Marcel Danesi

On "Bimodality": A Conversation with... Marcel Danesi

interviewed by Anthony Mollica

Marcel Danesi is professor of Semiotics and Anthropology at the University of Toronto. He developed the notion of bimodality several decades ago to link language learning and language teaching with research on brain functions.

Mollica: *You coined the term "bimodality." What do you mean by it?*

Danesi: In 1986, I wrote a paper for *Lenguas Modernas* in which I wanted to convey the importance for language teachers to understand the role of the two modes of learning – the intuitive-experiential versus the reflective-analytical – and the implications that this type of understanding has for teaching languages. I had been reading about brain functions previous to writing the paper. This made me realize that the two learning modes seemed to correspond to right-hemispheric and left-hemi-spheric functions, respectively. So, I used the term *bimodality* to encapsulate this neuro-logical duality and discussed how it might be utilized pedagogically, as a "guiding notion," so to speak, in order to enhance classroom learning outcomes.

Mollica: *How did this "guiding notion" – as you put it – change your teaching?*

Danesi: I indicated in that paper that at no other time in the history of education had teachers of languages been so knowledgeable about what to do in the classroom, or had so many effective tools at their disposal to help their students learn – from expertly-designed textbooks to technologically-sophisticated devices. Yet, notwithstanding the sophistication, I noticed that studies constantly showed that only a small fraction of students eventually achieved native-like proficiency at the end of a course of study. I asked "why" in that article and suggested that we might want to look for an answer to this dilemma in the neuroscientific research findings on language learning. This question had bothered me (and in some ways continues to bother me today) as an often frustrated teacher of second languages. Disenchanted with existing methodologies at the time, I ventured to seek insights from neuroscience, fearing that my theoretical adventure would probably turn out to be an unproductive one. To my surprise, it changed my view of second-language acquisition and second-language teaching drastically, forcing me to reconsider radically how I taught Italian at the university. My foray into the neuroscientific domain allowed me to take charge of my classroom on my own terms, rather than adopt trends dictated by the theoretical fashion of the day.

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Mollica: *In the same year, 1986, you came into contact with neuropsychologists and special education teachers working with brain-damaged children in Italy. What results did you gain from these encounters?*

Danesi: The result was the establishment of an agenda of collaborative research on how to design brain-compatible teaching materials for such children. The term *bimodality* was accepted by the neuropsychologists as a viable construct because it seemed to provide a meaningful framework for understanding how children learned languages. *Bimodality* was defined at the time as the view that the two primary modes of learning, the experiential and the analytical, must be activated in specific ways for such children. To my surprise, various Italian educators adopted the bimodality theory shortly thereafter as a general framework for developing teaching curricula for handicapped children in school. By the late 1980s, various second-language teachers in Italy and North America started assessing the implications of the theory critically for second-language teaching in general, and a

number of doctoral students began investigating its principles empirically.

Mollica: *Has someone else used the term "bimodality" before you?*

Danesi: When I proposed the term *bimodality* in 1986, I was not cognizant of the fact that it had already been in use among neuroscientists as a synonym for *Complementary Hemisphericity Theory*. I was also not aware of the fact that the term had been employed by Laurence Ridge, a professor of mathematical education at the Faculty of Education at the University of Toronto, five years earlier in 1981. Ridge's use of the term in that year was, to the best of my knowledge, the first time it was so utilized in the educational literature.

Mollica: *Eric Lennenberg had published a study on* The Biological Foundation of Languages *in 1967. What influence did his publication have on second-language teaching?*

Danesi: Bimodality theory hardly stands alone as a neuroscientifically-based proposal for second-language teaching. Interest among practitioners in brain research started, actually, in the late 1960s, right after linguist Eric Lenneberg published his widely-influential 1967 study, *The Biological Foundations of Language,* in which he put forward the hypothesis that there is a biologically-limited period for acquiring language that starts at birth and ends at adolescence. Research on the implications that Lenneberg's hypothesis had for the second-language teaching profession at large was started almost immediately. In the area of second-language teaching, such research led to the establishment of least three major teaching methods in the 1970s and 1980s – Asher's Total "Physical Response", Lozanov's "Suggestopedia", and Krashen's and Terrell's "Natural Approach". The fundamental feature that differentiated these methods from others was an explicit sequencing and formatting of the material to be learned and practiced in ways that were purported by their congeners to simulate how the brain handles incoming information.

