CHAPTER

3 The linguistics of Second Language Acquisition

CHAPTER PREVIEW

KEY TERMS

Interference
Interlanguage (IL)
Natural order
Universal Grammar (UG)
Language faculty
Principles
Parameters
Initial state
Final state
Markedness
Grammaticalization

In this chapter we survey several approaches to the study of SLA that have been heavily influenced by the field of linguistics since the middle of the twentieth century. We begin with a characterization of the nature of language, and with a consideration of the knowledge and skills which people must have in order to use any language fluently. We follow this with a survey of early linguistic approaches to SLA, beginning with **Contrastive Analysis** and then several which take an **internal focus** on learners' **creative construction** of language: **Error Analysis, Interlanguage, Morpheme Order Studies,** and the **Monitor Model.** We bring the internal focus up to date with discussion of **Universal Grammar (UG),** and what constitutes the **language faculty** of the mind. Finally, to complete the chapter, we switch to approaches which involve an **external focus** on the functions of language that emerge in the course of second language acquisition: **Systemic Linguistics, Functional Typology, Function-to-Form Mapping, and Information Organization.**

The Nature of language

What is it that we learn when we learn a language? If we look up a definition of "language" in a dictionary, we will probably see reference to its verbal features (oral and written), to its function in communication, and to its uniquely human character. Most linguists would agree that all naturally occurring languages also share the following characteristics:

- Languages are systematic. They consist of recurrent elements which occur in regular patterns of relationships. All languages have an infinite number of possible sentences, and the vast majority of all sentences which are used have not been memorized. They are created according to rules or principles which speakers are usually unconscious of using – or even of knowing – if they acquired the language(s) as a young child. Although we use the same stock of words over and over, it is safe to assume that, for instance, most of the particular combinations of words making up the sentences in a daily newspaper have never been used before. How, then, do we understand them? We can do so because we understand the principles by which the words are combined to express meaning. Even the sounds we produce in speaking, and the orders in which they occur, are systematically organized in ways that we are totally unaware of.
- Languages are symbolic. Sequences of sounds or letters do not inherently possess meaning. The meanings of symbols in a language come through the tacit agreement of a group of speakers. For example, there is no resemblance between the four-legged animal that eats hay and the spoken symbol [*hors*] or the written symbol *horse* which we use to represent it in English. English speakers agree that the hay-eating animal will be called a *horse*, Spanish speakers *caballo*, German *Pferd*, Chinese *ma*, and Turkish *at*.
- Languages are social. Each language reflects the social requirements of the society that uses it, and there is no standard for judging whether one language is more effective for communication than another, other than to estimate the success its users may have in achieving the social tasks that are demanded of them. Although the capacity for first language acquisition is inherent in the neurological makeup of every individual, no one can develop that potential without interaction with others in the society he or she grows up in. We use language to communicate, to categorize and catalogue the objects, events, and processes of human experience. We might well define language at least in part as "the expressive dimension of culture." It follows that people who function in more than one cultural context will communicate more effectively if they know more than one language.

Linguists traditionally divide a language into different levels for description and analysis, even though in actual use all levels must interact and function simultaneously. The human accomplishment of learning

language(s) seems all the more remarkable when we consider even a simplified list of the areas of knowledge which every L1 or L2 learner must acquire at these different levels:

- lexicon (vocabulary)
  - word meaning
  - pronunciation (and spelling for written languages)
  - grammatical category (part of speech)
  - possible occurrence in combination with other words and in idioms
- phonology (sound system)
  - speech sounds that make a difference in meaning (phonemes)
  - possible sequences of consonants and vowels (syllable structure)
  - intonation patterns (stress, pitch, and duration), and perhaps tone in words
  - rhythmic patterns (pauses and stops)
- morphology (word structure)
  - parts of words that have meaning (morphemes)
  - inflections that carry grammatical information (like number or tense)
  - prefixes and suffixes that may be added to change the meaning of words or their grammatical category
- syntax (grammar)
  - word order
  - agreement between sentence elements (as number agreement between subject and verb)
  - ways to form questions, to negate assertions, and to focus or structure information within sentences
- discourse
  - ways to connect sentences, and to organize information across sentence boundaries
  - structures for telling stories, engaging in conversations, etc.
  - scripts for interacting and for events

All of this knowledge about language is automatically available to children for their L1 and is somehow usually acquired with no conscious effort. Completely comparable knowledge of L2 is seldom achieved, even though much time and effort may be expended on learning. Still, the widespread occurrence in the world of high levels of multilingual competence attests to the potential power and effectiveness of mechanisms for SLA. Explaining what these mechanisms are has been a major objective in the study of SLA from a variety of linguistic perspectives.

Early approaches to SLA

We begin our survey of early approaches with Contrastive Analysis (CA), which predates the establishment in the 1960s of SLA as a field of systematic study. This is an important starting point because aspects of CA

procedures are still incorporated in more recent approaches, and because CA introduced a continuing major theme of SLA research: the influence of L1 on L2. The revolution in linguistic theory introduced by Noam Chomsky (1957) redirected much of SLA study to an internal focus, which is manifested in the other early (i.e. predating 1980) approaches included in this section.

Contrastive Analysis

Contrastive Analysis (CA) is an approach to the study of SLA which involves predicting and explaining learner problems based on a comparison of L1 and L2 to determine similarities and differences. It was heavily influenced by theories which were dominant in linguistics and psychology within the USA through the 1940s and 1950s, Structuralism and Behaviorism. The goal of CA (as that of still earlier theories of L2 learning) was primarily pedagogical in nature: to increase efficiency in L2 teaching and testing. Robert Lado states this clearly in his introduction to *Linguistics Across Cultures* (1957), a book which became a classic guide to this approach:

> The plan of the book rests on the assumption 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 culture to be learned with the native language and culture of the student. In our view, the preparation of up-to-date pedagogical and experimental materials must be based on this kind of comparison. (vii)

Following notions in structuralist linguistics, the focus of CA is on the surface forms of both L1 and L2 systems, and on describing and comparing

Robert Lado (b. Tampa, Florida) 1915–1995

Linguistics

Robert Lado's pioneering work on contrastive analysis, *Linguistics Across Cultures*, was published in 1957. Lado was an exemplary applied linguist, seeking to discover the problems that foreign language students would encounter in the learning process. On the faculty of Georgetown University from 1960–80, he was the first dean of the School of Languages and Linguistics there from 1961 to 1973. Altogether, he wrote more than 100 articles and 60 books on language and linguistics.

Interesting note: Though born in the United States, Robert Lado was the son of Spanish immigrants and grew up in Spain. He returned to the United States as an adult to attend college, and studied with Charles Fries at the University of Michigan.

the languages one level at a time – generally contrasting the phonology of L1 and L2 first, then morphology, then syntax, with the lexicon receiving relatively little attention, and discourse still less. A "bottom-up" priority for analysis (generally from smaller to larger units) is also expressed as a priority for language learning, of structures before meaning. Charles Fries, who was a leading figure in applying structural linguistics to L2 teaching, makes this priority very clear: "In learning a new language, . . . the chief problem is not at first that of learning vocabulary items. It is, first, the mastery of the sound system. . . . It is, second, the mastery of the features of arrangement that constitute the structure of the language" (Fries 1945:3).

Following notions in behaviorist psychology, early proponents of CA assumed that language acquisition essentially involves habit formation in a process of Stimulus – Response – Reinforcement (S-R-R). Learners respond to the stimulus (linguistic input), and reinforcement strengthens (i.e. habituates) the response; they imitate and repeat the language that they hear, and when they are reinforced for that response, learning occurs. The implication is that "practice makes perfect."

Another assumption of this theory is that there will be transfer in learning: in the case of SLA, this means the transfer of elements acquired (or habituated) in L1 to the target L2. The transfer is called positive (or facilitating) when the same structure is appropriate in both languages, as in the transfer of a Spanish plural morpheme *-s* on nouns to English (e.g. *lenguajes* to *languages*). The transfer is called negative (or interference) when the L1 structure is used inappropriately in the L2, as in the additional transfer of Spanish plural *-s* to a modifier in number agreement with the noun: e.g. *lenguajes modernas* to *Moderns Languages* (a translation which was printed at the top of a letter that I received from South America), or *greens beans* (for 'green beans,' which I saw posted as a vegetable option in a US cafeteria near the Mexican border).

The process of CA involves describing L1 and L2 at each level, analyzing roughly comparable segments of the languages for elements which are likely to cause problems for learners. This information provides a rationale for constructing language lessons that focus on structures which are predicted to most need attention and practice, and for sequencing the L2 structures in order of difficulty.

To summarize Lado's (1957) position: the easiest L2 structures (and presumably first acquired) are those which exist in L1 with the same form, meaning, and distribution and are thus available for positive transfer; any structure in L2 which has a form not occurring in L1 needs to be learned, but this is not likely to be very difficult if it has the same meaning and distribution as an "equivalent" in L1; among the most difficult are structures where there is partial overlap but not equivalence in form, meaning, and/or distribution, and these are most likely to cause interference. Lado gives examples in Spanish and English for some of the types of contrasts he describes, which I include in the accompanying box. I have ordered them from least to most probable difficulty for speakers of one of these languages learning the other.

