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## Language Acquisition and Language Learning

THE inclusion of language acquisition and learning in the second edition of this volume is a noteworthy event, for many readers probably do not engage in second-language research but pursue literary or linguistic studies and teach language classes. For those readers, I would like to place the field of research I describe here in its proper relation to the teaching they do.

Foreign language pedagogy has long been guided, directly or indirectly, by theories of language and learning. These theories have given rise to various methods or approaches, which have found their way into textbooks and syllabi and, in bits and pieces, into teachers' practices. H. H. Stern gives an exhaustive account of the history of language teaching and its relation to the theoretical thought of various disciplines. Until recently, however, language teachers have not based their teaching consistently on theoretical research. Most of them learned their craft on the job, teaching the way they were taught and the way their teachers were taught. Both literature scholars and linguists were convinced that learning a language was only a matter of memory, repetition, and hard work and of acquiring skills that students would then learn to use by going to the country where the language was spoken. Language teachers knew nothing of how people learn languages or of why some learners fail and others succeed.

My own career is a case in point. Trained in German literature and philology and called on to teach German language classes, I remember my despair at not understanding the most elementary principles of language use. I had to teach conversation classes but did not understand the systematics of conversation; I had to teach texts but had not been told what a text is; I had to correct errors but did not know why errors had been made. I remember my amazement one day in the early 1970s when I happened on studies in conversation and discourse analysis, and I immersed myself in the new field of second-language-acquisition research. Everything I taught started making sense. Everything I researched fell into place.

I began to see that literature and language scholars and teachers have much to learn from each other. Literature scholars can broaden their critical tools by applying to literary texts the same methods of discourse analysis that language-acquisition scholars use for analyzing the production of public discourses, including the discourse of the language classroom itself. At the same time, language-acquisition scholars can broaden their reflection on language learning to include not just the functional uses of language but also the figurative uses as presentation

and representation of reality (Widdowson, *Stylistics*). Moreover, literature scholars can bring to language teaching their unique training in the critical analysis of texts.

I would tell the novice language teacher, Go beyond the textbook you teach and learn about the way language is spoken and used. The literature you study and the language you teach are grounded in language as social practice, and "language has its rules of use without which rules of grammar would be useless" (Hymes 278). Read work in psycholinguistics and sociolinguistics as well as in linguistic approaches to literature. Understand the foreign culture you teach not only through its literature but also through its social sciences and ethnography. Deepen your knowledge of your students' own culture by reading similar studies about the United States or Canada, both in English and in the foreign language. The better you understand language and language use, the better you will be able to transmit to your students the critical knowledge you have gained by being a participant observer and researcher of that unique educational setting, the foreign language classroom. In the field of language acquisition, theory and practice enrich each other (see Ferguson).

It is important to distinguish between a teaching perspective and a learning perspective on language acquisition. Whereas teachers are mainly concerned with relating student performance to teacher input in a principled way, a learning perspective describes the process of attempting to acquire a second language. Before teachers can devise effective activities and techniques for the classroom, they must first understand how people learn languages. Thus language-acquisition research adopts primarily a learning perspective, and only in this light does it consider implications for language teaching.

## LANGUAGE ACQUISITION AND LEARNING

The capacity to learn one's native tongue and then another language or several more is a unique property of the human species that has not ceased to amaze parents, linguists, and language teachers. How do children manage to produce an infinite number of sentences with the finite means of available grammars? What is the relation between their cognitive and their linguistic development? What makes learning a second language as an adult different? And then, as Michael H. Long has asked, Does second language instruction make a difference? If the answer from second-language-acquisition research is yes, then we must determine exactly what we can and should teach at what level for what purpose.

These questions have not only inspired scholars in linguistics, psychology, sociology, and education to pursue research in language acquisition, they have fueled political passions as well. In various countries, scholars' research results are used (or misused) as a basis for such policy decisions as the maintenance or abolition of bilingual and immersion programs, the restoration of high school and college foreign language requirements, and the governance structure of

language and literature departments. Beyond academia, language-acquisition research helps us understand the links between language, literacy, and sociocultural identity, as well as the interrelations of foreign language teaching, national interests, and international peace and understanding (Kramsch).

The terms *language acquisition* and *language learning* have come to designate first- and second-language acquisition, respectively. According to a distinction popularized by Stephen Krashen, whose work I discuss later, the term *acquisition* is meant to capture the way children learn their native language in naturalistic settings, while the term *learning* refers to the conscious applications of rules in the study of a second language in instructional settings. However, this dichotomy is not so clear-cut. After all, adults can also "acquire" a second language in naturalistic settings, and a certain amount of "acquisition" also takes place in classrooms.

Another distinction is made between a *second language* and a *foreign language*. A second language is one learned by outsiders within a community of native speakers, such as English as a second language (ESL) taught in the United States. A foreign language is a subject learned in an instructional setting removed from the relevant speech community, such as French in United States high schools. Second-language-acquisition research is uncertain about the nature and the degree of difference between second-language learning and foreign language learning.

Since the 1970s scholars have considered a variety of questions under the generic category of second-language-acquisition (SLA) research. For instance, are the processes of first- and second-language acquisition—or of second- and foreign language acquisition—similar? If so, for which learners, under which conditions, at which stage of acquisition? How much consciousness and which cognitive operations are involved? To what extent, if at all, is learning a language like learning, say, how to ride a bike?