Mollica: *Are you suggesting, then, "bimodality" as a method of instruction?*

Danesi: Not at all. Bimodality theory is not a method, nor was it ever intended to be one. It is a construct that has attempted to answer the following two basic questions: "Can knowledge about the brain truly inform not only the way we teach children with learning problems, but also the way we teach normal students in typical classroom situations?" And "What does it mean to say that a teaching approach is *brain-compatible*?" I should point out that I have found out through the years that such questions can only be *addressed,* not *answered,* simply because there is no empirical way to demonstrate that a specific teaching procedure is capable of activating a certain part of the brain – unless we put our students through a PET scan as we teach them something! And even if it could be shown that a certain part is activated, in response to a specific instructional stimulus, what would that truly mean, given that surprisingly little is known about the nature of the link between brain physiology and cognitive functions? Nevertheless, it is my cautious opinion to this day that bimodality theory can provide meaningful insights for second-language teaching.

Mollica: *Has "bimodality" influenced second-language textbook writers? If, so, in what way has it influenced them?*

Danesi: As I look at contemporary textbooks in language teaching, I notice that they have incorporated many of the features that I have been suggesting in terms of bimodality theory, and that I myself have incorporated in the preparation of my own textbooks. If nothing else, the bimodality construct has forced me to look more attentively and critically at the conditions I create in my own classroom and at the theoretical suppositions underlying any new instructional practice or teaching philosophy proposed by researchers and educators. Good language teaching is largely an art, and thus shaped mainly by hunches about what to do that come essentially from experience. But these hunches can certainly be confirmed or refined greatly by knowledge about how the brain acquires language.

Mollica: *From a neurological perspective, what does second-language acquisition imply?*

Danesi: From a neurological perspective, second-language acquisition implies a reorganization of the structure of some, if not most, parts of the brain. Evidence has emerged, for instance, that bilinguals and advanced second-language learners are equally lateralized in each of their languages (that is, have their two languages distributed equally in the brain) and that there might be a greater right hemisphere involvement in the early stages of second-language acquisition. However, I have always been skeptical about applying

such research to pedagogy directly without some intervening period of experimentation and reflection. Many educators have perhaps not always been judicious and cautious in applying neuroscientific theories, as the demise of the neurolinguistically-shaped methods has made obvious. Since I coined the bimodality theory, I have always attempted to verify by experimentation if any of its derivative constructs is truly useful in a classroom environment.

Mollica: *What are the main features of "bimodality" theory?*

Danesi: It is common knowledge that the left hemisphere is the primary biological locus for language. The apparent superiority of the left hemisphere for language was established more than a century ago in 1861 by the French anthropologist and surgeon Pierre Paul Broca, after he published his classic study of a patient who had lost the ability to articulate words during his lifetime, even though he had not suffered any paralysis of his speech organs. Noticing a destructive lesion in the left frontal lobe of the left hemisphere at the autopsy of this patient, Broca was thus able to present concrete evidence to link the articulation of speech to a specific brain site. Fifteen years later, in 1874, the German neurologist Carl Wernicke brought forward further evidence linking the left hemisphere with language. Wernicke documented cases in which damage to another area of the left hemispehere consistently produced a recognizable pattern of impairment to the faculty of speech comprehension. Then, in 1892, Jules Déjerine found that reading and writing deficits resulted primarily from damage to the left hemisphere alone. So, by the end of the nineteenth century the research evidence was pointing convincingly to the left hemispehere as the biological locus for language. This led to "localization theory"– the view that specific mental functions had precise locations in the brain. A corollary to this theory was the notion of "cerebral dominance" – namely, that the verbal Left Hemishere was the dominant one for generating the higher forms of cognition.

Mollica: *Surely, there were dissenters to the theory...*

Danesi: With a few notable exceptions, cerebral dominance theory dictated the research agenda of the neurosciences during the first half of the twentieth century. But the dissenters argued that language in a restricted sense – that is, as sounds, words, and sentences – could indeed have a primary locus in the left hemisphere; but as a discourse and expressive system it was more likely to involve neural processes that were distributed throughout the brain. Research in the early part of the century showed, moreover, that the brain was endowed at birth with a "plasticity" that rendered it highly sensitive and adaptive to environmental stimuli. This had, and continues to have, rather far-reaching implications for education in general. It was during the 1950s and 1960s that the first serious doubts were cast on cerebral dominance theory by the widely-publicized studies conducted by the American psychologist Roger Sperry and his associates on epilepsy patients who had had their two hemispheres separated by surgical section.