Types of Interference

Same form and meaning, different distribution

Spanish: *la paloma blanca* 'the dove white'; *las palomas blancas* 'the (pl) doves whites'
English: *the white dove; the white doves*

The form *-s* and the meaning "plural" are the same in both languages, but the distribution of occurrence is different. Spanish attaches the *-s* to articles, modifiers, and nouns, but English attaches it only to nouns. This is the same contrast which was illustrated in the earlier examples of *Moderns Languages* and *greens beans*. (The difference in word order is a contrast in form at another level of analysis.)

Same meaning, different form

Spanish: *iré* '(I) will go'
English: *I will go*

The meaning "future" is expressed by different grammatical elements in the two languages. In Spanish it is conveyed by the future tense suffix *-é* added to the infinitive form of the verb *ir* 'to go,' while it is conveyed by the auxiliary verb *will* in English. (The first person subject is another contrast in form, also conveyed by the Spanish suffix *-é* while the overt pronoun *I* is required in English.)

Same meaning, different form and distribution

Spanish: *agua* 'water'
English: *water*

The English word *water* may occur as a noun in *a glass of water*, as a verb in *water the garden*, and as a modifier noun in the compound *water meter*. The Spanish word *agua* may occur only as a noun unless its form is changed: i.e. its distribution is more limited than that of the equivalent in English.

Different form, partial overlap in meaning

Spanish: *pierna* 'leg of humans'; *pata* 'leg of animals or furniture'; *etapa* 'leg of a race or trip'
English: *leg*

The scope of meaning for the English word *leg* covers the scope of three different words in Spanish; no single equivalent term can be used in both languages.

Similar form, different meaning

Spanish: *asistir* 'to attend'
English: *assist*

Similar words like these are sometimes called "false friends," and are predicted to cause great difficulty for speakers of one language learning the other. Since the words look and sound so much alike, L2 learners are likely to assume that they also share meaning.

While CA highlighted potential learning problems, behaviorist learning theory attributed variable success by L2 learners in part to the nature of the relationship between L1 and L2 (and thus to the potential for negative versus positive transfer), but most importantly to circumstances of learning which promote poor versus good habit formation. Fries related L2 accuracy in English to the priorities he set for learning: "one can achieve mere fluency in a foreign language too soon . . . Such students, with fluency in vocabulary but with no basic control of either the sound system or the structure, are almost without exception hopeless so far as ever achieving a satisfactory control of English is concerned" (1945:3).

The CA approach of the 1940s to 1960s was not adequate for the study of SLA in part because the behaviorist learning theory to which it is tied cannot explain the logical problem of language learning that was addressed in Chapter 2 (how learners know more than they have heard or have been taught). Another problem was that CA analyses were not always validated by evidence from actual learner errors. Many of the L2 problems which CA predicts do not emerge; CA does not account for many learner errors; and much predicted positive transfer does not materialize. A major limitation in application to teaching has been that instructional materials produced according to this approach are language-specific and unsuitable for use with speakers of different native languages. Still, CA stimulated the preparation of hundreds of comparative grammars (including many unpublished masters theses and doctoral dissertations at universities around the world), and its analytic procedures have been usefully applied to descriptive studies and to translation, including computer translation. Further, there has been a more recent revival and revision of CA procedures, including contrasts of languages at more abstract levels, and extension of the scope of analysis to domains of cross-cultural communication and rhetoric.

Error Analysis

Error Analysis (EA) is the first approach to the study of SLA which includes an internal focus on learners' creative ability to construct language. It is based on the description and analysis of actual learner errors in L2, rather than on idealized linguistic structures attributed to native speakers of L1 and L2 (as in CA). EA largely augmented or replaced CA by the early 1970s because of the following developments:

- Predictions made by CA did not always materialize in actual learner errors, as noted above. More importantly, perhaps, many real learner errors could not be attributed to transfer from L1 to L2.
- As linguistic theory changed, the exclusive focus on surface-level forms and patterns by structural linguists shifted to concern for underlying rules.
- The behaviorist assumption that habit formation accounts for language acquisition was seriously questioned by many linguists and psychologists. There was a shift to Mentalism in explanations of

language acquisition, with emphasis on the innate capacity of the language learner rather than on external influences.

- The study of SLA was no longer motivated as strongly by teaching concerns as it had been for CA. L2 learning came to be thought of as independent of L2 teaching to some extent, and researchers began to separate issues in SLA from pedagogical concerns. Learning processes became an important focus for study in their own right.

The shift in primary focus from surface forms and patterns to underlying rules, and the parallel shift in efforts to explain acquisition from Behaviorism to Mentalism, are attributable in large part to the revolution in linguistics which resulted from Noam Chomsky's introduction of Transformational-Generative (TG) Grammar (1957, 1965). Chomsky claimed that languages have only a relatively small number of essential rules which account for their basic sentence structures, plus a limited set of transformational rules which allow these basic sentences to be modified (by deletions, additions, substitutions, and changes in word order). The finite number of basic rules and transformations in any language accounts for an infinite number of possible grammatical utterances. (Note that these "rules" merely describe what native speakers say, not what someone thinks they *should* say.) "Knowing" a language was seen as a matter of knowing these rules rather than memorizing surface structures. Since speakers of a language can understand and produce millions of sentences they have never heard before, they cannot merely be imitating what they have heard others say, but must be applying these underlying rules to create novel constructions. Language thus came to be understood as rule-governed behavior.

Under this influence from linguistics and related developments in psychology, the study of first language acquisition adopted notions that inner forces (interacting with the environment) drive learning, and that the child is an active and *creative* participant in the process rather than a passive recipient of language "stimuli." Structures of child language production began to be described and analyzed as grammatical systems in their own right rather than in terms of how they are "deficient" in comparison to adult norms (Miller 1964; McNeil 1966). Similar notions began to be applied to the study of second language learning at about the same time, in part to address the issue of how L1 and L2 acquisition processes might be the same or different.

The most influential publication launching Error Analysis as an approach in SLA was S. Pit Corder's (1967) article on "The significance of learners' errors," which calls on applied linguists to focus on L2 learners' errors not as "bad habits" to be eradicated, but as sources of insight into the learning processes. Corder claimed that errors provide evidence of the system of language which a learner is using at any particular point in the course of L2 development, and of the strategies or procedures the learner is using in his "discovery of the language." In a sense, errors are windows

into the language learner's mind. In this approach, learner language is viewed as a target of analysis which is potentially independent of L1 or L2, and the state of learner knowledge is seen as transitional competence on the path of SLA. Further, Corder claimed that the making of errors is significant because it is part of the learning process itself: "a way the learner has of testing his hypothesis about the nature of the language he is learning." This includes testing whether aspects of existing L1 knowledge can be used in the L2. Errors are thus a sign that the learner is (perhaps unconsciously) exploring the new system rather than just experiencing "interference" from old habits.

The procedure for analyzing learner errors includes the following steps (Ellis 1994):

- Collection of a sample of learner language. Most samples of learner language which have been used in EA include data collected from many speakers who are responding to the same kind of task or test (as in Morpheme Order Studies, which are discussed below). Some studies use samples from a few learners that are collected over a period of weeks, months, or even years in order to determine patterns of change in error occurrence with increasing L2 exposure and proficiency.
- Identification of errors. This first step in the analysis requires determination of elements in the sample of learner language which deviate from the target L2 in some way. Corder (1967) distinguishes between systematic errors (which result from learners' lack of L2 knowledge) and mistakes (the results from some kind of processing failure such as a lapse in memory), which he excludes from the analysis.
- Description of errors. For purposes of analysis, errors are usually classified according to language level (whether an error is phonological, morphological, syntactic, etc.), general linguistic category (e.g. auxiliary system, passive sentences, negative constructions), or more specific linguistic elements (e.g. articles, prepositions, verb forms).
- Explanation of errors. Accounting for why an error was made is the most important step in trying to understand the processes of SLA. Two of the most likely causes of L2 errors are interlingual ("between languages") factors, resulting from negative transfer or interference from L1 and intralingual ("within language") factors, not attributable to cross-linguistic influence. Intralingual errors are also considered developmental errors and often represent incomplete learning of L2 rules or overgeneralization of them. Distinguishing between interlingual and intralingual errors implicitly builds upon CA procedures, since the distinction requires comparative knowledge of L1 and L2. For example, the following passage was in a letter written to me by a native Korean speaker. I have underlined and numbered the errors.

The weather is been[1] *very hot in the*[2] *Washington D.C. There climate*[3] *last week warm*[4].
(1) Use of *is* instead of *has* with *been* (**intralingual/developmental error**). This is evidence that the speaker/writer is learning the English auxiliary verb system, but hasn't yet mastered the distinction between forms of *be* and *have*, which doesn't exist in Korean.
(2) Use of *the* with a place name (**intralingual/developmental** error). This is evidence that the speaker/writer is learning to use articles in front of nouns (no articles are used in Korean) but hasn't yet learned that they don't occur before most place names.
(3) *There climate* is a direct translation of the Korean phrase which would be used in this context (**interlingual/interference** error).
(4) In Korean the word for 'warm' is a verb itself, so no additional verb corresponding to English *was* would be used (**interlingual/interference** error).