## HISTORIC OVERVIEW

First- and second-language acquisition are relatively recent domains of inquiry. At a time when language study was closely linked to philology and phonetics, European scholars such as Henry Sweet, Harold Palmer, Otto Jespersen, and Wilhelm Viëtor attempted to apply the findings of the linguistic sciences to language teaching. Despite developments in linguistic thought in the 1920s and 1930s, however, no theoretical foundation was established for language teaching before 1940, and questions about what it means to acquire, learn, and know a language did not get addressed before the 1960s.

Until the 1960s, theories of language acquisition were subsumed under general theories of learning, and the prevalent theory was behaviorism. Children were thought to learn their native language by imitation and reinforcement. It was believed that learning a language, whether one's native tongue (L1) or a

second language (L2), was the result of imitating words and sentences produced by adult native speakers. Foreign language learning was assumed to be most successful when the task was broken down into a number of stimulus-response links, which could be systematically practiced and mastered one by one, such as verb conjugation or noun declension. The major concern was how to teach language so that it could be acquired as a set of habits. Learning a second language was seen as a process of replacing old habits with new ones, so errors were considered undesirable.

The subsequent work of Noam Chomsky, particularly his *Syntactic Structures*, led researchers to question behaviorist explanations of language acquisition. Chomsky made it clear that learning a language is not the acquisition of a set of habits. Rather, children are born with what he called a "language-acquisition device," a uniquely human mental organ or cognitive capacity to acquire language. Children learn their native tongue not by deficient imitation of the full-fledged adult system but by a dynamic process of formulating abstract rules based on the language they hear.

Around the same time that Chomsky initiated research into the mental processes at work in the acquisition of a first language, Robert Lado's classic work *Linguistics across Cultures* focused attention on the errors that second-language learners make. Lado claimed that "we can predict and describe the patterns that will cause difficulty in learning, and those that will not cause difficulty, by comparing systematically the language and the culture to be learned with the native language and culture of the student" (vii). He outlined procedures for making such comparisons in phonology, grammar, and vocabulary and in the cultural aspects of a language. Lado's research, linked with the audio-lingual method of language teaching, had a far-reaching effect on language-teaching practice. A later series of texts on contrastive structure, such as William G. Moulton's *Sounds of English and German*, directly applied Lado's work. Teachers were encouraged to teach pronunciation, for example, by isolating particular German sounds like *Miete* and *Mitte* and contrasting them with English sounds like *bean* and *bin*.

Lado's work also exemplifies the way second-language learning has influenced linguistic research. Written in the heyday of structural linguistics and behaviorist theory, it became associated with a movement in applied linguistics called contrastive analysis, which claims that the principal barrier to second-language acquisition is the interference of the L1 system with the L2 system. Linguists distinguish here between transfer and interference. Similarities between two languages cause "positive transfer," such as extending the use of the pronoun in "it is raining" to the French "il pleut." Differences cause "negative transfer," generally known as "interference," such as expanding that use to Spanish and saying "el llueve" instead of "llueve." The question remained, What exactly was being transferred? Contrastive analysis, in its strong structuralist form, was refined by Robert J. Di Pietro in his book *Language Structures in*

*Contrast* and then abandoned in the late 1970s; it is only now regaining momentum in a different form.

The 1960s saw a boom of empirical studies that explored the mental processes of second-language learners. An influential article published by S. Pit Corder in 1967, entitled "The Significance of Learners' Errors," proposed that both L1 and L2 learners make errors to test certain hypotheses about the language they are learning. In the following dialogue, for example, a child tests a series of hypotheses regarding the formation of past tenses:

MOTHER: Did Billy have his egg cut up for him at breakfast?

CHILD: Yes I showed him.

MOTHER: You what?

CHILD: I showed him.

MOTHER: You showed him?

CHILD: I seed him.

MOTHER: Ah, you saw him.

CHILD: Yes, I saw him.

(167)

According to Corder, errors should be viewed not as regrettable mishaps but as necessary steps in the learning process. This approach was in opposition to the idea of language learning as presented in the contrastive-analysis hypothesis. In 1973, a milestone study by Heidi Dulay and Marina Burt showed that only 3% of the errors made by Spanish-speaking children learning English could be attributed to interference from their native language, whereas 85% were developmental errors that children learning Spanish as their native tongue also seemed to make. This study, by suggesting that not all language performance is derived from external input, suddenly changed the direction of language-learning research. Although not all researchers agreed with Dulay and Burt's findings, SLA research virtually stopped looking at transfer phenomena; rather, it started observing and systematically recording the errors made by second-language learners as they acquire grammatical structures—minimal units of sound (phonemes) and meaning (morphemes) and selected syntactic structures.

Together with Corder's study, Larry Selinker's "Interlanguage" is considered to mark the beginning of SLA research. Selinker showed that learners create their own systematic "interlanguage" through their errors. His argument, which I describe later, corroborated Daniel Slobin's findings in studies of children who were learning their native tongue. Children seemed to have not only a biological faculty to learn language but a psychological one as well. Slobin proposed that children are not born with substantive "knowledge"; instead, they have a set of procedures, or operating principles, that they follow to establish the relevance and the relative importance of the input they receive. Throughout the 1970s, scholars like Elaine Tarone, Uli Frauenfelder, and Larry Selinker (Tarone et al.), Jack C. Richards, and Evelyn Hatch attempted to demonstrate the systematic structure of a learner's interlanguage by analyzing learners' errors. Krashen's

Interlanguage

contrastive

studies of learners' natural development led him to formulate a series of hypotheses that became influential in the next decade. I return to these studies later.

