Language, Languistics, and Languistic Technology: A Personal View

The development of a sounder, more pedagogically applicable theory of language would benefit both language theoreticians and classroom practitioners. Because many current, even popular, theories are extrapolated from other disciplines, they are not based on what happens in language classrooms. One such extrapolation, Second Language Acquisition through Classroom Communication (SLACC), purports to develop language proficiency and linguistic competence. However, as the results of French immersion programs reveal, SLACC does not result in linguistic competence; its push toward proficiency results in communicative incompetence, that is, students trying to cope prematurely with free communication, thus internalizing a faulty classroom pidgin.

The author discusses five desirable and necessary features of a sounder, more pedagogically applicable theory of language and critically examines major language theories and technologies in light of their theoretical justifications versus their realistic classroom applications.

It would seem obvious that sound language teaching theory should be based on successful experience and research in language teaching, not on the assumptions of specialists in other disciplines. Nevertheless, many of us in the language teaching profession want to base our work on—or at least justify our practices on the basis of—linguistic, psycholinguistic, and sociolinguistic assumptions about language and language acquisition. Linguistic theories, however, do not seem directly relevant to language teaching.

Many years ago—when the "new" linguistics were enamored with binary formulas—I asked a senior professor of linguistics for the rationale behind the penchant for binary formulas. He explained to me that, ultimately, mental activity amounted to neural connections being either "on" or "off." Although his explanation did not convince me, I could not, at the time, argue with the apparent "evidence."

Today, we can all argue with the "evidence" because we know that our brains do not work like digital computers. The analogy of the human brain to the computer—even more than the analogy of computer to brains—if not untenable is at least highly questionable. Recent research evidence shows that neurons are connected, not to a few but to hundreds even thousands of other neurons; information in the brain flows in more than one direction. It appears undeniably clear: the structure of the human brain is far more complex and infinitely more flexible than any computer. Cybernetics (a term coined by Norbert Wiener in 1948) and information theory (developed at Bell Laboratories the same year) are not only mistaken in considering the computer as a quasi-model for the human mind, but in so doing may have done humanity a great disservice; these theories have encouraged people to think of themselves as slow-witted computers, inferior to most technological wonders.

It is, therefore, not difficult to conclude that the school of linguistics that has been dominant for over two decades—with its strong preference for unidirectional binary rules of the

"plus"/"minus" type—is based upon an erroneous model of how the brain functions. If that is the case, it would make transformational-generative grammar fundamentally inadequate as a theory, regardless of its advantages (and disadvantages).

If and when a sounder theory of language emerges, we can only hope that it follows closely the workings of the human brain rather than trying to accommodate yet another type of computer. If and when a new, more pedagogically applicable theory of language emerges, we can only hope that it will address itself to the following desirable, even necessary, features or characteristics.

Audio-Oral Phenomenon

A pedagogically applicable theory of language would deal with language as primarily an audio-oral phenomenon. Many authors have eloquently argued the primacy of speech. Suffice it to say that the great majority of communication time is spent on oral communication; what the great majority of our students want is to speak the language they are studying.

Linking Creativity and Control

It is unfortunate that attitudes toward language have been polarized, namely, the linguists' view of language as structure and the sociolinguists' view of language as communication. Regrettably, this rift has drifted into language teaching which used to be "structural" and now is "communicative." A new theory of language should eliminate this artificial split; a pedagogically applicable theory of language must not put such inordinate emphasis on linguistic creativity that it loses sight of the need to fully control the mechanism of language. Being creative with a tool one does not control is unlikely to produce good results.

Temporary Separation of Language Components

Although language functions as a whole in natural settings, a pedagogically applicable theory of language would allow and encourage—for analytical and teaching purposes—the temporary separation of language components which would be reintegrated in language use. For example, one should be able to deal with a phonological problem as such—temporarily apart from syntactic, semantic, historical and communicative considerations—and then proceed to the use of the sound in meaningful context. This need points to the desirability for developing pedagogical phonologies, morphologies, and so on.

Contrastive Analysis

Chomskian linguists are much more interested in universals as opposed to differences among languages. But, in language teaching, universals are not very useful—after all, what is universal is already known by our students. Contrastive analysis, which acknowledges similarities but concentrates on differences, is much more useful for us.