- **Evaluation of errors.** This step involves analysis of what effect the error has on whoever is being addressed: e.g. how "serious" it is, or to what extent it affects intelligibility, or social acceptability (such as qualifying for a job). In the example I gave of the Korean L1 speaker making errors in a letter to me, the errors are not serious at all. We are friends, and the ungrammaticality of many of her sentences has no bearing on the social relationship; furthermore, there is no resulting misinterpretation of meaning.

EA continues as a useful procedure for the study of SLA, but a number of shortcomings have been noted and should be kept in mind. These include:

- **Ambiguity in classification.** It is difficult to say, for instance, if a Chinese L1 speaker who omits number and tense inflections in English L2 is doing so because of L1 influence (Chinese is not an inflectional language) or because of a universal developmental process (also present in L1 acquisition) which results in simplified or "telegraphic" utterances.
- **Lack of positive data.** Focus on errors alone does not necessarily provide information on what the L2 learner *has* acquired (although I have inferred from the examples I gave above what the Korean L1 speaker/writer has learned about English auxiliary verbs and articles); further, correct uses may be overlooked.
- **Potential for avoidance.** Absence of errors may result from learners' avoidance of difficult structures, and this will not be revealed by EA (e.g. Shachter [1974] makes the point that Chinese and Japanese L1 speakers make few errors in English L2 relative clauses because they avoid using them).

Interlanguage

Under the same influences from linguistics and psychology as Corder, and building on his concepts and procedures for EA, Larry Selinker (1972) introduced the term **Interlanguage** (IL) to refer to the intermediate states (or

interim grammars) of a learner's language as it moves toward the target L2. As in EA and first language studies of the 1960s and 1970s, Selinker and others taking this approach considered the development of the IL to be a creative process, driven by inner forces in interaction with environmental factors, and influenced both by L1 and by input from the target language. While influence from L1 and L2 language systems in a learner's IL is clearly recognized, emphasis is on the IL itself as a third language system in its own right which differs from both L1 and L2 during the course of its development.

An interlanguage has the following characteristics:

- Systematic. At any particular point or stage of development, the IL is governed by rules which constitute the learner's internal grammar. These rules are discoverable by analyzing the language that is used by the learner at that time – what he or she can produce and interpret correctly as well as errors that are made.
- Dynamic. The system of rules which learners have in their minds changes frequently, or is in a state of flux, resulting in a succession of interim grammars. Selinker views this change not as a steady progression along a continuum, but discontinuous progression "from stable plateau to stable plateau" (1992:226).
- Variable. Although the IL is systematic, differences in context result in different patterns of language use (discussed in Chapter 5).
- Reduced system, both in form and function. The characteristic of reduced form refers to the less complex grammatical structures that typically occur in an IL compared to the target language (e.g. omission of inflections, such as the past tense suffix in English). The characteristic of reduced function refers to the smaller range of communicative needs typically served by an IL (especially if the learner is still in contact with members of the L1 speech community).

Selinker (1972) stresses that there are differences between IL development in SLA and L1 acquisition by children, including different cognitive processes involved (from McLaughlin 1987:61):

- Language transfer from L1 to L2.
- Transfer of training, or how the L2 is taught.
- Strategies of second language learning, or how learners approach the L2 materials and the task of L2 learning.
- Strategies of second language communication, or ways that learners try to communicate with others in the L2.
- Overgeneralization of the target language linguistic material, in which L2 rules that are learned are applied too broadly. (Overgeneralizations include some of the intralingual or developmental errors which were illustrated in the previous section.)

Also unlike L1 acquisition is the strong likelihood of fossilization for L2 learners – the probability that they will cease their IL development in some respects before they reach target language norms, in spite of continuing L2 input and passage of time. This phenomenon relates to age of learning,

with older L2 learners more likely to fossilize than younger ones, but also to factors of social identity and communicative need (e.g. see Selinker 1992). Such factors are at the core of discussions concerning the basic question of *why* some learners are more successful than others. "Relative success" can be defined in this approach as the level of IL development reached before learning stops.

3.1
Scope of IL

Interlanguage

The beginning and end of IL are defined respectively as whenever a learner first attempts to convey meaning in the L2 and whenever development "permanently" stops, but the boundaries are not entirely clear. A schematization of the construct is presented in 3.1. The initial state and very early stages of L2 development in naturalistic (i.e. unschooled or untutored) settings often involve only isolated L2 words or memorized routines inserted in an L1 structural frame for some period of time. For example, we recorded the following utterances from children who were just beginning to acquire English (Saville-Troike, Pan, and Dutkova 1995):

Chinese L1: *Zheige delicious*. 'This is delicious.'

Navajo L1: *Birthday cake deedąą'*. 'We ate a birthday cake.'

Czech L1: *Yili sme bowling*. 'We went bowling.'

IL probably cannot properly be said to begin until there is some evidence of systematic change in grammar. The endpoint of IL is difficult to identify with complete certainty since additional time and different circumstances might always trigger some resumption in learning.

Identification of fossilization, or cessation of IL development before reaching target language norms, is even more controversial (though primarily for social and political rather than linguistic reasons). Should individuals be considered "fossilized" in L2 development because they retain a foreign accent, for instance, in spite of productive fluency in other aspects of the target language? (One thinks of Arnold Schwarzenegger, US motion picture actor and politician, who retains a strong Austrian-German accent, or of many faculty members and students who are identifiably nonnative speakers of English although they speak and write fluently in this language – often even more fluently than many native speakers. There may even be an advantage in retaining a nonnative accent, since "sounding native" may be misinterpreted by native speakers as implying corresponding native social and cultural knowledge.)

There is also the issue of what the concept of "target language" entails as the goal of SLA, especially as it applies to English usage in parts of the world where English has been adopted as an auxiliary or official language but differs from any native variety in Great Britain or

the USA (see Kachru and Nelson 1996). "Native-like" production is neither intended nor desired by many speakers, and assuming that it is or should be the ultimate goal for all L2 learners may be considered somewhat imperialistic.

The concept of an IL as a system of learner language which is at least partially independent of L1 and L2 has been highly productive in the study of SLA. It is generally taken for granted now, although controversies remain concerning its specific nature and whether "progress" should be measured against native-speaker norms (e.g. Eubank, Selinker, and Sharwood Smith 1995; Johnson and Johnson 1998:174–76).

Morpheme Order Studies

One important question in the study of SLA which the concept of IL highlighted during the 1970s is whether there is a natural order (or universal sequence) in the grammatical development of L2 learners. This is interesting because if we find that the same elements of an L2 are learned first no matter what the learner's L1 is, we might assume that transfer from L1 is less important than if we were to find that the order of acquisition is different for speakers of different native languages. If the same order of acquisition is found in L2 as in children's L1 learning, there is the additional implication that the acquisition processes may be very much the same for all of language development.

What is inflection?

Inflection adds one or more units of meaning to the base form of a word, to give it a more specific meaning. This is how we code for plural nouns, past tense and progressive aspect in English.

	Basic form	Unit of meaning	Function of the unit of meaning	Example
Noun	Cat	s	Plural	Three cats
Verbs	walk	ed	Past	I walked yesterday.
	walk	ing	Progressive	We were walking.

Roger Brown (1973) provided the first baseline information on an L1 acquisition sequence by tracking the order in which three children mastered the production of a set of grammatical morphemes in English, including inflections which mark tense on verbs and plural number on nouns. His work was soon validated by studies of larger numbers of English L1 children. The claim that this sequence constituted a natural order for English L2 as well as English L1 was first made by Heidi Dulay and Marina Burt, based on studies of children learning English who were native speakers of Spanish and Chinese. A list of morphemes that were included in the Brown (1973) and Dulay and Burt (1974) findings is given in 3.2. These results indicate, for example, that the progressive suffix *-ing* and plural *-s*

3.2 English L1 and L2 Morphene Acquisition Order

English L1	Morpheme	Example	English L2
1	Progressive *-ing*	He is talk*ing*.	3
2	Plural *-s*	There are two cats.	4
3	Past irregular	We *ate*.	7
4	Possessive *-s*	The child's toy	8
5	Articles *a/the*	*The* cat/*A* sunny day	1
6	Past regular *-ed*	They talk*ed*.	6
7	Third person *-s*	He sing*s*.	9
8	Copula *be*	He*'s* tall.	2
9	Auxiliary *be*	She*'s* singing.	5

are the first of this set of morphemes to be mastered by both L1 and L2 learners of English; the irregular past tense form of verbs and possessive *-s* are acquired next in sequence for L1, but relatively later for learners of L2 (after forms of *be* and *a/the*).

