1 Introduction: Linguistics and Language Acquisition

Linguistics is concerned with discovering and defining the form and structure of human languages. All normal human children learn the language (or languages) that they hear around them. The study of language acquisition is the study of how and when children get a command of the thing linguistics sets out to define.

1.1 Knowledge of Language: Competence and Performance

An adult’s knowledge of the rules of his native language is largely unconscious knowledge. A speaker of English who has never taken a linguistics course will have no trouble saying that both (1a) and (1b) are grammatical and mean the same thing, and that (2b) is not a grammatical paraphrase of (2a):

(1a) Tony threw out the chair
(1b) Tony threw the chair out
(2a) Tony walked out the door
(2b) *Tony walked the door out

A speaker of English can make this judgement even if he has never thought about these types of sentences before; but without formal instruction it is very unlikely that the same speaker will be able to give an accurate account of why it is he finds (2b) ungrammatical.2

A native speaker’s unconscious, implicit knowledge of rules that underlie his judgements of grammaticality and meaning is called the speaker’s competence. A speaker’s competence is distinguished from a speaker’s performance, a term used to refer to actual events of language production and comprehension. The judgements that define a speaker’s competence result
from the speaker's introspection about whether a phrase or sentence is grammatical in the language, what the sentence or phrase means, etc. A speaker’s performance is a matter of how the speaker uses language in non-reflective speech and understanding. The study of linguistic performance involves the study of the mechanisms for speech production and comprehension; these mechanisms are in part independent of the speaker's knowledge of rules of grammar (the speaker's linguistic competence). The distinction between grammatical competence and performance is essentially the distinction drawn by Chomsky (1965, p. 4, and elsewhere). The need for the distinction is clearly illustrated by the fact that we sometimes make performance errors. Sentence (3) is an example of an actual speech error. The speaker intended to say 'You can't figure out what that is,' but has misplaced 'out', presumably through a slip-up involving the rule that allows (1b) as an alternate form of (1a):

(3) *You can't figure what that out is* (Garrett 1980, p. 188)

Yet the speaker who made this error would certainly judge (3) as ungrammatical. (The error in (3) violates a rule that prevents a word such as 'out' moving to a position inside an object phrase – the phrase ‘what that is’ in the example.)

### 1.2 Types of Linguistic Knowledge

A speaker's linguistic competence covers several distinct areas of grammatical knowledge. Rules of syntax determine the organization of words into phrases and sentences and will account for phenomena such as the different grouping of words in (1a) and (2a) and the alternation between (1a) and (1b). Rules of semantics express the range of permissible meanings for words, phrases and sentences. Rules of morphology (word formation) will account for the formation of new words by combining words together – as in 'rat-catcher' – and by adding and combining sub-units of words (morphemes). For example, the 'er' ending, as in 'catcher', forms nouns that express gentleness from existing verbs. Morphological rules also express 'agreement' between elements in the sentence: an '-s' ending on the verb corresponds to the difference between singular and plural subjects: 'the boy dances; the boys dance.' Rules of phonology express regularities about the pronunciation of words and phrases.
1.3 The Projection Problem

A child is exposed to spoken speech. On the basis of the phrases and sentences the child hears she somehow abstracts unconscious knowledge of the grammar of her first language. Children do not receive overt instruction in the rules of their language. The task of getting from a necessarily limited range of input (speech the child hears) to implicit knowledge of the complete adult grammar has been called the projection problem (Peters 1972) or the logical problem of language acquisition (Hornstein and Lightfoot 1981; Baker and McCarthy 1981).

1.4 Universal Grammar

Among linguists and many psychologists it is more or less the received opinion that a solution to the projection problem must involve a substantial innate component of linguistic knowledge. Linguists believe that the gap between the evidence available to the child (the speech she hears) and the linguistic system the child ultimately constructs (her competence grammar) is so great that language acquisition can only be accounted for if we assume that children work with knowledge of principles of grammar. The linguistic system involves rules too abstract and complex to be learnt without the aid of innate knowledge about the nature of the system. The general idea is that the child is equipped with a set of blueprints that define and limit what a human language can be like. This innate knowledge goes under the name of universal grammar. Knowledge of universal grammar will help the child both by providing a set of candidate analyses for the speech she hears and by steering her away from any number of possible rule systems that are compatible with the input but simply not found in human languages.

