

CHAPTER 3

MAKING SECOND LANGUAGE TEACHING “BRAIN-COMPATIBLE”

*The most important part of teaching
= to teach what it is to know.*

Simone Weil (1909-1943)

Introduction

As we saw in the previous chapter, neuroscience has now established that the brain's two hemispheres differ not so much as to the type of stimuli they are designed anatomically to process, as to the manner in which they process information. This is why it is improper, if not misleading, to use terms such as “right brain learning” or “left brain ideas.” There are no such things. Terms such as “L-Mode” and “R-Mode,” on the other hand (Edwards 1979), are preferable because they refer only to types of processes associated with one or the other hemisphere. The PET-scanning research has shown that while each hemisphere is specialized to handle a certain specific type of function, it does so in tandem with complementary or parallel processing patterns taking place in the other hemisphere (and in other parts of the brain). So, the term “R-Mode” is used in this book to refer to functions that have a primary locus in the RH, but which activate other areas of the brain in an interconnected fashion. Similarly, the term “L-Mode” is used in reference to functions whose neural substrate is in the LH, but which stimulate other areas of the brain in an interdependent fashion. But as adaptable and neuroscientifically-consistent as such terminology is, its incorporation into SLT begs the following question: Is there any pedagogical advantage in using such terminology?

Danesi and Mollica (1988) attempted to answer this very question, examining the viability of utilizing terms such as “R-Mode” and “L-Mode” to help guide instructional practices. They trained teachers of two high schools in the Toronto area how to prepare their instructional practices in line with Bimodality Theory—i.e. by viewing certain techniques as R-Mode, L-Mode, or intermodal, and then organizing their classes according to a set of four basic “modal principles” (which will be discussed in this chapter). As it turned out, at the end of the academic year, the two experimental high school classes fared significantly better on all tests of proficiency than did two control classes taught according to a standard communicative syllabus. But the significant finding of the study was not so much the difference in proficiency levels obtained, as the fact that teachers could be easily trained to organize their pedagogical routines by adopting a specific “brain-compatible” view of SLT—Bimodality Theory. Soon after the study was published, the researchers realized, however, that the results could be explained in non-neuroscientific ways.

One could say, for instance, that the bimodally-trained subjects achieved higher proficiency levels for the simple reason that they were taught by techniques that were varied and sufficiently well-designed *in themselves*. This would preclude any need to explain the positive results in terms of neuroscientific concepts. The study thus raised a rather fundamental question for this whole line of inquiry: To what extent is it meaningful to label a technique, *X*, as R-Mode, and another one, *Y*, as L-Mode? It is difficult to see how to gather empirical data to answer such a question. But perhaps it is a moot one, after all. The value of such terminology lies not so much in predicting what parts of the brain may or may not be activated, as it does in furnishing insights for organizing SLT *in a general way*; i.e. it is useful insofar as it leads to effective ways of structuring classroom input, designing syllabuses, and doing all the things that are required for carrying out SLT in a classroom environment.

In effect, the Danesi and Mollica study showed that neuroscientific constructs could have pedagogical consequences. Follow-up work (e.g. Lombardo 1988, Nuessel and Cicogna 1992, Pallotta 1993, Arnò 1993, Schenone 1994, Curro 1995, Smor Forster 1995) has provided both empirical and anecdotal support of this general finding. The objective of this chapter is, therefore, to discuss the kinds of pedagogical principles that can be envisioned by considering the relevant brain research with this objective in mind. In my view, there are four such principles that are worth considering. These can be called as follows: (1) the *modal flow principle*; (2) the *modal focusing principle*; (3) the *contextualization principle*; and (4) the *conceptualization principle*.

Incidentally, before dealing with these principles, it is interesting to note that the notion of bimodality provides a convenient "diagnosis" of why so many methods and approaches in SLT have tended to come and go. Simply put, it suggests that any instructional system that privileges one or the other of the two modes is bound to fail sooner or later. Such a system can be called *unimodal*. For the most part, the techniques that were molded into inductivist and deductivist methods (the GTM, the DM, the ALM, etc.) focused on developing L-Mode control of the SL. It was assumed, on the whole, that the ability to synthesize and apply L-Mode functions to carry out communicative tasks would emerge spontaneously in the learner. In all fairness, it should be acknowledged that some of the techniques used within the framework of the inductivist methods—e.g. the use of situational practice, the incorporation of visual stimuli, the contextualization of practice routines, etc.—did have an R-Mode focus. And this might, in fact, explain why they have survived to this day as effective techniques *on their own*. But it still remains true that the overall instructional design of the inductivist methods was L-Mode. On the other side of the unimodal continuum, Communicative, Humanistic, and Neurolinguistic methods and approaches were designed with an opposite unimodal bias. They typically overemphasized the R-Mode to the detriment of the L-Mode. This is why they always generated much interest and enthusiasm at first, but seldom produced high levels of proficiency by the end of a course of study.

Needless to say, no one method or approach has ever been designed intentionally to be unimodal. It is more accurate to think of SLT practices generally as placeable on a continuum with two extreme endpoints: an L-Mode, or extreme analytical point, and an R-Mode, or extreme experiential point. The midpoint of this continuum is, in effect, the "breakpoint" at which an SLT practice takes on

more and more of the modal characteristics of that half of the continuum as it approaches an endpoint. Thus, for instance, the Grammar-Translation Method, in its extreme form, would be located at the L-Mode endpoint; Silent Way teaching, on the other hand, would be placed at the R-Mode endpoint; communicative approaches that integrate formal skills into their instructional plan would be located near the breakpoint but slightly to its right; and so on.

Two Modal Principles

Before discussing any principles derived from a neuroscientific view of pedagogy, it is necessary to clarify the meaning of the word *theory* in *Bimodality Theory*. In no way does it imply a “theory” in the usual scientific sense—e.g. as in the *theory of light*, the *theory of the atom*, etc. It constitutes, simply, a speculative plan as to how instruction in the SL classroom might be carried out, based on a set of underlying neuroscientific principles that have been verified to some degree by actual classroom experience and research. Bimodality Theory constitutes a specific *view* of SLT that is derived from a consideration of the relevant hemisphericity research—the original Greek meaning of *theory* was “view.” It *sees* the brain’s experiential and analytical modes of acquiring knowledge as systematic contributors to SLA in its totality—as a tool for constructing narratives, for evoking humor, etc. As Gardner (1981: 74) has aptly put it: “Only when the brain’s two hemispheres are working together can we appreciate the moral of a story, the meaning of a metaphor, words describing emotion, and the punch lines of jokes.”

The Modal Flow Principle

As teachers know all too well, students will absorb new material much more readily and meaningfully if they are given opportunities to *do* something with it. When this typical observation is mapped against the relevant neuroscientific work on hemisphericity, a “perfect match” results. In a phrase, it would seem that for the brain to take in unfamiliar information it requires the experiential (probing) R-Mode functions to operate freely. However, both the anecdotal experiences of teachers and the neuroscientific findings also indicate that this exploratory effort on the part of students would be virtually wasted if not followed up by the teacher’s “analytical” intervention, so to speak. All this suggests a general *principle* of language learning:

The Modal Flow Principle

New notions and structures are learned more efficiently when the learner’s brain is allowed to process it in terms of an R-Mode (experiential) to L-Mode (analytical) “flow.”

The main pedagogical implications of this principle are rather straightforward. During the initial learning stages, students need to assimilate input through observation, induction, simulation, oral tasks, and various other kinds of R-Mode

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