Mollica: *What did the studies show, if anything?*

Danesi: The studies showed that both hemispheres, not just a dominant one, co-operated to produce complex thinking. The studies also confirmed that the left hemisphere was the primary locus for language. As mentioned, in 1967 Eric Lenneberg showed that the process of acquiring one's language occurred within the period of childhood. On the basis of a large body of clinical studies, Lenneberg had noticed that most aphasias – the partial or total loss of speech due to a disorder in any one of the brain's language centers – became permanent after the age of puberty. This suggested to him that the brain lost its capacity to transfer the language functions from the left hemisphere to the non-verbal right hemisphere after puberty, which it was able to do, to varying degrees, during childhood. Lenneberg concluded that there must be a biologically-fixed timetable for the lateralization of the language functions to the verbal left hemisphere and, consequently, that the critical period for the acquisition of language was before adolescence. Although his time frame has been disputed, Lenneberg's basic hypothesis that there is a fixed period of time during which the brain organizes its division of labor remains, to this day, a plausible theory and a target for much debate.

Mollica: *The 1970s brought further research on the topic...*

Danesi: True. By the early 1970s, neuroscientists started showing that the left hemispehere was indeed the locus for language as a system, but that discourse and various interpretive

(semantic) functions were controlled by the right hemisphere. This led to the notion of "comprehensible input" in second-language acquisition, attributable mainly to Stephen Krashen, who suggested that for any new input to be comprehensible to classroom learners, it must be presented in contexts that allow the synthetic functions of the right hemisphere to do their interpretive work. The whole proficiency movement of the late 1980s was, in my view, indirectly influenced by the neuroscientific research and by Krashen's simple, yet powerful, idea. Today, neuroscientists have at their disposal a host of truly remarkable technologies for mapping and collecting data on brain functioning. The findings have, actually, confirmed previous ideas and theories of learning.

Mollica: *So, what are these theories of learning?*

Danesi: Essentially, bimodality theory espouses two basic instructional-design principles: the modal directionality principle and the modal focusing principle. It would appear, above all else, that the teaching of new notions and structures should follow an R-Mode (experiential) to L-Mode (analytical) "flow," as Krashen and others have suggested. This means that during the initial learning stages students need to assimilate new input through observation, induction, role-playing, simulation, oral tasks, and various kinds of interactive activities. Unlike many other brain-based approaches, however, bimodality suggests that formal grammatical explanations, drills, and other L-Mode procedures must follow these stages, otherwise the control of structure will not emerge spontaneously, unlike what Asher, Krashen and others have claimed. Incidentally, identifying a learning task as having an L-Mode or an R-Mode focus implies simply determining which mode is to be emphasized in the overall design of the task. This does not necessarily entail knowing which specific hemispheric function will be activated. The modal directionality principle thus claims:

- that experiential forms of tutoring belong to the initial learning stages, and
- that teaching should move quickly towards a more formal, analytical style (not ignore it).

I would like to make an analogy to music teaching. Learning how to play a new piece on the cello, say, entails the ability to mold the component mechanical skills needed to play the notes, phrases, etc. of the piece successfully into the global skill of "playing the music." So, in order to give the learner's L-Mode a better opportunity to analyze and organize the component skills into automatic psychomotor routines, the teacher normally starts out by playing the piece for the student, making appropriate aesthetic comments here and there. In this way, the student's R-Mode has an opportunity to decipher the new musical input in a holistic way. The component mechanical skills can now be understood separately and practiced apart from their expressive modalities. Needless to say, an advanced music student who is already in firm control of the required L-Mode skills through previous training will not have to spend as much time on this component as would a beginner. When the student has mastered the L-Mode aspects of the piece, then he/she will be in a position to integrate them with the R-Mode ones as he/she performs the piece. A consummate performance of the piece is, from a neurological perspective, a *bimodal* feat, requiring the integrated contribution of both the R-Mode and the L-Mode to the performative task at hand.

Mollica: *What is the implication of the modal directionality principle?*

Danesi: The modal directionality principle implies, above all else, that the teacher should leave ample room for student improvisation during the early learning stages. Instructional techniques which focus on discrete categories (words in isolation, sentence structure, rules of formation, etc.) will be of little value, since students generally have no preexisting L-Mode schemata for accommodating the new input directly. In order to make the new material accessible to the L-Mode (intake), therefore, the early stages should involve teacher and learner alike in activities enlisting

- exploration,
- imagination,
- spontaneity, and
- induction.