By the late 1970s, then, it became clear that both interference from L1 and natural development processes are at work in the acquisition of L2 in naturalistic settings. Indeed, scholars found that learners acquire a language according to what Corder had termed "a built-in syllabus," with quite specific learning and communicating strategies. But transfer did seem to occur on various levels. The 1980s saw, in addition to continued natural-development studies, a resurgence of interest in transfer studies. The first volume to deal comprehensively with transfer phenomena in language acquisition was *Language Transfer in Language Learning*, edited by Susan M. Gass and Larry Selinker.

All SLA research since the 1970s has been characterized by a major shift in focus to the learner and the affective and cognitive processes involved in language learning. Instead of concentrating almost exclusively on the existence or absence of certain grammatical forms in learners' language, psycholinguists have turned their attention to the strategies learners use to learn the forms and to communicate intended meanings. The interest of scholars like James Cummins and Lily Wong Fillmore in the way learners match forms and meanings led researchers to investigate those factors that account for variability in acquisition among learners. Some of these factors are internal to the learner, such as general cognitive and intellectual abilities and affective states; others involve the interaction of the learners with their environment (input from teacher, peers, native speakers).

In the early years of SLA research, the language under study was mostly English, acquired in naturalistic settings. The overwhelming spread of English as an international language generated a great deal of empirical research on learners of English as a second language in the United States, Canada, and Great Britain. This research was followed by studies of the acquisition of other languages in naturalistic settings, such as in the Français langue étrangère in France and the Deutsch als Fremdsprache in Germany, two societies that had to meet the communicative needs of masses of immigrant workers.

However, learning a language in the country where that language is spoken and learning a language in a general educational setting in one's native country are two different contexts that respond to different learners' needs. Hence, interest in examining the educational and, specifically, the classroom conditions of language learning in schools has grown. Many scholars are well-known for their work on ESL classrooms: Richard Allwright and Michael P. Breen in Great Britain; Willis J. Edmondson in Germany; Herbert W. Seliger and Michael H. Long, Teresa Pica and Cathy Doughty, Craig Chaudron, and Leo van Lier in the United States. Merrill Swain and Sharon Lapkin have examined French immersion classes in Canada. Other scholars have started observing foreign language classrooms: J. P. B. Allen, Maria Fröhlich, and Nina Spada in Canada developed a communication-oriented observation scheme; Gabriele Kasper recorded teacher-induced errors in German classes in Denmark; and recent doc-

## definition of SLA

toral dissertations in the United States have observed the influence of instruction patterns and task variation on student interaction in Spanish and French classes, respectively.

### WHAT IS SECOND-LANGUAGE ACQUISITION RESEARCH?

#### Definition of the Field

According to Rod Ellis, the term *SLA research* refers to studies designed to investigate "the subconscious or conscious process by which a language other than the mother tongue is learnt in a natural or a tutored setting" (6). It covers both second-language acquisition and foreign language learning. SLA research is an interdisciplinary field. Its research methods are taken primarily from psycholinguistics, that is, the study of the relation between linguistic behavior and the psychological processes (memory, perception, attention) that underlie it. The work of Thomas G. Bever on speech perception and speech processing, George A. Miller on language and communication, Kenneth Goodman on reading, and Roy O. Freedle and John B. Carroll on language comprehension and the acquisition of knowledge have greatly influenced the way SLA studies have been conducted. SLA research now increasingly draws also on other fields, such as pragmatics, sociolinguistics, and discourse analysis, that study the way language reflects and shapes the social context in which it is used. For example, the work of M. A. K. Halliday on language as social semiotic, William Labov on the social context of language, John J. Gumperz on discourse strategies, and Teun van Dijk on discourse processes have had a strong effect on pragmatic strands of SLA research.

Two other terms are used with respect to SLA research: *applied linguistics* and *educational linguistics*. Some controversy has arisen about the scope of these two fields, but they generally refer to what Charles A. Ferguson calls "the application of the methods and results of linguistic science to the solution of practical language problems" (82). Language learning is one such problem. In contrast to theoretical linguistics, which seeks to understand the nature of language, applied linguistics contributes to a theory of first- and second-language learning as a psychological and social activity and as a subset of human behavior. SLA research, which arose out of the realization that language learning involves more than just linguistic phenomena, can thus be viewed as a subdiscipline under the larger umbrella of applied linguistics. It is emerging in the United States as the designation for all research about L2 learning.

#### Theoretical Frameworks

The common focus of all second-language research is the language learner, that is, the processes by which a learner acquires, stores, organizes, and uses knowledge of the language for successful communication. Within the short history of

English

SL classrooms

the field, researchers have investigated these processes and drawn theoretical hypotheses from four major perspectives that coexist today: linguistics, cognitive psychology, sociolinguistics, and social psychology.

The linguistic perspective, which varies according to the particular linguistic theory it relies on, focuses on the differences among languages or on universal characteristics of language and the human capacity for language learning. Contrastive analysis was intended to account for and predict L2 learner difficulties on the basis of differences in linguistic characteristics of two or more languages. In its strongest form, contrastive analysis is no longer used, but as the notion of L1 transfer has become more sophisticated and as social and cultural differences in language learning have received increased interest, contrastive-analysis research has proved valid for investigating the acquisition of sociolinguistic and pragmatic competence in a foreign language. For example, Robin C. Scarcella investigates interferences in "discourse accent"—the use of conversational features (e.g., turn taking, interrupting) from one's first language in the same way in one's second language. Shoshonna Blum-Kulka, Juliane House, and Gabriele Kasper study the way learners use speech acts inappropriately in the target language, such as saying "please" as a response to "thank you" in English. Jenny Thomas elucidates the different types of pragmatic failures made by learners of a foreign language, from using the wrong rejoinder for an intended meaning to misinterpreting the social and cultural context in which a verbal exchange is taking place.