The problem is that transformational-generative linguists have never gotten over their initial aversion-by-association toward contrastive analysis. As language teachers, we should not be overly concerned with who started contrastive analysis—structuralists or prehistoric cavemen. If contrasting languages is enlightening and useful in language teaching—and I think it is—should it not be pursued in spite of current or future theoretical orientations in linguistics? In language teaching, it seems to me, awareness of interlingual similarities and differences—while no panacea—is important for both teacher and student.

Language Learning Via Instruction

A pedagogically applicable theory of language would include among its tenets language learning by means of instruction. The once clear water of assuming that languages can be learned has been muddied in recent years by psycholinguists who insist that languages cannot be learned well after a certain age; therefore, there is not much rhyme or reason in trying to learn them systematically through instruction. The

only thing that works is natural acquisition or picking a language up—even in the classroom—or so the theory goes. With a pedagogically applicable theory, theoreticians and practitioners would take a renewed interest in classroom language learning through instruction, and with enthusiasm and vigor test anew the hypotheses of this important reality of language learning. It would seem that language teaching could be much more effective if languistic theory (the term "languistics" was coined by Brooks in 1964 and expanded by Hammerly in 1982 as a one-word label for "the science of second or 'foreign' language teaching and learning.") and practice were based on what happens, could happen, or should happen in language classrooms and not what seems to be happening in other, very different situations, namely, native language acquisition in the nursery and playground or natural second language acquisition in the street, the workplace, or leisure activities.

Language teaching has been a faddish field, in part because it has lacked its own body of researched knowledge. Although we have seen rapid change in the field during the last century, the question remains: Has language teaching been transformed into a discipline, or more importantly, a science? Although we have switched from method to method and trend to trend, we have done so primarily on the basis of opinion, not solid evidence. Even if the opinions on the basis of which we played musical methods were common-sensical, they were opinions nevertheless.

There have been many methods. Furthermore, certain changes in methodological emphasis have been a breath of fresh air. Since the Grammar-Translation Method, for example, did not result in audio-oral skill, some sort of reactionary change was necessary. Since the Direct Method was too slow, a more efficient method of developing audio-oral skills had to found. When distorted and twisted into a very mechanical approach—as it all too frequently was—the Structural (later, Audiolingual) Method produced linguistic robots unable to communicate; as a reaction to the robotization of communication, a shift in favor of communication resulted.

The trouble is that methods, either as originally envisioned and proposed by their developers or as misused by less informed or less competent followers, tend to drift toward extremes: On the one extreme, we favored little more than rules and one-to-one word translations for years; on the other extreme, we favored the idea that we should never again have a rule or a word in the native language. Overall, there has been a swing from structure without communication to communication without structure. When our extremes have included technology, there, too, we have either abhorred it or adored it. What we need is *principled eclecticism,* not colorful bandwagons.

Between waxing and waning trends, trends that have become movements, and the proposals that make brief appearances in our professional journals, it is difficult for many of us in the profession to establish a firm sense of direction. What we are currently facing does not seem any less confusing: amidst the rise of computerization, language laboratories (which seem an endangered species in high schools) might make a comeback; individualization has long disappeared (or is computerization bringing it back for good?); despite lack of evidence to support it and considerable evidence against it, we are still in the grips of the communicationist/acquisitionist/naturalistic megatheory; and, if that were not enough to make us jump on our horse and ride madly off in all directions, the latest movement in language learning is teaching for proficiency.

In all of this, where is the empirical evidence on which we can rely? Where is the solid foundation on which our discipline can rest? Without empirical evidence, it is difficult to imagine how teaching can become the science of languistics. Unfortunately, for over 15 years, many applied linguists have been exploring minutiae about language acquisition in natural settings and ignoring language acquisition in the language classroom. Worse, perhaps, applied linguists have extrapolated their findings about natural language acquisition to the classroom setting. Are we to believe that the two are identical?

Careful empirical studies directly focused on classroom language teaching/learning are few and far between. For example, have we seen any descriptive—let alone experimental—studies of the spoken and written output of students who have gone through the Communicative Approach or the Natural Approach? English as a Second Language (ESL) research, unfortunately, does not qualify, for in such research the effects of the teaching approach cannot be separated from the linguistic influence of the community. English as a Foreign Language (EFL), on the other hand, can provide a controllable experimental situation.

The Communicative Approach

Let us turn our attention briefly to second language acquisition through classroom communication (SLACC) which follows the communicative/acquisitionist/naturalistic megatheory that has emerged from the writings of people such as Stephen Krashen, Sandra Savignon, and Tracy Terrell.