Once the initial learning stages have been completed, the teacher can "shift modes" and begin to focus more on formal, mechanical, rule-based instruction.

Mollica: *Is modal directionality, then different from the inductive method?*

Danesi: Modal directionality can be seen to be a different version of second-language teaching – the inductive principle. But

unlike its use in strictly inductivist methods (the Direct Method, the Audiolingual Method, etc.), it does not require the deployment of induction for *all* learning tasks, only those that involve new input. Thus, if a learning task contains knowledge or input that the learner can already accommodate cognitively, directionality can be efficiently avoided. So, modal directionality is really a commonsensical pedagogical principle that good teachers, and the better second-language teaching methods, have always embodied into their *modus operandi*. It is virtually a "law of learning" which claims that teaching should ensure a constant movement from experiential to expository learning conditions, from practical to theoretical content, and from concrete to analytical presentation styles.

Mollica: *So on what mode will the student focus?*

Danesi: The modal focusing principle claims that at certain points in the learning process the students will need to focus on one mode or the other for various reasons. After the learners have grasped the new concepts in an R-Mode way, for example, their mental systems can be said to be prepared to assign them to appropriate L-Mode categories. At this point, the teacher can step in with suitable L-Mode techniques, which focus on pattern practice, grammatical instruction, etc. Modal focusing might also be required at points in the learning process when, for instance, a learner appears to need help in overcoming some error pattern that has become an obstacle to learning – L-Mode focusing allows the students an opportunity to focus on formal matters for accuracy and control; R-mode focussing on matters of discourse formulation and conceptual meaning. Students themselves use their L-Mode overtly when they search for some ending to a verb, when they try to think of a word they have forgotten, etc. On the other hand, they use their R-Mode when they try to think of what to say. True *acquisition* can be said to occur when the students' attempts at discourse formulation can be seen to enlist both modes in a cooperative way.

Mollica: *Does the modal focussing principle, then imply that mechanical practice be conducted in an uncontextualized way?*

Danesi: Absolutely not! The modal focusing principle in no way implies that mechanical practice be conducted in an uncontextualized way. On the contrary, meaningful contexts should always be provided not only for new input, but also for focusing routines. This allows the R-Mode to complement and strengthen the intake operations of the L-Mode, especially during more mechanically-oriented focusing tasks. Contextualized language instruction enables the learners to relate L-Mode *form* to R-Mode *content*. Incidentally, I should mention that I adopted the terminology "L-Mode versus R-Mode," to refer to left hemisphere and right hemisphere functions respectively from art teacher Betty Edwards who coined them in a famous book on how to draw published in 1979 *(Drawing on the Right Side of the Brain)*.

Mollica: *What implications does "bimodality" theory have for second-language acquisition theory and for second-language teaching theory?*

Danesi: I suppose I coined "bimodality" to attempt my own rebuff to Lenneberg's critical period hypothesis. There have been many other critiques of this hypothesis. My goal was to suggest that perhaps the right hemisphere took over many of the functions that the left hemisphere had in childhood language acquisition. Thus, whether or not the native language has been lateralized by puberty, there is no reason to believe that this in itself will inhibit the acquisition and "neural absorption" of other languages after puberty. Bimodality claims that second-language acquisition is possible at all ages if the modal directionality and focusing principles are operative in the teaching process.

Mollica: *What influence did the "bimodality" theory have?*

Danesi: I also believe that, indirectly, the bimodality theory has influenced the critique of Universal Grammar theory in second-language teaching that surfaced in the late 1980s and early 1990s. According to the universal grammar paradigm, there exists a language organ in the brain that equips humans by the age of two with the ability to use the rules of a "universal" grammar to develop the specific languages that cultures require of them. The child only has to "set" a few language-specific "parameters" on the basis of parental input, and the full richness of grammar will ensue when those parametrized rules interact with one another and with universal principles. The parameter-setting view has been put forward to explain the universality and rapidity of language acquisition. The universal grammar theory

excludes the possibility of second-language acquisition ever equaling first language acquisition in childhood. But, in my view, to ascribe the inability to master a second language in adulthood to the accessibility of language universals rules out too many other possibilities – life experiences, previous training, etc. – which have nothing to do with language organs. UG theory simply ignores the brain's plasticity and the role of environment on learning. Moreover, the universal grammar theory must still answer the question of what rules are universal and which are not more satisfactorily than it has. When all is said and done, and the actual theory is examined closely, it becomes obvious that it is restricted to accounting for the development of syntax (sentence-formation) in the child. Admittedly, it does that rather successfully. However, the theory ignores a much more fundamental developmental force in early infancy – the ability of the child to make imitative models of speech samples and then to create new ones from them. Second, it ascribes primacy to language, ignoring other faculties (or assigning them a secondary status).