Another linguistic approach seems promising for future research, although it is still scant on evidence. Based on the assumption that Chomsky's language-acquisition device functions in both first- and second-language acquisition, this approach attempts to find out which constraints limit the hypotheses a learner can make about specific structures of the language to be acquired. These constraints are due not only to transfers from the surface structure of the first language and to the nature of the language heard in the environment but to innate and universal linguistic principles, called universal grammar, that apply to all languages. Gass tested how learners from various first-language backgrounds formed relative clauses in English on three types of tasks: a grammaticality judgment task, a sentence-combining task, and a free-composition task. She found that, for learners of all languages, a phrase such as "the child that was hit by him" was easier to process than "the woman to whom he sent the book" or "the woman whose child went across the river," a result suggesting the existence of a universal principle of "accessibility hierarchy" in ease of acquisition. Also within a universal-grammar framework, other SLA researchers investigate how, at a deep abstract level, different languages give different values to certain aspects or parameters of universal principles. For example, Suzanne Flynn examined the particular difficulties Japanese learners of English have because of deep syntactic differences between the two languages.

A second perspective in second-language research is that of cognitive psychology. Barry McLaughlin, a major researcher of cognitive processes in language

learning, made the useful distinction between automatic and controlled processes to explain the differences between proficient and less proficient learners. According to cognitive theory, "learning a language is acquiring a complex cognitive skill" that involves "the gradual accumulation of automatized subskills and a constant restructuring of internalized representations as the learner achieves increasing degrees of mastery" (Theories 148). Learners of French first gain automatic knowledge of the forms of the *imparfait* and the *passé composé*, slowly build for themselves a representation of when to use one or the other, and then revise and restructure this representation to match the way native speakers use these tenses in speaking and writing. Claus Faerch and Gabriele Kasper distinguish between declarative knowledge, which consists of internalized rules and memorized chunks of the language, and procedural knowledge, which consists of knowing how to accumulate, automatize, and restructure the forms and their use in communication. Experimentation based on observation, introspection, and retrospection has yielded insights into the strategies and procedures used by learners. The work of Ellen Bialystok, Maria Fröhlich, and John Howard and of Elaine Tarone on communication strategies, of Rod Ellis on systematic and nonsystematic variability in interlanguage, and of J. Michael O'Malley and Anna U. Chamot on learning strategies are all important milestones in SLA research done within a psycholinguistic framework. The now classic study by N. Naiman, Maria Fröhlich, H. H. Stern, and A. Todesco on the "good language learner" has been expanded by Anita Wenden and Joan Rubin, and Lily Wong Fillmore's study of the social and cognitive strategies used by Spanish children learning English has had a far-reaching effect on cognitive approaches to SLA.

Investigation of the way learners use language for communication has also been carried out within a sociolinguistic framework, the third perspective. It studies the relation between language acquisition and its social context—in the classroom, the community, or written texts. A sociolinguistic approach has suggested that second-language acquisition is analogous to processes involved in pidginization and creolization, where people who do not share a common language develop a language with a reduced range of structures and uses, like the pidgin variety of English spoken in New Guinea. John Schumann hypothesized that pidginization is a result of the social and psychological distance between the learner and the target culture, which might account for the desire to acculturate or not and, hence, to learn the language. For example, the Heidelberger Forschungsprojekt Pidgin-German, reported on by Wolfgang Klein and Norbert Dittmar, studied the acquisition of German syntax by forty-eight Spanish and Italian immigrant workers in Germany who received no formal language instruction. It showed that the syntactic development of their interlanguage was indeed related to several factors, such as age and length of education, but the highest correlation was found between syntactic development and leisure contact with Germans, an indication that social proximity is a critical factor in successful language acquisition.

As a subset of sociolinguistics, a discourse-analysis approach to SLA, led

by Hatch, studies the speech adjustments native speakers make when they enter into verbal contact with nonnative speakers or learners. By observing this "foreigner talk" and also by watching phenomena of turn taking and conversational correction, researchers of language classrooms hope to achieve a better understanding of the interactional constraints on language acquisition, especially in classrooms. Along with the quantitative research methods more typical of sociolinguistics, classroom research has started to adopt ethnographic methods of inquiry that include case studies, diary studies, introspective and retrospective accounts, recall protocols, and long-term association of the researcher with his or her subjects.

Besides cognitive and discourse processes, SLA is interested in the affective factors that shape a learner's acquisition of a second language. A fourth perspective comes therefore from social psychology, which focuses on the influence of situational factors and individual differences on language learning. Howard C. Gardner and Wallace E. Lambert's innovative work on attitudes and motivation in language learning and Howard Giles and J. Byrne's intergroup approach to second-language acquisition have had a widespread effect on the field. H. Douglas Brown is well-known for his work on affective variables. Additional studies such as those of David R. Krathwohl, Benjamin Bloom, and Bertram B. Masia on the affective domain, Leslie M. Beebe on risk taking, and Kathleen Bailey on competitiveness and anxiety in language learning are examples of the large body of research devoted to personality factors in language acquisition.

The four theoretical perspectives sketched above testify to the disciplinary diversity of SLA. Guided by hypotheses based on linguistic, cognitive, sociolinguistic, and social psychological theory, it looks at data from actual learner performance and attempts to build models of language learning that can both explain and predict successful performance. I turn now to a few empirical studies and some of the models proposed.

