *pair* exercises, you will be acting as your own partner, first tape recording your introspections as *participant-subject* and then analyzing these recorded introspective records as *researcher*. Most of these pair exercises are easily interpretable as *two-hat* exercises for the solo learner. In addition, several of the activities have a game-like quality, and you may want to ask a family member or friend to act as your partner while you do the exercise.

We have tried to observe the dictums listed above (page 55) and to encourage you to do the same as you carry out the task exercises and as you analyze the results.