The role of universal grammar in language acquisition was influentially laid out and discussed by Chomsky (1965, ch. 1). There Chomsky sketched the distinction between formal universals and substantive universals. Substantive universals are the 'building blocks' of linguistic rules – the vocabulary in which linguistic rules must be stated. An example is the set of articulatory and/or acoustic specifications that characterize speech sounds (see chapter 2). Formal universals are restrictions on the types of operations linguistic rules perform and on the way in which linguistic rules interact. For example, syntactic rules generally pay attention to the hierarchical structure of phrases
rather than the simple linear and numerical order of words. Thus the alternation in (1a)/(1b) is one in which a word such as ‘out’ can occur either to the left or the right of an object phrase – a rule that was violated in (3). This alternation cannot be described by reference to simple linear order of words; a rule such as ‘‘Out” can occur directly after the verb ‘threw’ in the example or two words to the right’ would work for (1a) and (1b), but fail when it came to sentences such as ‘He threw out the new chair’ (‘He threw the new out chair’) and innumerable other cases.

Chomsky (1965) located his view of language development in the philosophical tradition of rationalism associated with Descartes and other philosophers of the seventeenth century. Chomsky’s view of the nature of universal grammar and its role in language learning stands in opposition to views of learning that rely on only very general mechanisms for learning, with the presumption of little or no innate knowledge of particulars of linguistic systems. In particular, it is in opposition to empiricist views of acquisition, associated with Hume and with present-day philosophers such as W. O. Quine. It is also in opposition, to a greater or lesser degree, to the ideas of twentieth-century psychologists such as B. F. Skinner and Jean Piaget. These philosophers and psychologists differ from Chomsky either by denying any innate mechanisms other than very general ones of data-sorting and generalization or by crediting the child with more detailed innate mechanisms only when these are common to language and other cognitive domains.

The basic concept of universal grammar and its role in language acquisition as Chomsky sketched it in 1965 has not changed. But there has been a change of emphasis in recent linguistic research towards the exact characterization of variation in linguistic systems. An important part of the theory of formal universals is the specification of distinctions that define a quite small number of language types and subtypes. Chomsky’s 1981 book *Lectures on Government and Binding* elaborates the notion of universal grammar as specifying parameters along which languages may vary. In some areas of grammar, universal grammar will allow a limited range of options from which languages can ‘pick’. An elementary example is basic word order. Languages either have relatively free word order or choose one of a small number of basic word orders for the order of subject, verb and object. Linguistic theory must characterize these different orders and the consequences the choice of a particular order has for other rules in the language. (This example is explored in more detail in chapter 4.) In this perspective, part of the child’s task is to work out which particular parameter settings are correct for her language.
1.5 Outline

The next four chapters deal with the acquisition of phonology, morphology, syntax and semantics. The idea that children’s grammatical development is guided by innate knowledge of principles of universal grammar is assumed to be correct, but is not critical to the points made in those chapters. Linguistic analyses are sketched as a framework for evaluating what children know (and do not know) about the grammar of the language they are learning. Each chapter is more or less independent and they need not be read in their order of appearance. The sixth chapter takes up more general questions about the nature of innate knowledge and learning mechanisms. The last chapter deals with development in performance mechanisms.

Notes

1 The convention in linguistics is to use an asterisk (*) to mark ungrammatical sentences.

2 The rule is based on sentence structure. In (1a) the word ‘out’ and the words ‘the chair’ do not form a phrase (structural unit) and their order can be permuted (1b); in (2a) ‘out the door’ is a phrase and the order of words cannot be permuted within that phrase (2b is ungrammatical).

Further Reading

Read Chomsky (1965, ch. 1) for discussion of the distinction between competence and performance and the philosophical background to Chomsky’s ideas on innateness. Chomsky (1986a) is a more recent exposition of those ideas and recent developments in grammatical theory. Bracken (1983, especially ch. 1) provides some interesting and very readable commentary on the history of ideas pertinent to innateness and language learning. Williams (1987) gives a clear summary of the implications for language learning of the shift in emphasis towards language variation and parameters in universal grammar. (Williams’s paper is also suggested reading for chapter 6.)