### Empirical Studies

Taking as their point of departure raw data collected or elicited from learners in natural or instructional settings, SLA studies examine the performance of several learners at a single point in time (cross-sectional studies) or of one learner over a period of time (longitudinal studies). These observations are then screened for consistencies and variations and interpreted.

Selinker's interlanguage study, which is based on evidence collected by other researchers from learners in natural and instructional settings, posited that language learning proceeds in a series of transitional stages, as learners acquire more knowledge of the L2. At each stage, they are in control of a language system that is equivalent to neither the L1 nor the L2—an interlanguage. Selinker suggests that five principal processes operate in interlanguage: (1) language transfer, such as German time-place order after the verb in the English interlanguage of German speakers; (2) overgeneralization of target-language

interlanguage

rules, such as in the sentence "What did he intended to say?"; (3) transfer of training, such as the confusion of *he* and *she* because of the overuse of *he* in textbooks and drills; (4) strategies of L2 learning, such as the simplification in "Don't worry, I'm hearing him"; (5) strategies of L2 communication, such as the avoidance of grammatical form to fulfill the more pressing needs of communication in "I was in Frankfurt when I fill application."

Selinker's study has triggered many debates about what this interlanguage is. First, identifying the errors made in the learner's interlanguage is difficult. For example, is "I fill application" an error of pronunciation, morphology (lack of awareness of the past tense), or syntax (lack of awareness of concordance of tenses)? a learning or a communication strategy? Furthermore, linguists disagree about what constitutes the initial state of a learner's interlanguage. From a cognitive perspective, second-language learners do not start with a clean slate: they already have, from their first language, a range of cognitive and communicative abilities that enable them to understand structures they have never encountered. As sociolinguists point out, the concept of the L2 native speaker is an ideal or standard construct that has no social reality. Even native speakers are not equally proficient on topics they don't know, in social settings they are unfamiliar with, and in speech genres they have not been educated in.

The question is, then, Is interlanguage a unitary construct, or do learners have various competencies at various times for various tasks in various situations? Further questions under discussion are, Can interlanguage become fossilized at some intermediary stage, or does it remain amenable to change, and under what conditions does change occur?

To answer some of these questions, SLA research has conducted descriptive studies around three general questions: What does it mean to know a language? What are the processes involved in learning a language? What learning conditions favor or impede language acquisition? These studies are all predicated on the view that learning a language means not only learning forms and structures but learning how to use these forms accurately and appropriately in various social settings.

What does it mean to know a language? Michael P. Breen and Christopher N. Candlin have argued that knowing a foreign language means having the ability to express, interpret, and negotiate intended meanings, a definition that goes far beyond using the right grammatical rule or the right item of vocabulary. Others have attempted to define the various components of communicative competence. For example, studies by Michael Canale and by Canale and Swain have identified four distinct aspects that do not automatically overlap: grammatical competence, or the ability to understand and produce grammatically correct sentences; discourse competence, or the ability to connect sentences in stretches of discourse and to form a meaningful whole out of a series of utterances; sociolinguistic competence, or the ability to conform to socially and culturally appropriate norms of verbal behavior; and strategic competence, which enables

4 kinds of competence

the learner to function in a way that compensates for deficiencies in the other three competencies.

What are the processes involved in learning a language? We have seen that a large body of work is devoted to the strategies learners employ to comprehend and produce spoken language (see Faerch and Kasper; Fillmore, Kempler, and Wang). An equally large body of research focuses on reading in a second language. Building on the work of psychologists and cognitive scientists like Walter Kintsch, and Richard C. Anderson and David A. Ausubel, SLA researchers have shown how second-language readers use information-processing strategies to create meaning out of the words on the page. They develop and activate cognitive schemata, or mental representations, that allow them to anticipate incoming information and link it to other representations they might already have. Forming these schemata is more complex than deciphering the surface form of the words is. Once they have acquired an automatic recognition of the forms, second-language readers need to restructure their schemata to fit the newly emerging meanings. Patricia L. Carrell's and Margaret Steffensen's studies of learners of English as a second language, Elizabeth Bernhardt's and Janet Swaffar's studies of learners of German, and James Lee's study of learners of Spanish in the United States have shown how misrepresentations can occur if learners do not reorganize their initial schemata or if they cannot develop the culturally relevant schemata. For instance, American college students misread a German text about the "death of forests" (*Waldsterben*) as a text about the "end of the world" (*Weltsterben*), and North American readers adequately decoded but culturally misconstrued an English account of an Indian wedding.

What learning conditions favor or impede language acquisition? Many studies examine the learners themselves and the influence of age, intelligence, aptitude, motivation, and personality. With respect to age, Eric H. Lenneberg's 1967 study introduced the idea that during a certain critical period language acquisition takes place naturally and effortlessly. With the onset of puberty, it was claimed, the plasticity of the brain begins to disappear and lateralization of the language function in the left hemisphere of the brain is completed. Thus adults have greater difficulty learning languages. The critical-period hypothesis has been seriously called into question in recent years. Although children are quicker than adolescents to acquire those linguistic skills necessary for rapid socialization and integration into the target group (including nativelylike pronunciation), adolescents, who have greater cognitive skills, outperform children in grammatical and lexical accuracy. Adults, too, have greater cognitive abilities that help them acquire primary levels of language proficiency more rapidly than children do. Researchers like Seliger have therefore suggested multiple critical periods ("Implication"). For example, there may be one critical period for the acquisition of nativelylike pronunciation and another for the acquisition of grammar.