Although not identical, the order of morpheme acquisition reported was similar in L1 and L2. Further, the order was virtually the same in English L2 whether children were L1 speakers of Spanish or Chinese. The existence of such a "natural order" strengthened claims for internally driven acquisition processes, which Dulay and Burt (1973) labeled creative construction. They concluded that L2 learners are neither merely imitating what they hear nor necessarily transferring L1 structures to the new code, but (subconsciously) creating a mental grammar which allows them to interpret and produce utterances they have not heard before.

A claim was originally made that this evidence of similar morpheme order supports an Identity Hypothesis (or L1 = L2): that processes involved in L1 and L2 acquisition are the same. The strong form of this hypothesis was rejected largely because the basic question of *what* is being acquired in SLA was limited here to a list of isolated English morphemes, with no principled relation to other aspects of English or to other languages, and also because of weaknesses in the research methodology.

The concept of natural order remains very important for understanding SLA, however, both from linguistic and from cognitive approaches. The morpheme acquisition studies were followed by research which indicated that there are also regular sequences in acquisition of some syntactic constructions by both children and adults (e.g. negation, questions, and relative clauses). These findings form part of the basis for continuing speculation that innate mechanisms for language acquisition may not be limited to early childhood.

Monitor Model

One of the last of the early approaches to SLA which has an internal focus is the Monitor Model, proposed by Stephen Krashen (1978). It explicitly and essentially adopts the notion of a language acquisition device (or LAD), which is a metaphor Chomsky used for children's innate knowledge of language.

Krashen's approach is a collection of five hypotheses which constitute major claims and assumptions about how the L2 code is acquired. Caution is required, however, that Krashen's model has frequently been criticized by researchers because many of its constructs (e.g. what constitutes comprehensible input) and the claimed distinction between learning and acquisition are vague and imprecise, and because several of its claims are impossible to verify (see McLaughlin 1987). The hypotheses forming the model are the following:

- *Acquisition-Learning Hypothesis.* There is a distinction to be made between acquisition and learning. Acquisition is subconscious, and involves the innate language acquisition device which accounts for children's L1. Learning is conscious and is exemplified by the L2 learning which takes place in many classroom contexts.
- *Monitor Hypothesis.* What is "learned" is available only as a monitor, for purposes of editing or making changes in what has already been produced.
- *Natural Order Hypothesis.* We acquire the rules of language in a predictable order.
- *Input Hypothesis.* Language acquisition takes place because there is comprehensible input. If input is understood, and if there is enough of it, the necessary grammar is automatically provided.
- *Affective Filter Hypothesis.* Input may not be processed if the affective filter is "up" (e.g. if conscious learning is taking place and/or individuals are inhibited).

In spite of being severely criticized by researchers, Krashen's model had a major influence on language teaching in the USA in the 1980s and 1990s, including avoidance of the explicit teaching of grammar in many hundreds of classrooms. The pendulum has since begun to swing back in the opposite direction, with formal grammar teaching increasingly being introduced, especially with adults, who are able to benefit from (and may even need) an explicit explanation of grammatical structure.

The early period for linguistic study of SLA which we have just reviewed ended with some issues in rather spirited debate among proponents of different approaches, but there was widespread consensus on some important points. These include:

- *What* is being acquired in SLA is a "rule-governed" language system. Development of L2 involves progression through a dynamic interlanguage system which differs from both L1 and L2 in significant respects. The final state of L2 typically differs (more or less) from the native speakers' system.

- *How* SLA takes place involves creative mental processes. Development of both L1 and L2 follows generally predictable sequences, which suggests that L1 and L2 acquisition processes are similar in significant ways.
- *Why* some learners are more (or less) successful in SLA than others relates primarily to the age of the learner.

As we reach the 1980s in this survey, new proposals in Chomskyan theoretical linguistics were about to have a major impact on the study of SLA, and Universal Grammar was to become (and continues to be) the dominant approach with an internal focus.

Universal Grammar

Universal Grammar (UG) continues the tradition which Chomsky introduced in his earlier work. Two concepts in particular are still of central importance:

(1) What needs to be accounted for in language acquisition is linguistic competence, or speaker-hearers' underlying knowledge of language. This is distinguished from linguistic performance, or speaker-hearers' actual use of language in specific instances.
(2) Such knowledge of language goes beyond what could be learned from the input people receive. This is the logical problem of language learning, or the poverty-of-the stimulus argument.

Noam Chomsky (b. Philadelphia), 1928–present

Linguistics

A professor at the Massachusetts Institute of Technology since 1961, Noam Chomsky has had a revolutionary impact on the field of linguistics. His Transformational-Generative Grammar was the first linguistic framework with an internal focus. His theories have evolved from there to the Principles and Parameters Model and to the Minimalist Program.

Interesting note: The sentence *Colorless green ideas sleep furiously* was constructed by Chomsky to show that a grammatically correct sentence can still be void of meaning. This sentence was later used in one 1985 literary competition where the goal was to make it meaningful in 100 words or less!

Chomsky and his followers have claimed since the 1950s that the nature of speaker-hearers' competence in their native language can be accounted for only by innate knowledge that the human species is genetically endowed with. They argue that children (at least) come to the task of acquiring a specific language already possessing general knowledge of what all languages have in common, including constraints on how any natural language can be structured. This innate knowledge is in what Chomsky calls the language faculty, which is "a component of the human mind, physically represented in the brain and part of the biological endowment of the species" (Chomsky 2002:1). What all languages have in common is Universal Grammar.

If a language faculty indeed exists, it is a potential solution to the "logical problem" because its existence would mean that children already have a rich system of linguistic knowledge which they bring to the task of L1 learning. They wouldn't need to learn this underlying system, but only build upon it "on the basis of other inner resources activated by a limited and fragmentary linguistic experience" (Chomsky 2002:8). In other words, while children's acquisition of the specific language that is spoken by their parents and others in their social setting requires input in that language, the acquisition task is possible (and almost invariably successful) because of children's built-in capacity. One of the most important issues in a UG approach to the study of SLA has been whether this innate resource is still available to individuals who are acquiring additional languages beyond the age of early childhood.

Until the late 1970s, followers of this approach assumed that the language acquisition task involves children's induction of a system of rules for particular languages from the input they receive, guided by UG. How this could happen remained quite mysterious. (Linguistic input goes into a "black box" in the mind, something happens, and the grammatical system of a particular language comes out.) A major change in thinking about the acquisition process occurred with Chomsky's (1981) reconceptualization of UG in a Principles and Parameters framework (often called the Government and Binding [GB] model), and with his subsequent introduction of the Minimalist Program (1995).

Principles and Parameters

Since around 1980, the construct called Universal Grammar has been conceptualized as a set of principles which are properties of all languages in the world. Some of these principles contain parameters, or points where there is a limited choice of settings depending on which specific language is involved. Because knowledge of principles and parameters is postulated to be innate, children are assumed to be able to interpret and unconsciously analyze the input they receive and construct the appropriate L1 grammar. This analysis and construction is considered to be strictly constrained and channeled by UG, which explains why L1 acquisition for children is relatively rapid and always successful; children never violate core principles nor do they select parametric values outside of the channel imposed by UG, even though there might be other logical possibilities.

An example of an early principle which Chomsky posited stipulates that every phrase in every language has the same elements including a Head: e.g. a noun phrase (NP) must always have a noun head (N), a verb phrase (VP) must always have a verb head (V), a prepositional or postpositional phrase (PP) must always have a preposition or postposition head (P), and so forth. The only choice, or parameter setting, that speakers have in different languages is Head Direction, or the position of the head in relation to other elements in the phrase. There are only two possible choices: head-initial or head-final.

Children who are learning English L1 receive input that lets them know that English generally has a head-initial parameter setting. This is because they hear sentences with the following word order:

a. *John [kicked the ball]*$_{VP}$
   I have put brackets around the VP in this example, and underlined the head of that phrase, which is the verb *kicked*. The word order of this VP provides evidence that the English parameter setting is head-initial, because the verb *kicked* comes in front of the ball.
b. *John rode [in the car]*$_{PP}$
   Brackets are around the PP in this example, and its head is the preposition *in*. This provides additional evidence that the parameter setting for English is head-initial, because the preposition comes in front of *the car* in the phrase.

In contrast, children who are learning Japanese L1 receive input that lets them know that Japanese has a head-final parameter setting. They hear sentences with the following word order:

a. *John-wa [booru-wo ketta]*$_{VP}$ (Literally: 'John ball kicked')
   This provides evidence that the Japanese parameter setting is head-final, because the verb *ketta* 'kicked' comes after *booru-wo* 'ball' in the VP.
b. *John-wa [kuruma-ni]*$_{PP}$ *notta* (Literally: 'John car-in rode')
   This provides additional evidence that Japanese is head-final because the postposition *-ni* 'in' comes after *kuruma* 'car' in the PP.

Japanese and English word orders are largely, though not entirely, a "mirror image" of one another. Children acquiring English or Japanese as their L1 need to hear only a limited amount of input to set the parameter for this principle correctly. That parameter setting then presumably guides them in producing the correct word order in an unlimited number of utterances which they have not heard before, since the general principle stipulates that all phrases in a language tend to have essentially the same structure. (Not all languages are completely consistent, however. In English and Chinese, for example, since modifiers precede the noun head, the NP is head-final, but the object NP follows the Verb.)