Mollica: *Is there only a UG for language, as Chomsky insists? What about the nonverbal modes of communication and of knowledge-making (gesture, drawing, etc.)?*

Danesi: Since these develop in tandem with vocal language during infancy, also without any training, does the brain possess "universal nonverbal grammars"? If the role of culture (the cognitive environment in which the child is reared) is simply to set the parameters that determine the specific verbal grammar that develops in the child, could it not also set, say, the specific gestural and drawing parameters that determine the specific forms of gestural and representational knowledge that develops in the child?

Mollica: *How does the "bimodality" theory help the language teacher?*

Danesi: Again, I believe that it provides a general framework for organizing one's teaching approach. The implications that modal directionality and modal focusing call forth are really common-sensical ones. Yet common sense is not always present in the methods or the approaches out there, which are often the children of fashion and educational ideology. During the initial R-Mode stage, classroom activities should be student-centered and novel input should be structured in ways that stimulate experiential learning. As in Di Pietro's *Scenario Approach*, the learners should also be allowed to generate their own strategies for orchestrating discourse scenarios. The students' inductive and exploratory tendencies should also be allowed to operate freely when introducing new grammatical or lexical information. However, during the subsequent L-Mode stage, the focus should shift to the teacher, who should follow up with grammar explanations, drills, etc. Focusing on some problematic aspect of grammar, vocabulary, etc. is to be encouraged if a student appears to have difficulty grasping it or using it.

Mollica: *How can these two principles be used?*

Danesi: These two simple principles could be used moreover to provide insight on everything from textbook selection and materials preparation to syllabus design. In effect, I put forward and refined bimodality theory over the years to synthesize in concrete terms what good teachers have always known. Incidentally, the research on the use of bimodality theory has never produced negative results (to the best of my knowledge). As I stand back and look at it, it amazes me that a simple construct I created over two decades ago to simply articulate a feeling of disenchantment could be so serendipitously fruitful.

Mollica: *Any caveats to the theory?*

Danesi: Interpreting the research on the role of the brain pedagogically must always be done with a great deal of caution. This is so because learners have different learning styles (a preference for one or the other learning mode). A student with a dominant L-Mode learning style will gain very little from an abundant use of R-Mode techniques. Similarly, grammar-based instruction for students with an R-Mode learning style would probably prove equally futile. Finally, teachers should not expect to find a prescription in the notion of bimodality of how to teach a language methodically. Brain research is useful only in providing insights, not overarching methodological solutions. My hope has always been that my teacher colleagues will get some positive from it. That and that alone will have made all the work I have conducted on the bimodality construct worthwhile.

Mollica: *What techniques already available can be explained in*

bimodality terms or can be constructed bimodally?

Danesi: Actually, you yourself have been an unwitting pioneer in this area, with your work on puzzles and the commercial success you have had with your books of crossword puzzles. *[Editor's Note: See* Anthony Mollica, "Games and Language Activities for the Italian High School Classroom." *Foreign Language Annals,* 12, 5(October 1979): 347-354 and "Visual Puzzles in the Second-Language Classroom." *The Canadian Modern Language Review/La Revue canadienne des langues vivantes,* 37, 3 (March 1981): 583-628.] Puzzles span the spectrum of bimodality. Some are pure L-Mode ones, like crosswords; others, like visual puzzles, lean towards the R-Mode. And research on brain functioning is starting to show that we were right from the outset; namely that doing puzzles activates all areas of the brain.

Mollica: *I agree. Without knowing the theory, "unwittingly" – as you put it – I have used and use visual puzzles and word games, or "recreational linguistics", as I prefer to call them, to highlight language learning because students and I find them to be motivationally effective.*

Danesi: All visual techniques are highly effective, because they initiate the flow from the R-Mode to the L-Mode. The first systematic use of visual techniques in SLT can be traced back to Comenius' textbook, the *Orbis sensualium pictus (The Visible World in Pictures)* of 1648. Visual techniques are those that either:

- provide visual contexts to accompany the verbal input (as in cartoon strips with missing text), or else
- provide illustrative support for some explanation, exercise, activity, etc.