One of the best-known studies of motivation in second-language learning was carried out by Gardner and Lambert, who over a period of twelve years studied foreign language learners in Canada, the United States, and the Philip-

pinas in an attempt to determine how attitudinal and motivational factors affect language-learning success. They distinguished two kinds of motivation: instrumental and integrative. Instrumental motivation is motivation to attain instrumental goals, such as furthering a career, reading technical material, or going to the target country; integrative motivation is motivation to integrate oneself within the culture of the second-language group and to be part of that society. Gardner and Lambert found that integrative motivation generally accompanied higher scores on proficiency tests in a foreign language.

Besides exploring learner-dependent conditions of acquisition, SLA scholars have also investigated the effects of the learning environment itself. Interaction between children and caretakers seems to play an important role in L1 acquisition. For example, the discourse "scaffolding" provided by adults in their conversations with children (Child: "Hiding." Adult: "Hiding? What's hiding?" Child: "Balloon hiding.") might help these children acquire the syntactic structures of full grammatical sentences in their first language. In a similar manner, as Seliger ("Practice") and Long ("Native Speaker") have argued, interaction with other speakers of the language seems to play a crucial role in the acquisition of syntactic and lexical structures by L2 learners, by providing them with what Krashen calls "comprehensible input" and the opportunity to negotiate the meaning of that input (Second Language).

In the past, language researchers have tried to study ways in which classroom instruction and other learning environments can be manipulated for more efficient language acquisition. Until the 1970s, attempts were made to establish the relative merits of one pedagogical "method" over another (e.g., grammar-translation vs. audiolingual vs. communicative). However, as Janet Swaffar, Katherine Arens, and Martha Morgan demonstrated in an influential study in 1982, such comparisons proved futile. Too many uncontrollable variables made it impossible to separate a given method from the personal variations introduced by the teacher and a given group of learners. Furthermore, these comparisons were interested only in the linguistic product, not in the learner's underlying processes of acquisition. By contrast, recent studies, under the rubric "classroom research," look at small pieces of the SLA picture. Pica, for example, classifies the types of corrections or repairs made in language classrooms; she also investigates the types of tasks given to the learners and the appropriateness of those tasks in fostering communicative goals. Susan M. Gass and Evangeline M. Varonis examine gender differences in the way classroom discourse is managed; Long looks at modifications in teacher talk ("Questions").

### Model Building

Several of the studies mentioned above have generated models or hypotheses that are the object of heated debates. One of these is Krashen's monitor model, which is based on data from untutored and tutored second-language acquisition. Proposed for the first time in 1977 and developed subsequently in 1981 and

Classroom  
research

1982, the model offers a prime example of the lively controversies that dominate the field at the present time (see Krashen's "Monitor Model"; *Principles; Second Language*). From his and others' studies of the modifications that parents and caretakers make when talking to young children, Krashen made three observations: (1) Caretakers talk in a simplified manner to make themselves understood. (2) Their input is only roughly tuned to the children's linguistic knowledge, containing many structures the children already know but also some not yet acquired. (3) Their speech refers to the here and now of the immediate environment.

With these observations from a limited sample, Krashen posited his two widely debated hypotheses. In the first, the "acquisition-learning hypothesis," learners are said to make use of two different kinds of linguistic knowledge: explicit or learned knowledge (with conscious application of learned rules) and implicit or acquired knowledge (with unconscious application of use patterns learners have "picked up," so to speak). According to Krashen, learning and acquisition are two distinct, nonoverlapping systems of knowledge. Learning is achieved through the monitor, the device that learners use to oversee their language performance and edit it in accordance with the formal rules of the language. However, since Krashen views acquisition, not learning, as the primary process for the development of communicative competence, the value of formal language instruction is called into question by his model.

The second hypothesis is the "input hypothesis." Learners are said to learn the language automatically when they are exposed to comprehensible input containing linguistic structures that are just beyond their present level of mastery and when they don't feel threatened by the learning environment, that is, when their "affective filter" is down. Both hypotheses have had widespread repercussions among researchers and teachers alike. They have triggered a large body of research related to the nature of the input, the concept of comprehensibility, and the factors that contribute to making this input comprehensible.

Despite the popularity of Krashen's model and its marked effect on language teaching methodology in the United States, many researchers feel that it is inaccurate. In 1978, McLaughlin and Bialystok, both noted for their work on cognitive processes in language learning, were the first to refute Krashen's model. McLaughlin, who was trained as a psychologist, rephrased Krashen's conscious versus unconscious dichotomy into a more accurate description of controlled versus automatic processes in language learning (see his "Monitor Model"). He argued later that second-language learning involves "the gradual integration of subskills [that] as controlled processes initially dominate and then become automatic" (*Theories* 139). McLaughlin suggests that the distinction between consciousness and unconsciousness is located on a continuum.

Opposing Krashen's learning and acquisition model, Bialystok, a trained linguist, offered a distinction between explicit and implicit linguistic knowledge (see her "Theoretical Model"). In the explicit category are the facts a person knows about language and the ability to articulate those facts. Implicit knowledge

is information that is automatically and spontaneously used in language tasks. Both types of knowledge exist on a continuum, and they are linked to each other by connecting inferencing processes. McLaughlin and Bialystok each argued that the cognitive processes involved in second-language acquisition are much more complex than Krashen would like us to believe.