According to this theory, languages can be acquired naturally in the classroom, provided the students are given comprehensive input; structure need not be emphasized, as it will gradually be mastered; there is no need to correct errors, as they will gradually disappear. It is not difficult to see the extrapolated origins of such views: they come from the natural second language acquisition of immigrant children theories and from the theories revolving around native language acquisition.

The primary problem is that natural acquisition does not work in language classrooms. The results of language immersion programs seem to amply demonstrate this reality. In the event that the reader is wondering about the relevance of immersion programs in a discussion of the Communicative Approach, suffice it to say that immersion is strictly a SLACC program. Krashen—in addition to repeatedly identifying SLACC as one of the approaches that conforms to his theories—has praised immersion highly, saying that it "may be the most successful programme ever recorded in the professional language-teaching literature" and "no other programme, to my knowledge has done as well" (1984, p. 61).

But, in 13 years, SLACC in the form of the immersion approach fails to produce linguistic competence. Whether their linguistic production is evaluated in the early grades (Adiv 1980), through the seventh year of SLACC (Spilka 1976; Gustafson 1983), or near graduation, after 12 or 13 years of instruction (Tatto 1983; Pawley 1985; Pellerin and Hammerly 1986), immersion students make frequent errors of the most basic kind. They can manage to put their ideas across, i.e., they can "cope" communicatively, but they are linguistically incompetent.

The reasons why immersion (and therefore, SLACC) has failed—and why almost all assumptions on which it is based are incorrect—have been discussed elsewhere (Hammerly 1985). Permit me to reiterate that when the emphasis of a program is on functional communication, and when students are amply rewarded—even congratulated (Calve 1986)—for just getting their thoughts across no matter how incorrectly, their motivation to ever speak or write correctly is lost, and the outcome is predictably poor. It would appear that the comprehensive input Krashen considers sufficient for second language acquisition is inadequate in the language classroom. The language classroom requires manageable and carefully managed linguistic output, controlled step by step—something SLACC students are not getting.

Because the classroom setting requires the explicit, systematic teaching of language structure through intelligent conditioning (cognitively mediated conditioning), a better way to develop bilinguals in the school setting would be the following: offer several years of systematically, carefully graded, semi-intensive language instruction with a structural emphasis, followed by partial immersion for the rapid expansion of vocabulary and the development of fluency. In every phase of the process, the student would learn something first, then use it.

Teaching for Proficiency

Thanks to the tireless efforts of the American Council on the Teaching of Foreign Languages (ACTFL), teaching for proficiency has gained momentum. As a movement and as a rationale, teaching for proficiency has strengths and weaknesses.

Being specific about terminal goals and what such specificity entails is certainly a strength of the movement; it seems vacuous to argue, however, that "the native speaker" cannot be found because it seems obvious that any linguistic standard must necessarily be an abstraction. Another strength of the movement is its intention to reinstate the importance of language structure in the learning of languages.

The weakness of the ACTFL Proficiency Guidelines that concerns me the most is that they describe faulty language as normal transition stages on the way to linguistic competence—precisely the same misconceptions about errors in reference to SLACC. Describing stages of progress in terms of faulty language that gradually improves is fraught with peril: it is bound to mean that such faulty language is normal, even unavoidable in second language development—which experience alone tells us is not the case. If classroom learners, however, are encouraged to learn, e.g., survival Spanish or French—Spanglish or Frenglish—it is this very encouragement that robs them of their motivation to do anything beyond "surviving" linguistically.

Equally troublesome, are the global proficiency interviews in the ACTFL Guidelines. The original Foreign Service Institute (FSI) interviews were designed to assess linguistic function especially after a person had substantial exposure to the language; they were summative assessments, not progress tests. The use of global proficiency interviews to measure progress within a program seems ill-advised. Such proficiency interview testing is very likely to result in students concentrating on "coping" linguistically in order to do well communicatively at the expense of accuracy. I think progress interviews should measure the ability of students to understand only what has been taught through a given point of a program, not encourage students to function far beyond their linguistic competence in order to perform well on a global assessment.

Another weakness of both the proficiency movement and the ACTFL Guidelines is that they do not avoid the same pitfall of SLACC: While calling for more attention to accuracy, they urge that students be encouraged to express themselves creatively as early as possible. Unfortunately, early creative self-expression and linguistic accuracy are incompatible goals, as the evidence from immersion programs so clearly demonstrates.