Other principles and parameter settings that account for variations between languages include those that determine whether or not agreement between subject and verb must be overtly expressed, and whether or not a subject must be overtly present (the "null subject" parameter). For example, English speakers must say *It is raining*, with a meaningless overt subject *it*, whereas subjects are omitted in Chinese *Xia yu* 'Down rain' and

Spanish *Está lloviendo* 'Is raining.' There is no complete listing of invariant principles and principles with parametric choices in UG, and there perhaps will never be one, since proposals concerning their identity change as the theory evolves. In any case, the specification of universal principles and parameters is relevant to theoretical developments and understandings, and may have practical value in L2 teaching. But children have no use for such a list, of course, and could not understand it if one were available. Principles and parameters per se are not, cannot, and need not be learned in L1 acquisition, as they are assumed to be built into the Language Acquisition Device (LAD) we are born with. This may also partially hold true for older second language learners, though an awareness of parameter settings in an L2 may help focus perception on input and thus facilitate learning.

What is acquired in L1 acquisition is not UG itself; UG is already present at birth as part of the innate language faculty in every human being, although maturation and experience are required for the manifestation of this capacity. Child acquisition of a specific language involves a process of selecting from among the limited parametric options in UG those that match the settings which are encountered in linguistic input.

In a radical change from his earlier Transformational-Generative (TG) theory, Chomsky no longer believes that acquisition involves induction of a language-specific system of rules, based on input and guided by UG. Rather, he argues that there are just extremely general principles of UG and options to be selected. The acquisition of vocabulary has become much more important in his recent theory, because lexical items are thought to include rich specification of properties that are needed for parameter setting and other features of grammar, as well as for interpretation of semantic meaning. "Knowing" the noun *foot* in English, for instance, means knowing how it is pronounced and what it refers to, that it is a noun and can function as the head of an NP, and that it takes an irregular plural form; "knowing" the verb *chi* 'eat' in Chinese means knowing its pronunciation and meaning, that it is a verb and the head of a VP, and that it normally requires a direct object, often the "dummy object" *fan* (literally 'rice').

The starting point (or **initial state**) for child L1 acquisition is thus UG, along with innate learning principles that are also "wired in" in the **language faculty** of the brain. *What* is acquired in the process of developing a specific language is information from input (especially vocabulary) that the learner matches with UG options. The eventual product is the **final state**, or adult grammar (also called "stable state"). Intermediate states in development are "state L" (L_1, L_2, L_3, . . .). As summarized by Chomsky:

> The initial state changes under the triggering and shaping effect of experience, and internally determined processes of maturation, yielding later states that seem to stabilize at several stages, finally at about puberty. We can think of the initial state of [the language faculty] as a device that maps experience into state L attained: a "language acquisition device" (LAD). (2002:85)

From this perspective, *how* acquisition occurs for children is "natural", "instinctive," and "internal to the cognitive system." Unlike SLA, attitudes, motivation, and social context (beyond provision of the minimal input that is required) play no role. The question of *why* some learners are more successful than others is not considered relevant for L1 acquisition, since all native speakers in this view attain essentially the same "final state." (This conceptualization does not take into account further development of different registers, such as hip-hop, sports reporting, or formal written English.)

UG and SLA

Three questions are of particular importance in the study of SLA from a UG perspective:

- What is the initial state in SLA?
- What is the nature of interlanguage, and how does it change over time?
- What is the final state in SLA?

Initial state

As discussed in the section on L1 versus L2 acquisition in the previous chapter, learners already have knowledge of L1 at the point where L2 acquisition begins; they already have made all of the parametric choices that are appropriate for that L1, guided by UG. Some L1 knowledge is clearly transferred to L2, although exactly which features may transfer and to what degree appears to be dependent on the relationship of L1 and L2 (perhaps involving markedness of features similar to those discussed under Functional Typology below), the circumstances of L2 learning, and other factors. When L1 and L2 parameter settings for the same principle are the same, positive transfer from L1 to L2 is likely; when L1 and L2 parameter settings are different, negative transfer or interference might occur.

For example, I once heard one Navajo girl (who was at an early stage of English L2 acquisition) describe the location of a doll to her teacher:

Dollie is wagon in.

The child's phrase *wagon in* is a postpositional phrase with the head P *in* placed after *wagon*. This does not match the English head-first parameter setting, which requires the head *in* at the beginning of the phrase. The Navajo language (like Japanese) has a head-final setting, and *wagon in* is a direct translation of Navajo word order for *tsinaabąąs bi-į́?* 'wagon it-in.' The child who produced this English sentence was inappropriately transferring a parameter setting from Navajo L1 to English L2.

L2 learners may still have access to UG in the initial state of SLA as well as knowledge of L1, but there is no agreement on this. Four possibilities have been suggested (e.g. see Cook 1988):

(1) Learners retain *full access* to UG as an innate guide to language acquisition, even when they are learning languages subsequent to their L1.

(2) Learners retain *partial access* to UG, keeping some of its components but not others.
(3) Learners retain *indirect access* to UG through knowledge that is already realized in their L1 but have no remaining direct access.
(4) Learners retain *no access* to UG and must learn L2 via entirely different means than they did L1.

Nature and development of interlanguage

Interlanguage (IL) is defined in the Principles and Parameters perspective as intermediate states of L2 development (IL_1, IL_2, IL_3, etc.), which is compatible with the notion of IL as "interim grammars" that was introduced in the 1960s and 1970s. If at least some access to UG is retained by L2 learners, then the process of IL development is in large part one of resetting parameters on the basis of input in the new language. For example, the L1 speaker of Japanese or Navajo who is learning English L2 needs to reset the Head Direction parameter from head-final to head-initial; the L1 speaker of English who is learning Japanese or Navajo needs to reset it from head-initial to head-final.

Learners change the parameter setting (usually unconsciously) because the L2 input they receive does not match the L1 settings they have. If access to UG is still available, then that will limit their choices (as it does in L1) and their IL grammars will never deviate from structures that are allowed by UG. If learning principles that are part of the **language faculty** are also still available, then sufficient information to make these changes is available from the **positive evidence** they receive, i.e. the input that is provided from experiencing L2 in natural use or formal instruction. **Negative evidence**, including explicit correction, is often also provided to L2 learners (especially if they receive formal language instruction), and this probably plays a role in parameter resetting for older learners. (Evidence for different positions on why and how parameter resetting occurs is discussed in Gregg 1996 and White 2003.)

Constructionism, an approach to SLA which has been formulated within Chomsky's Minimalist Program (e.g. Herschensohn 2000), considers IL development as the progressive mastery of L2 vocabulary along with the morphological features (which specify word form) that are part of lexical knowledge. While the general principles and parameters that constitute UG do not need to be learned, "morphological paradigms must gradually be added to the lexicon, just like words" (White 2003:194). The stages and variability which characterize IL development are accounted for because of initially incomplete specification of these features in learners' competence. While parameter setting and mastery of morphological features are linked in L1 acquisition, this approach claims that they are not necessarily linked for older learners in SLA. Failure to reach a state of full feature specification in the lexicon is seen as the primary reason that many L2 learners **fossilize** at an intermediate level of development without attaining near-native competence.

Of particular relevance for L2 learners and teachers is the critical role of lexical acquisition in providing information for parameter (re)setting and other aspects of grammar in a UG approach. This is in sharp contrast to the structuralist and behaviorist position which was reviewed near the beginning of this chapter, that all of the basic grammatical structures of L2 could (indeed should) be learned in conjunction with minimal vocabulary.

If access to UG or the learning principles of the language faculty are no longer available for SLA, then IL development would need to be explained as a fundamentally different learning process than that which takes place for L1. Evidence that IL does not violate the constraints of UG, and that it cannot be accounted for completely by either L1 transfer or L2 input, are used to argue against the *no access* position.

Final state

While the question of *why* some learners are more successful than others is not relevant for basic L1 acquisition (since all children achieve a native "final state"), the question is highly relevant for SLA. All approaches to this topic need to account for the great variability which is found in the ultimate level of attainment by L2 learners. There are several possibilities within the UG framework. These include:

- All learners may not have the same degree of access to UG.
- Different relationships between various L1s and L2s may result in differential transfer or interference.
- Some learners may receive qualitatively different L2 input from others.
- Some learners may be more perceptive than others of mismatches between L2 input and existing L1 parameter settings.
- Different degrees of specification for lexical features may be achieved by different learners.

However, there are other issues in SLA that are not addressed, or are not addressed satisfactorily, by a narrow UG approach, with its strictly internal focus on the mental organization of the learner. We now turn to consider some major alternative views.

Functional approaches

While UG has been the dominant linguistic approach to SLA for many years, many researchers have rather chosen to take an external focus on language learning. The more influential of these approaches are based on the framework of Functionalism.

Functional models of analysis date back to the early twentieth century, and have their roots in the Prague School of linguistics that originated in Eastern Europe. They differ from structuralist and early generative models by emphasizing the information content of utterances, and in considering language primarily as a system of communication rather than as a set of rules.