Since the 1970s, the monitor model has continued to provoke discussion. Long, who has done extensive research on interaction in ESL classrooms, insists that "instruction makes a difference" and that learned knowledge can indeed become acquired knowledge. Swain, known for her studies of French immersion programs in Canada, argues not that input is comprehensible per se but that it is made comprehensible through communicative interaction and is thus linked to "comprehensible output." Applying these findings to classroom practice, Wilga M. Rivers calls comprehension and production the "interactive duo" (see "Comprehension"). She maintains that to acquire a language, learners need to produce it actively, not just be exposed to it. For the time being, the usefulness of Krashen's hypotheses may lie less in their ability to predict language acquisition than in the metaphorical framework they provide for conceptualizing language-learning processes.

Other scholars have attempted to build models of language acquisition from empirical data. Whereas the monitor model hardly accounts for language-learner variability in language learning, Schumann's acculturation model or pidginization hypothesis tries to explain the variations introduced by affective and social factors. From data collected through diary studies, questionnaires, and interviews with learners, in particular from one adult Spanish speaker's acquisition of English in the United States, Schumann claims that similar psychosocial processes underlie both the formation of pidgins and spontaneous second-language acquisition. His Hispanic subject in the United States, Alberto, who was exposed to a high degree of social distance from English speakers, failed to progress very far in learning English. Alberto's English was characterized by many of the forms observed in pidgins, such as "no + verb" negatives, uninverted interrogatives, and the absence of possessive and plural inflections. Early language learners and immigrant workers, who have to acquire the dominant language for special purposes, develop a simplified variety of language called pidgin, which both satisfies their communicative needs and reflects their social and cultural distance vis-à-vis the target culture.

Set within a sociopsychological framework, Giles and Byrne's accommodation model of language learning shares certain premises with Schumann's acculturation model, but for Giles and Byrne what affects second-language acquisition is not the actual social distance between the learner's social group and the target-language community but the group members' perception of this distance and their definition of themselves and others. This model, like Schumann's, illustrates attempts by SLA researchers to explain individual variance in learners through motivation, societal context, and the learners' objectives in that context. Neither the acculturation nor the accommodation model alone explains how envi-



ronmental and learner-internal processes interact and how they affect the rate and success of second-language acquisition. Several other models of language acquisition have been proposed, in particular by Ellis and McLaughlin (*Theories*).

The developments in SLA research reveal a great diversity of approaches and research tools that, in turn, reflects the variety of issues under study. In addition to questions common to first- and second-language acquisition research, such as competence versus performance and conscious versus unconscious learning, issues in second-language learning include the effects of learner personality and experience and all the variational factors of context and social interaction. To date, no comprehensive theory captures all the various contexts of occurrence, products, and processes involved in second-language acquisition. Indeed, some researchers believe, with Charles A. Ferguson and Thomas Huebner, that it is not even advisable to strive for such a theory at the present time, since it could potentially trivialize the field with a single paradigmatic view.

For the moment, the various models and hypotheses are useful as research heuristics, and the cross-disciplinary debates they engender are healthy and intellectually fruitful. The effect of SLA research on language instruction has to be sought not so much for the direct clues it gives teachers about what and how to teach but, rather, for the understanding it gives them about the enormous complexity of second-language acquisition processes. As Patsy M. Lightbown remarks, "Language acquisition research can offer no formulas, no recipes, but it is an essential component of teacher education, because it can give teachers appropriate expectations for themselves and their students" (183). In conclusion, I briefly discuss some of these expectations.

### PRACTICAL IMPLICATIONS FOR LANGUAGE TEACHING AND LEARNING

SLA research has considerably changed our thinking about the way people learn to listen, speak, read, and write in a second language. Three major goals for language teachers have emerged from SLA research: focus on the learner, emphasize learning processes and communication strategies, and provide interaction with the social context.

When the communicative revolution in language teaching started in Europe in the early 1970s, it was based on an analysis of learners' needs and purposes and the threshold of competence deemed necessary for speakers to function within the European community. Since then, research in this country has shed some light on what learners can and cannot be expected to do at various levels of competence. For example, Corder's and Selinker's work on learners' errors make teachers realize how futile it can be to correct every single error on the spot and to attempt to prevent the learners from making errors at all cost. Since making errors is evidence that the learner is hypothesizing and testing the system, a more flexible pedagogy is called for, one that encourages risk taking and

experimentation with the language according to the communicative demands of the moment. This idea doesn't mean that errors should never be corrected. Teachers who choose not to rephrase a student's utterance in a correct manner but to let the error pass uncorrected, focusing on the message rather than on the form, can still keep their ears attuned to patterns of errors and then deal with them globally at a later time. ✓

Even within the various levels of proficiency established in the guidelines issued by the American Council on the Teaching of Foreign Languages, teachers should expect great variability among learners. Students differ not only in what they have been taught but in their types and degrees of literacy, motivation, and anxiety, their age, and their relation to the speech community whose language they are learning. Focusing on the learner rather than on the textbook or the method means that the teacher finds out the individual differences among learners, such as the students' different interests or learning styles, and consciously varies the activities to match—with some activities reflecting a more analytic, deductive approach and some a more analogic, inductive way of learning. Studies by Kathleen Bailey and Leslie M. Beebe show that learner anxiety has many sources: the fear of getting a bad grade, of not saying what you mean, of understanding the words but not the intentions, of having to speak in front of twenty other students, of not only entering a new culture but having to help the teacher run the lesson as smoothly as possible. These studies help teachers confront their own fears as they try to deal with those of their students.