Movements ebb and flow, but every movement has a crucial aspect of language teaching, namely, the role of the teacher. At various points in recent history, language teaching orthodoxies have tended to dehumanize teachers by expecting them to function as less than human beings. "Grammar-translationists"—to coin a term—tended to see teachers as extensions of the grammar book and dictionary. Audio-lingualists—who distorted language teaching into something approaching the purely mechanical—considered teachers little more than live tape recorders. For audiovisualists, teachers were "the most important audio-visual aid in the classroom" (Corder, 1966, p. 33); even so, with appropriate materials, the teacher's role was supposed to be "secondary" (p. 79). Individualizationists have viewed the language teacher as a mere coordinator of the learning process, thus stripping the teacher of several important functions (only the learner seemed to be fully human at all times). Communicationists are turning the language teacher into a conversation stimulus device and not much else. Will computerists relegate teachers to the role of dispensable adjuncts ("live courseware") to the computer?

What all these views have in common is that they are all teacher-demeaning. Language teachers are more than implementors of methods and adjuncts to technological devices; above all, it is they who should and must be in charge of all aspects of classroom instruction.

It is in their role as creator of a rich and conducive language learning environment that

classroom language teachers encounter languistic technology of various types—technological aids that have advantages and limitations as devices to help accomplish those aspects of the instructional process which can be achieved by their use.

Visual Aids

These aids (which are treated in greater detail in a forthcoming book by Brown and Mollica) have major advantages but also some serious limitations. If a sound philosophy describing their role in the languistic program is to emerge, their advantages and their limitations must be taken into account in the preparation and presentation of language materials.

The advantages of visual and audiovisual aids can be described as follows:

(1) they have an ability to bring the world into the classroom, thus helping to create an atmosphere conducive to language learning;

(2) they contribute to student motivation;

(3) they have the ability to help focus student attention on what teachers want to emphasize;

(4) they can present virtually every situation, together with its significant nonlinguistic context;

(5) they can perform a supportive role in explaining language structure;

(6) they enhance general comprehension;

(7) they reinforce the retention and recall of meanings and sequences;

(8) they provide cultural insights; and

(9) they can be conversational stimulants; this is, perhaps, their most useful function.

With these apparent advantages, however, also come serious limitations:

(1) visual aids can and do draw attention to themselves and away from the forms of the target language;

(2) by using visual aids to increase the amount of information conveyed pictorially, we reduce the amount of information conveyed linguistically; here, visuals may prevent the maximal development of listening and reading comprehension, for to the extent that comprehension is based on visual aids, it may not be based on the linguistic message;

(3) visual aids are unreliable in initially conveying the meaning of specific words and sentences—a reality that accounts for their worst misuse;

(4) visuals are also ineffective in eliciting specific words or meanings; and

(5) frequent use of visuals apparently restricts the imagination of students and discourages them form elaborating their own more mnemonically powerful associations and mental images.

Visual and audiovisual aids should be used in such a way as to exploit their advantages and minimize their disadvantages. Above all, they should not be overused and made the centerpiece of the languistic program. A language, after all, is not primarily a visual phenomenon.

Recordings and Language Laboratories

An adequate philosophy and rationale for the use of recordings and the language laboratory has yet to be developed. Were recordings and language laboratories to be used mostly for individual study, performing the same function as books do for students of history, for example? My hopes were that this would be the case; regrettably what happened instead is that many laboratories were taken over by Skinnerians who wanted the "rats" to march through the tapes in synchronized steps.

Recordings could have brought a large variety of graded listening experiences (available day or night) to the learner, but they did not. Some institutions did develop listening libraries or centers, but by and large, they offered ungraded materials instead of collections of various levels of difficulty which all, except advanced learners, need.

Real conversation is not possible with a tape recorder or a computer, but a variety of "simulated conversations" is possible. Even here, the

potential has not been exploited. Equally unexplored is the potential of the lab for speaking tests—not free speaking but guided, semi-free speaking tests. If language labs are used for testing, even in schools with excellent facilities, they are used only minimally.

We seem so disinterested in audio technology that we haven't even taken care to insure that the study of recorded materials is a necessary ingredient in our language programs. Since the material on the tape is almost always a duplicate of what is in the text—which is normally the same material presented by the teacher—study with the audio materials is discouraged. By failing to assign considerable weight in the course grade to laboratory study and tests based on material available only on tape, we are single-handedly dooming the language laboratory and its audio technology.

Computers

These speedy devices could be very useful in language teaching or they could suffer the same fate as language laboratories. Audio tape technology never had its role in languistics properly defined, and was consequently misused; then when proven ineffective (or worse, being blamed for poor results), audio technology was largely abandoned in languistics.