The term function has several meanings in linguistics, including both structural function (such as the role which elements of language structure play as a subject or object, or as an actor or goal) and pragmatic function (what the use of language can accomplish, such as convey information, control others' behavior, or express emotion). Approaches to SLA which are characterized as functional differ in emphasis and definition but share the following characteristics in general opposition to those in the Chomskyan tradition:

- Focus is on the use of language in real situations (performance) as well as underlying knowledge (competence). No sharp distinction is made between the two.
- Study of SLA begins with the assumption that the purpose of language is communication, and that development of linguistic knowledge (in L1 or L2) requires communicative use.
- Scope of concern goes beyond the sentence to include discourse structure and how language is used in interaction, and to include aspects of communication beyond language (Tomlin 1990).

Four of the functional approaches which have been influential in SLA are Systemic Linguistics, Functional Typology, function-to-form mapping, and information organization.

Systemic Linguistics

Systemic Linguistics has been developed by M. A. K. Halliday, beginning in the late 1950s. This is a model for analyzing language in terms of the interrelated systems of choices that are available for expressing meaning. Basic to the approach is the notion, ultimately derived from the anthropologist Malinowski, that language structures cannot be idealized and studied without taking into account the circumstances of their use, including the extralinguistic social context.

From this functional view,

> language acquisition . . . needs to be seen as the mastery of linguistic functions. Learning one's mother tongue is learning the uses of language, and the meanings, or rather the meaning potential, associated with them. The structures, the words and the sounds are the realization of this meaning potential. Learning language is learning how to mean.
> (Halliday 1973:345)

To relate this notion to the question about *what* language learners essentially acquire, in Halliday's view it is not a system of rules which govern language structure, but rather "meaning potential": "what the speaker/hearer *can* (what he can mean, if you like), not what he knows" (1973:346). The process of acquisition consists of "mastering certain basic functions of language and developing a meaning potential for each" (1975:33).

Halliday (1975) describes the evolution of the following pragmatic functions in early L1 acquisition (he calls them "functions of language as a whole"), which are universal for children:

- *Instrumental* – language used as a means of getting things done (one of the first to be evolved): the "I want" function.
- *Regulatory* – language used to regulate the behavior of others: the "do as I tell you" function.
- *Interactional* – use of language in interaction between self and others: the "me and you" function.
- *Personal* – awareness of language as a form of one's own identity: the "here I come" function.
- *Heuristic* – language as a way of learning about things: the "tell me why" function.
- *Imagination* – creation through language of a world of one's own making: the "let's pretend" function.
- *Representational* – means of expressing propositions, or communicating about something (one of the last to appear): the "I've got something to tell you" function.

Linguistic structures which are mastered in the developmental process are "direct reflections" of the functions that language serves; their development is closely related to the social and personal needs they are used to convey.

One application of Halliday's model to the study of SLA comes with seeing L2 learning as a process of adding multilingual meaning potential to what has already been achieved in L1. This is an approach that some of my colleagues and I have taken in our research. We have concluded that "Second language acquisition is largely a matter of learning new linguistic forms to fulfill the same functions [as already acquired and used in L1] within a different social milieu" (Saville-Troike, McClure, and Fritz 1984:60). In studying children who had just arrived in the USA from several different countries, for instance, we found that all of them could accomplish a wide range of communicative functions even while they still had very limited English means at their disposal. What we observed and recorded over a period of several months for every child in our study was not the emergence of new functions (as we would expect in early L1 development), but emergence of new language structures to augment existing choices for expressing them. This structural emergence follows the same general sequence for each function (not unlike early stages of L1). For example:

1. **Nonlinguistic**
   Regulatory: *(Hitting another child who is annoying.)*
   Interactional: Unh? *(Uttered as a greeting.)*
   Heuristic: *(Pointing at an object [with a questioning look] to request the English term for it.)*
2. **L2 formula or memorized routine**
   Regulatory: Don't do that!
   Interactional: Hi!
   Heuristic: What's it?

3. **Single L2 word**
   Regulatory: He! *(Pointing out another child's offending behavior to a teacher.)*
   Interactional: Me? *(An invitation to play.)*
   Heuristic: What? *(Asking for the English term for an object.)*
4. **L2 phrase or clause**
   Regulatory: That bad!
   Interactional: You me play?
   Heuristic: What name this?
5. **Complex L2 construction**
   Regulatory: The teacher say that wrong!
   Interactional: I no like to play now.
   Heuristic: What is name we call this?

Other applications of Halliday's model can be found in the study of SLA in relation to social contexts of learning and use. That perspective is discussed in Chapter 5.

Functional Typology

Another approach within the functional framework is Functional Typology, which is based on the comparative study of a wide range of the world's languages. This study involves the classification of languages and their features into categories (or "types"; hence "typology"), with a major goal being to describe patterns of similarities and differences among them, and to determine which types and patterns occur more/less frequently or are universal in distribution. The approach is called "functional" because analysis integrates considerations of language structure, meaning, and use.

Functional Typology has been applied to the study of SLA most fruitfully in accounting for developmental stages of L2 acquisition, for why some L2 constructions are more or less difficult than others for learners to acquire, and for the selectivity of crosslinguistic influence or transfer (i.e. for why some elements of L1 transfer to L2 and some do not). A particularly important concept which is tied to these accounts is markedness – the notion of markedness deals with whether any specific feature of a language is "marked" or "unmarked." A feature is "unmarked" if it occurs more frequently than a contrasting element in the same category, if it is less complex structurally or conceptually, or if it is more "normal" or "expected" along some other dimension. The concept applies to all levels of linguistic analysis. For example:

- In phonology, the most common syllable structure which occurs in languages of the world is CV (consonant + vowel, as in *me* and *ba-na-na*), so this structure is "unmarked". It is much less common to have a sequence of consonants at the beginning or end of syllables; English sequences like *street* [stri:t] and *fence* [fents] are "marked" in this respect.
- In vocabulary, the preposition *in* denotes location while the preposition *into* is more complex, denoting both location and

3.3 Markedness Differential Predictions for SLA

Feature in L1	Feature in L2	Prediction
Marked	Unmarked	L2 feature will be easy to learn; L1 feature will not transfer to L2
Unmarked	Marked	L1 feature will transfer to L2

directionality. *Into* is thus "marked" in contrast with *in* because it is both structurally and conceptually more complex.

- In syntax, the basic word order in sentences of SVO (subject–verb–object) is more common in languages of the world than is SOV. SVO is thus relatively "unmarked" and SOV relatively "marked."
- In discourse, the expected "unmarked" response to the English formulaic greeting *How are you?* is *Fine. How are you?* (no matter how the respondent is actually feeling). A response which reports information about one's health or other personal conditions is not expected in this routine exchange, and is "marked." Similarly, the "unmarked" response to a question requesting information is an answer about the same topic. Silence or a comment on a different topic is a "marked" response because it is not in accord with "normal" conversational practice.

In accounting for order and relative difficulty for acquisition, unmarked elements are likely to be acquired before marked ones in children's L1 (Jakobson 1941), and to be easier for a learner to master in L2. In phonology, for instance, the babbling and first words of a child in L1 are likely to have an unmarked CV syllabic structure (no matter what the native language), and marked CC sequences appear only at a later stage of development. It is also likely that L2 learners will find marked CC sequences more difficult to produce, especially if they do not occur at all in the speakers' L1. A markedness account of selective transfer from L1 to L2 (proposed as the Markedness Differential Hypothesis by Eckman 1977) predicts that unmarked features in L1 are more likely to transfer, as well as that marked features in L2 will be harder to learn. A simplified summary of this hypothesis is shown in 3.3.

For example, the pronunciation of the marked consonant sequence [sk] in *school* should be difficult for Spanish L1 speakers, whose native phonological system is "simpler" than English in this respect because it does not allow two voiceless consonants to occur together. It is indeed common for beginning Spanish L1 learners of English L2 to break this [sk] combination apart into two syllables and pronounce the word as [ɛs-kul], thus avoiding the marked structure. In reverse, learners of Spanish L2 should have no comparable problem pronouncing *escuela* [ɛs-kwe-la] 'school,' since it contains no consonant cluster in any syllable.

Functional Typology resembles Contrastive Analysis in comparing elements of different languages in order to predict or explain transfer from

L1 to L2, but it goes beyond the surface-level structural contrasts of CA to more abstract patterns, principles, and constraints. The Markedness Differential Hypothesis is also an advance over the traditional CA approach in that:

> Eckman's work suggests that transfer is not always a bidirectional process, as might be inferred from a strict contrastive analysis approach. Instead, this work on linguistic universals indicates that the reason why some first-language structures are transferred and others are not relates to the degree of markedness of the structures in the various languages.
>
> (McLaughlin 1987:90)

One implication that we might draw from this approach is that some aspects of some languages are more difficult to learn than others, in spite of the traditional claim within linguistics that all languages are equally complex. Another issue that we might speculate about is why some types and patterns of features are more or less frequent than others in both native and second languages. Functional explanations tend to refer to extralinguistic factors, or elements outside of language. Certain factors that have been suggested are: perceptual salience, ease of cognitive processing, physical constraints (e.g. the shape of the human vocal tract), and communicative needs (see Ramat 2003).