By emphasizing learning processes over linguistic products, SLA research makes teachers aware of the procedures by which learners organize knowledge and generate meaning from the forms they learn: how learners compare and contrast the new information with their existing cognitive schemata, how they build and test hypotheses, how they construct their own interlanguage to fit their immediate and long-term communicative needs. The work of McLaughlin can help teachers realize how much "cognitive restructuring" goes on in the minds of their students, and it can temper teachers' surprise if the output students produce on tests doesn't always correspond to the input they were given. In fact, the teacher's task is to give students the opportunity to rephrase, restructure, and reorganize the content and the form of dialogues and readings. Thus, comprehension questions that merely require students to lift the right responses from a text do nothing to help them restructure, or make sense of, the text. Instead, brainstorming techniques and advance organizers are among the many reading strategies that have been suggested in recent years, for example by Swaffar, to help students learn.

Recent research on communication strategies has direct applications for the teaching of speaking and reading. Learners can no longer expect to understand and be understood by others in conversation on the basis of their knowledge of grammar and vocabulary alone. Conversation has its social rules without which rules of grammar would be useless, and these rules are often different in the foreign language; they have to be observed and learned. In the same manner,

learners should not be disappointed if they understand all the words on the page yet still don't know what the text is about. Meaning is a matter not of decoding signs but of establishing connections, making inferences, drawing conclusions, and constructing the appropriate schemata.

The work by Canale and Swain on communicative competence should make teachers aware of the importance of strategic competence in both speaking and reading. Communication strategies can and should be taught explicitly during classroom activities: how to interrupt another speaker, how to switch topics during group work, how to begin a conversation when acting out the dialogue, how to end the conversation. These and other tactics are the social glue of face-to-face encounters that speakers need to conduct conversations and develop fluency in the language.

Recognizing the importance of the social context of communication means that learners are encouraged to view language learning not only as the acquisition of a body of factual knowledge that can be displayed on a test but as an interactional process in which learning the forms and using them in communication are inseparable. SLA research shows that this interaction is central to the learning process: interaction of learners with peers, teachers, native speakers, and written texts. Fillmore's work on differences among learners can inspire teachers to pass on to their students some of the social and cognitive strategies successful learners use: "Join a group and act as if you understand what's going on, even if you don't; get some expressions you understand, and start talking; make the most of what you've got; work on big things first, save the details for later" (209). Teaching language as social interaction calls for a diversification of classroom formats, such as group and pair work, to maximize opportunities for interactions of various kinds. It also calls for an increased use of "authentic" materials, whose social meaning lies beyond the illustration of grammatical rules.

Finally, as the pragmatics strand of SLA research has shown, culture is inscribed in the very discourse that learners acquire. Teachers and learners must recognize that no language is innocent and that, along with the language, they teach and are taught a style of interaction and of knowledge presentation that characterizes the culture of a given speech community or educational institution. A critical view of language in discourse should help learners understand the links not only between the language and the culture they are learning but also between their own language and culture.<sup>1</sup>

#### SUGGESTIONS FOR FURTHER READING

For detailed studies of some of the key issues under investigation in SLA, the most useful edited volumes are those by Susan M. Gass and Carolyn G. Madden, *Input in Second Language Acquisition*; Gass and Larry Selinker, *Language Transfer in Language Learning*; and Gass, Madden, Dennis Preston, and Selinker, *Variation in Second Language Acquisition*. Two excellent reviews of the work done in SLA

research can be found in Rod Ellis, *Understanding Second Language Acquisition*, and Leslie M. Beebe, *Issues in Second Language Acquisition*, as well as in influential articles by Michael H. Long, Patsy M. Lightbown, and Charles A. Ferguson and Thomas Huebner. Kenji Hakuta, *Mirror of Language: The Debate on Bilingualism*, gives a well-balanced and dispassionate state-of-the-art review of research on that hotly debated topic. Classics in the general field of applied linguistics include two books by British linguists, S. Pit Corder and J. P. B. Allen, *The Edinburgh Course in Applied Linguistics*, and Henry G. Widdowson, *Explorations in Applied Linguistics*.

To get a broader outlook on the issues of language learning and teaching, prospective scholars will find it extremely useful to read Jerome Bruner, *Actual Minds, Possible Worlds*; James Wertsch, *Culture, Communication and Cognition*; John J. Gumperz, *Discourse Strategies*; Shirley Brice Heath, *Ways with Words*; and Dell Hymes, "On Communicative Competence," as well as any of the numerous volumes in the series *Advances in Discourse Processes* (ed. Roy O. Freedle) that offer an interdisciplinary perspective on all aspects of language learning and use.

H. H. Stern's *Fundamental Concepts of Language Teaching* is the standard reference work for all foreign language teachers, along with Wilga M. Rivers, *Teaching Foreign Language Skills*; Sandra Savignon, *Communicative Competence: Theory and Classroom Practice*; and H. Douglas Brown, *Principles of Language Learning and Teaching*. The United States proficiency orientation in language teaching is best illustrated in Alice Omaggio, *Teaching Language in Context*.

There are five major journals: *TESOL Quarterly* and *Modern Language Journal* contain an easily readable mix of empirical research and pedagogic articles; *Applied Linguistics*, *Studies in Second Language Acquisition*, and *Language Learning* contain more difficult theoretical and empirical studies.

Of professional interest are the *Proficiency Guidelines*, published by the American Council for the Teaching of Foreign Languages (ACTFL); Helen Kornblum's *Directory of Professional Preparation Programs in TESOL in the United States*, and the publications of the Center for Applied Linguistics in Washington, D.C.

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