The advantages of computers seem to reside in their ability to (a) bring together several media such as written language, graphics, sound, and animation and put them under teacher, student, or automatic control; (b) facilitate highly individualized mechanical and semi-free practice outside the classroom; (c) in conjunction with recordings, serve as a main source of practice in partially self-instructional programs; (d) provide immediate discriminative graphemic/graphically based feedback, showing clearly the consequences of various choices; (e) help students match visually displayed patterns of stress, intonation, and rhythm with the help of an oscilloscope or similar visual display; (f) help students learn vocabulary, develop reading comprehension, and practice mechanical and semi-free writing; (g) provide partial prompts that can be revealed as needed; and (h) keep various records readily available to teacher and students.

Claims that humanize the computer such as saying that it is patient, consistent, impartial, and tireless should be taken with a grain of salt; one could just as well say computers are unforgiving (press the wrong key and see what happens) and overly dependent on unreliable sources (have you ever had a power failure?).

Let us not humanize computers. They are there to be used for what they truly are—things. Things cannot think; they can be used to record, store, and reproduce language, but they cannot nor will they ever be able to understand or produce language in all of its natural beauty and unpredictability; computers handle only what has been preprogrammed into them. Computers are things and can neither feel nor act in an intelligent, conscious manner. They cannot believe; they cannot strive for ideals, including the ideal of excellence. Although we can learn from things, they cannot teach us, if by teaching we mean intelligent, spontaneous, creative interaction.

Human beings are infinitely superior to things. Humans are not machines nor are their brains computers. Albeit slower in some functions, brains are superior to computers, even to the best computers yet to be developed.

Many language teachers fear that leaders in the profession who are unwilling to admit that computers are inherently limited may try to substitute computers for teachers. There is some justification for this fear, particularly when one sees the computer hailed as "surrogate teacher" in some of our publications (Howlett, 1986, p. 42). Competent language teachers are irreplaceable because they can do many things computers cannot do; language teachers who are so incompetent that machines can replace them, perhaps deserve to be replaced.

There is danger that, since computers are primarily graphemic/graphic media, language teaching will once again become mostly a matter of reading and writing instead of the primarily

audio-oral phenomenon that it is. Regrettably, there is danger already materializing in situations where computers are used extensively in language teaching.

The major problem with computers in languistics is software. Few second language software developers seem to know much about language teaching and few second language teachers know how to program the computer. As a result, language teaching software is being developed in a philosophical vacuum where there is no philosophy of language teaching nor any clear idea of where the computer fits in within the parameters of such a philosophy.

One of the obvious consequences of software development in a philosophical vacuum is that most available second language software is for beginning students. These, however, are precisely the students who should not be using computers; if we want students to become linguistically and communicatively competent, the early stages of language learning should primarily train students in the audio-oral skills, not in reading and writing.

A further danger—one often mentioned also in connection with tape recorders—is that through increased use of computers in learning laboratories, second language learning may become an activity pursued by individuals in quasi-isolation. This danger is real. We need to keep in mind that language is a social phenomenon; impression depends on expression. This is not to be confused with responding to prompts on a computer screen; it means expressing the self in interaction with responding human beings. Practice with persons, especially competent teachers, remains essential; developing the ability to communicate accurately and fluently does not seem possible in the absence of people.

We should not do with computers what we did with language laboratories—use them mindlessly. Yet the promotion of the computer—from hardware and software salesmen to uninformed administrators and teachers—has the familiar ring of the same old pitch used to sell language lab technology. If we in languistics fall for the same lines, if we expect computer technology—like the language lab technology of the recent past—to do what it cannot do, namely, replace teachers, then, once again, we will succeed in creating another generation of technophobic teachers and robotic students.

Conclusion

If we do not allow technology to determine our methodology but, instead, control it so it *serves* a pedagogically sound philosophy of language teaching, then, and only then, will technology play a clearly useful and constructive role in languistics.

Competent language teachers will not shun technology if it does not pose a threat to them. And, it should not threaten them. As Alatis (1986) put it, "technology is good, but humanity is better." I would go one step beyond that and say, "Humanity with wisely used technology is best."

Far from shunning languistic technology, competent language teachers will *want to use it*—from audiovisuals to laboratories to portable recorders, to computers and interactive discs. After all, what are languistic technological aids, properly understood, but the extension of a good teacher's body, mind, and spirit?

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