Function-to-form mapping

Another functional approach which has been applied to the description and analysis of interlanguage emphasizes function-to-form mapping in the acquisitional sequence. A basic concept from this perspective is that acquisition of both L1 and L2 involves a process of grammaticalization in which a grammatical function (such as the expression of past time) is first conveyed by shared extralinguistic knowledge and inferencing based on the context of discourse, then by a lexical word (such as *yesterday*), and only later by a grammatical marker (such as the suffix *-ed*). For example, if you ask a beginning learner of English what he did the day before he might say *I play soccer*, relying on context to convey the meaning of past time; a somewhat more advanced learner might say *Yesterday I play soccer*, using an adverb to convey the meaning of past; and a still more advanced learner might say *I played soccer*, using the grammatical inflection *-ed*.

The general principle of increasing reliance on grammatical forms and reducing reliance on context and lexical words to express functions such as time is followed in all languages. In Chinese L2, for example, learners tend to use the lexical adverb *jiu* 'then' to express temporal sequencing of events before they use the grammatical marker *le* 'finished' in expressing this notion. The following utterances were produced by a beginning learner (a) and a more advanced learner (b) who were retelling the same event in a film (*The Pear Story*) that they had viewed (Yang 2002):

a. *Ta kan neige ne haizi de shihou, ta jiu shuai xia, ta shuiguo jiu diao xiagu.*

'When he looked at that girl, he then fall off (the bike), his fruit then fall down (on the ground).'

b. *Suoyi tade zixingche shui dao le, suoyi suoyou de neige shuiguo dou diao xialai le.*

'So his bike fell down, so all the fruit fell off'

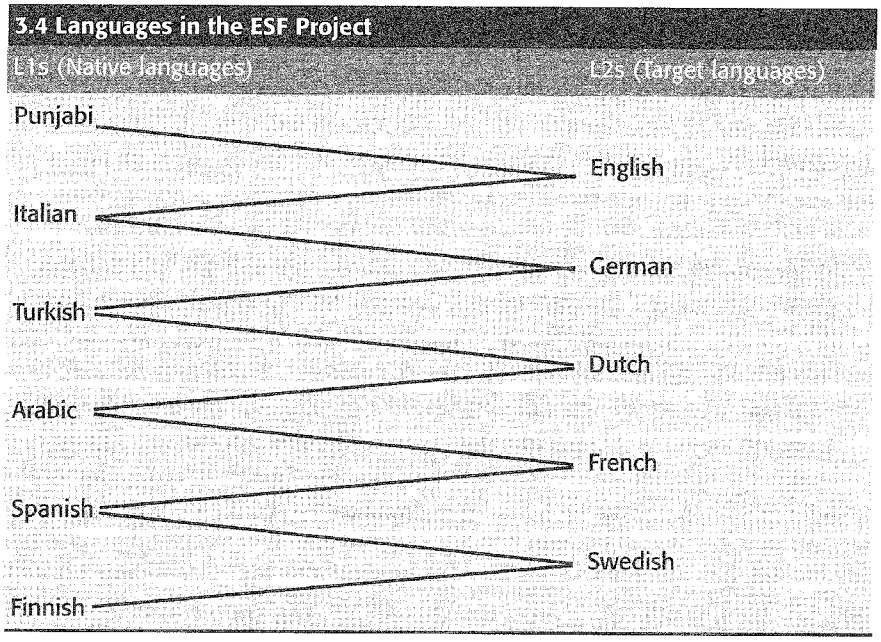
Talmy Givón (1979) proposed the distinction between a style of expressing meaning which relies heavily on context (which he calls a pragmatic mode) and a style which relies more on formal grammatical elements (a syntactic mode), and the notion that change from one to the other is evolutionary in nature. He lists a number of contrasts in addition to the evolution from no use of grammatical morphology to elaborate use of grammatical morphology, which I illustrated above. Additional developmental contrasts include:

- From topic-comment to subject-predicate structure. A subject-predicate structure involves more grammatical marking because of the agreement it requires between sentence elements, while a topic-comment structure requires no such marking in stating what the topic is and then giving some information about it.
- From loose conjunction (with elements merely juxtaposed or connected with *and*) to tight subordination (with elements connected by words like *since* or *because*).
- From slow rate of delivery (under several intonation contours) to fast rate of delivery (under a single intonational contour).
- From word order governed mostly by the pragmatic principle of old information first, followed by new information (as in topic-comment structures) to word order used to signal semantic case functions (such as subject or object).
- From roughly one-to-one ratio of verbs to nouns in discourse to a larger ratio of nouns over verbs. The increase in the ratio of nouns to verbs indicates that more semantic case functions are being expressed: e.g. not just subject (only one noun with one verb), but also object and indirect object (a total of three nouns).

According to this approach, language acquisition importantly involves developing linguistic forms to fulfill semantic or pragmatic functions. Grammaticalization is driven by communicative need and use and is related to the development of more efficient cognitive processing (e.g. via automatization) as part of language learning. This aspect of language acquisition will be considered in Chapter 4.

Information organization

Information organization refers to a functional approach which focuses on utterance structure, or "the way in which learners put their words together" (Klein and Perdue 1993:3). The task of studying SLA from this perspective includes describing the structures of interlanguage (called learner varieties by Klein and Perdue), discovering what



The evidence for this description and analysis comes primarily from the European Science Foundation (ESF) project (e.g. Klein and Perdue 1992; Perdue 1993). Over a period of almost three years, Klein, Perdue, and other linguists regularly recorded the L2 production of speakers of six L1s who were learning five different L2s. All of the learners were adult immigrants in Europe who needed to use the L2 to communicate but did not receive a significant amount of formal instruction in that language.

The number of L1s and L2s in this study is important because it allows the researchers to make generalizations about the nature of interlanguage (or learner varieties) which would not be possible if all of the participants were speakers of the same L1, or if all were learning the same L2. The combinations of native and target languages are shown in 3.4 (adapted from Klein and Perdue 1992:5).

This list indicates that the participants are native speakers of both Punjabi and Italian learning English, of Italian and Turkish learning German, of Turkish and Arabic learning Dutch, of Arabic and Spanish learning French, and of Spanish and Finnish learning Swedish. Most of the L2s are related Germanic languages, but the L1s represent several very different language families: Turkic (Turkish), Semitic (Arabic), Indo-Iranian (Punjabi), Romance (Italian and Spanish), and Finno-Ugric (Finnish).

Developmental levels

All of the learners in this study, no matter what their L1 and L2, go through a remarkably similar sequence of development in their interlanguage. The examples are from narratives about a Charlie Chaplin film that were told by learners in English L2 (as reported in Huebner, Carroll, and Perdue 1992).

- *Nominal Utterance Organization (NUO).* Learners generally begin with the seemingly unconnected naming of subjects and objects (i.e. with

nouns and pronouns, or "nominals"). They may also use adverbs and adjectives or other elements but seldom use a verb to help organize an utterance.

PUNJABI L1: *charlie and girl accident*
ITALIAN L1: *this man one idea from the window*

- *Infinite Utterance Organization (IUO).* Learners increasingly add verbs to their utterances, but they seldom use grammatical morphemes to convey the meaning of tense, person, or number (i.e. the verb is uninflected, or "infinite"). There is also increasing use of grammatical relators such as prepositions. At this stage, learners have constructed an interlanguage grammar which is called the **Basic Variety**. They may be able to express themselves adequately at this stage in some contexts, and not all continue development beyond this level.

PUNJABI L1: *charlie and girl and policeman put on the floor*
ITALIAN L1: *the blonde friend tell other woman about the son*

- *Finite Utterance Organization (FUO).* Learners who continue interlanguage development beyond the IUO level next add grammatical morphemes to the verb (i.e. the verb becomes inflected, or "finite"). This is the process of progressive grammaticalization, which was described in the previous section on function-to-form mapping.

PUNJABI L1: *after she said to charlie "you eat dinner"*
ITALIAN L1: *he has finished the work*

The sequence of structural development shows minimal crosslinguistic influence for the NUO and IUO levels; speakers of all languages follow the same pattern. More L1 transfer occurs as learners increase their L2 resources and produce more complicated utterances (Perdue 2000).

Organizing principles

There is a limited set of principles which learners make use of for organizing information. These interact, and the balance or weight of use among them shifts during the process of interlanguage development. These principles may be classified as:

- *Phrasal constraints*, or restrictions on the phrasal patterns which may be used. Once the verb has emerged, for example, a basic pattern is noun phrase plus verb (NP + V), with a second NP after the verb possible. There are also restrictions on the composition and complexity of each phrasal category. For example, at one stage of development a noun phrase (NP) may consist only of a noun (N) or a pronoun. At the next stage of development it may consist of a determiner (e.g. *the*) plus noun (D + N) or an adjective plus noun (Adj + N), but not D + Adj + N.