Audiovisual devices, such as videos, film strips, computer software of various kinds, can also be included in this category. The literature on the use of the latter is rather large and need not be discussed here. Suffice it to say, generally, that visual techniques not only support teaching, but also provide crucial R-Mode contextualization for learning.

Mollica: *Yes. Crossword puzzles, word searches, anagrams, interactive games, board games and so forth have become an intrinsic component of many second-language teaching approaches especially for the review and reinforcement of grammar, vocabulary, and communication skills. But what does the research show about these techniques?*

Danesi: Two clear facts have emerged from the literature on such techniques and from anecdotal evidence. First, they are supportive of language acquisition processes. Second, for such techniques to be effective, they must be designed with specific instructional/learning objectives in mind. A distinction between language teaching puzzles and language teaching games should be maintained for pedagogical purposes, as you and I have suggested in previous writing *[Editor's Note: See,* Marcel Danesi and Anthony Mollica "Games and Puzzles in the Second-Language Classroom: A Second Look," *Mosaic,* 2, 2, (Winter 1994, pp. 14-22)] since the former are problem-solving texts that require the individual learner to come up with a solution, while the latter involve group-based problem-solving activities.

Mollica: *What must the teacher keep in mind in preparing these activities?*

Danesi: Before selecting or preparing the specific LTPs or LTGs for classroom learning objectives, the teacher should always keep in mind that the preferences, learning styles, and backgrounds of the students must be taken into consideration. Most learners can handle LTPs that are cast in simplified form (e.g. elementary crosswords, word searches, etc.). But some have great difficulty in handling such LTPs as logic puzzles, rebuses, etc. Therefore, bearing in mind that LTPs and LTGs must be synchronized to the learners' abilities and level of competence, ludic techniques are useful for at least three reasons:

- Some language teaching puzzles promote L-Mode form-based language learning; others promote R-Mode conceptual learning. The former can be called form-based language teaching puzzles, the latter concept-based language teaching puzzless. Language teaching games promote R-Mode communication-based learning.
- Both language teaching puzzless and language teaching games can be easily constructed and keyed to specific and general instructional objectives. Once the learning task has been determined, the teacher can select or construct the appropriate language teaching puzzles or language teaching games to accomplish it.
- Language teaching puzzless and language teaching games should be used judiciously. They should never be used as "time-fillers." The learners should be made to understand that they are just

as much a part of the course as are other kinds of exercises, drills, activities, etc. The teacher should also keep in mind that the over-use of LTPs and LTGs is not desirable. To maintain interest, the teacher should always diversify the types of LTPs and LTGs used together with other kinds of techniques.

The number and diversity of uses form-based LTPs can have is limited only by the imagination and specific requirements of the teacher. Concept-based LTPs, on the other hand, focus the learner's attention on meaning, and are thus especially useful for promoting conceptual fluency. Riddles, logical deductions, simple math puzzles, and the like fall into this category.

If a pattern or task is determined to be novel, then the modal flow principle applies. This involves the use of R-Mode techniques during the initial orientation period. The more the student knows about the L2 less crucial is it to abide by the requirements of the modal flow principle, since enough L-Mode schemas are available to the learner to process the new input. The follow-up explanatory and practice stage is, of course, an L-Mode phase. Any structural, visual, or ludic technique can generally be used to meet the learning objectives of this stage. It depends on the nature of the course and the learning styles of the students. Allowing the students to apply the new pattern to creative role-playing constitutes the final "intermodal" phase. There is no evidence to suggest, incidentally, that role-playing techniques promote learning during orientation stages. They may, in fact, even be detrimental, leading to fossilized errors.

Mollica: *What is the most important aspect of "bimodality"?*

Danesi: The most important aspect is that a correlation between the linguistic, communicative, and conceptual systems must always be maintained. Needless to say, it would be just as foolish to claim that neuroscience provides the answers to solving the dilemma of how best to teach languages, as it is to claim that psychology and linguistics do. We will probably never be able to solve the dilemma with the theory-into-practice paradigm, because of the complex biological, social, emotional, and conceptual nature of the overall learning task. But we can certainly try.

Mollica: *Thank you.*

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