Possible phrasal composition increases in complexity with developmental level.

- *Semantic constraints*, or features of categories like NP which determine their position in a sentence and what case role they are assigned (e.g. agent or "doer" of the action, or patient or recipient of the action). When an utterance has more than one NP, learners use such semantic factors to decide which one should come first. The principle that learners follow is to put the agent first, or the NP that refers to the thing that is most likely to be in control of other referents.
- *Pragmatic constraints*, including restrictions that relate to what has been said previously, or to what the speaker assumes that the hearer already knows. The general pragmatic principle is to put what is known (the topic) first, and new information or what the speaker is focusing on last.

While all learners follow essentially the same principles in organizing their utterances, there is individual variation, in part attributable to how the principles apply in their L1 and influence interlanguage use. These constraints are therefore not seen as deterministic, but as "something like 'guiding forces' whose interplay shapes the utterance" (Perdue 1993:25).

In summarizing results, Klein and Perdue (1993:261–66) offer four "bundles of explanations" for the sequence of acquisition they find, and for why some L2 learners are more successful than others:

- *Communicative needs.* Discourse tasks push the organization of utterances, in part to overcome communicative inadequacies. Linguistic means are acquired to overcome limitations of earlier levels or stages of expression.
- *Cross-linguistic influence.* Influence from L1 affects rate of interlanguage development and ultimate level of success, although not order of acquisition. L1 influence is a factor in rate and achievement because it more or less facilitates learners' analysis of L2 input and plays a role in their selection from among possible L2 organizational devices.
- *Extrinsic factors.* Progress beyond the basic variety is dependent both on "propensity" factors such as attitudes and motivation, and on "environmental" factors such as extent and nature of learners' exposure to L2. The everyday environment has more influence on progress at this level than does classroom learning.
- *Limits on processing.* Learners' current internalized interlanguage system must be ready to integrate new linguistic features or they cannot be put to immediate use in communication. Learners cannot attend to all communicative needs at the same time.

Klein and Perdue conclude:

The emerging picture is one of a *creative learner* who does not try, item by item and as closely as possible, to replicate the various structural features of the input offered by the social environment, but rather

> draws on some of the material from the input and uses it to construct his or her own language. This construction is permanently challenged – by the permanent influx of new input, on the one hand, and by various structural inadequacies, on the other. The extent to which the learner tackles these challenges, and the way in which it is done, depends on the particular learner and on the particular languages involved.
>
> (1993:38–39)

All of the functional approaches discussed here basically agree on the following:

- *what* is being acquired in SLA is a system for conveying meaning,
- *how* language is acquired importantly involves creative learner involvement in communication, and
- understanding of SLA processes is impossible if they are isolated from circumstances of use.

However, for many who take a functional approach, concern with communicative meaning and context does not preclude belief in the existence of an innate (and possibly language-specific) faculty as an explanatory mechanism, nor does it rule out concern with addressing the "logical problem," that learners somehow know much more about language than can be accounted for by the input they receive.

Chapter summary

Ability to use a language requires a complex of knowledge and skills that is automatically available to everyone when they acquire L1 as a child. However, a comparable level is seldom achieved in L2, even if learners expend a great deal of time and effort on the learning task. Different linguistic approaches have explored the basic questions about SLA with either an internal or an external focus of attention. Views on *what* is being acquired range from underlying knowledge of highly abstract linguistic principles and constraints, to ability to structure and convey information in a second language; views on *how* SLA takes place differ in their emphasis on continued innate UG capacity for language learning or on requirements of communicative processing; views on *why* some learners are more or less successful range from factors which are largely internal to language and mind, to explanations which involve communicative need and opportunity. Purely linguistic approaches, though, have largely excluded psychological and social factors. To gain an in-depth, "stereoscopic" understanding of L2 acquisition, we unquestionably need to view the process through more than one lens. The still-fuzzy nature of the present picture reflects the need for more refined theoretical models and additional research.

Activities

Questions for self-study

1. Briefly explain how language is (a) systematic (b) symbolic, and (c) social.
2. Match the following linguistic terms to their corresponding synonyms/definitions:

1. lexicon	a. word structure
2. phonology	b. grammar
3. morphology	c. vocabulary
4. syntax	d. sound system

3. Match the following theories with their central figures:

1. Contrastive Analysis	a. Krashen
2. Error Analysis	b. Dulay and Burt
3. Interlanguage	c. Corder
4. Morpheme Order Studies	d. Chomsky
5. Monitor Model	e. Lado
6. Universal Grammar	f. Selinker

4. When interlanguage development stops before a learner reaches target language norms, it is called _____.
5. As they can be understood in Chomsky's theory of Universal Grammar, what is the difference between linguistic performance and linguistic competence?
6. According to a Functionalist perspective, what is the primary purpose of language?
7. Choose which developmental levels from the framework of Information Organization the following sentences represent: (choose from Nominal Utterance Organization, Infinite Utterance Organization, Finite Utterance Organization)
   a. my manager say I get raise
   b. they have eaten
   c. girl nice but she not pretty
   d. later we talked
   e. he call his mother, say "come over"
   f. man wife restaurant

Active learning

1. Read the following scenarios and decide which aspect of language is mentioned in each instance. (Choose from lexicon, morphology, phonology, and syntax.)
   a. If we see the word "talks" alone, outside of any context, we could consider it to be composed of the root "talk" and a plural -s to make a noun (more than one talk/discussion/address), or we could consider it to be made up of the root "talk" and a third person -s to make a conjugated verb (like "he talks," "she talks," or "it talks").
   b. The English word "talk" has near synonyms like "speak," "say," "express," "shout," "yell," and "whisper."
   c. The English word "talk" can be pronounced differently depending on the geographical locations of the speakers.

d. In English, appropriate word order is Subject–Verb–Object, like saying "The man was talking to the child." In Japanese, word order is subject–object–verb, so one would say "The man the child to was talking."

2. Reread the section on the poverty-of-the-stimulus argument and make a definition of this theory in your own words. Do you think this theory holds true for SLA as well as for first language acquisition? Why or why not?

3. Make a timeline to indicate when the following theories or schools of thought were flourishing as they are discussed in this text. Think about the progression of theories. When they change, are they building upon old theories or rejecting them? Select one theory and explain how it builds upon or rejects those that came before it.

a. Contrastive Analysis	h. Mentalism
b. Behaviorism	i. Interlanguage
c. Structuralism	j. Morpheme Order Studies
d. Error Analysis	k. Monitor Model
e. Universal Grammar	l. Constructionism
f. Systemic Linguistics	m. Functional Typology
g. Function-to-form mapping	n. Information organization

4. Listen to someone who speaks your language non-natively and write down some ungrammatical sentences they have spoken. Using principles of Contrastive Analysis and the procedures of Error Analysis on pages 37–40 of this chapter, try to classify each error. Remember that there may not be a specific "right" answer available; these are just your predictions.

5. If you have studied a second language, what are some of the linguistic elements that have been most difficult for you to master (morphology, phonology, syntax, etc.)? Why do you think they have been harder?

6. Proponents of Universal Grammar believe that language ability is innate, whereas Functionalists believe that we develop language primarily because of a need to communicate. Which theory do you believe in? Why?

Further reading

Pinker, S. (1994). *The Language Instinct*. New York: William Morrow and Company.

A highly readable explanation of modern linguistics, wherein chapters 4, 5, and 6 include discussion of syntax, morphology, phonology, and the arbitrariness of language.

Yaguello, M. (1981/1998). *Language through the Looking Glass: Exploring Language and Linguistics*. Oxford: Oxford University Press.

Language through the Looking Glass provides explanation of the classical categories of linguistic study (phonology, morphology, semantics, syntax) in addition to treating the questions of arbitrariness and universality of language largely based upon literary examples from Lewis Carroll's *Alice in Wonderland*.

Selinker, L. (1992). *Rediscovering Interlanguage*. New York: Longman.

Selinker treats contrastive analysis and error analysis as the beginnings that eventually led to the concept of interlanguage. In addition, he presents work on fossilization and how the concept of interlanguage is used

today, as opposed to when it was coined in 1972. This is done with the overall goal of framing modern theory in the history of its field.

Baker, M. (2001). *The Atoms of Language*. New York: Basic Books.

Baker explains the concepts of Chomsky's Principles and Parameters theory in terms appropriate for a general audience.

Bialystok, E. & Hakuta, K. (1994). *In Other Words: The Science and Psychology of Second-Language Acquisition*. New York: Basic Books.

In Chapter 2, "Language," Bialystok and Hakuta clearly present much of the linguistic background (discussing Chomskyan and Functionalist perspectives) needed to understand the basic tenets of Second Language Acquisition as a field today.

Mitchell, R. & Myles, F. (2004). Functional/pragmatic perspectives on second language learning. *Second Language Learning Theories* (Second Edition) (pp. 100–20). London: Arnold.

This chapter offers an overview of several functionalist perspectives as they relate to L1 development and L2 learning. It also includes a brief section outlining the contributions of functionalism to the body of knowledge in the SLA field.