

1.3 What is a grammar?

Section 1.3 defines the terms ‘grammar’, ‘generative grammar’ and ‘mental grammar’.

A **grammar**, in the sense that the term will be used here, is a set of instructions for generating all the grammatical sentences of a particular language. These instructions specify how sentences are pronounced, what their syntax is, and what meaning is to be given to them. The instructions must be sufficiently general to assign the correct specifications to every sentence a speaker has ever heard or read, or may ever hear or read (including novel sentences), yet sufficiently restrictive to exclude all ungrammatical sentences. The reason for this is that native speakers of a particular language know intuitively which strings of words are grammatical and which are ungrammatical in their language. If a grammar is to be a model of human linguistic ability, it must be able to distinguish grammatical from ungrammatical sentences. To take an example, speakers of the variety known as ‘standard British English’ know that sentences like *My hair needs washing* are grammatical, but would exclude sentences like **My hair needs washed*. By contrast, speakers of one variety of Scots English would allow sentences like *My hair needs washed* and exclude sentences like **My hair needs washing*. The grammars of these varieties must be able to make distinctions like this.

A grammar which is able to generate all and only the grammatical sentences of a language is known as a **generative grammar**. A person who knows a particular language in a subconscious and automatic way, as native speakers do, has internalized a generative grammar for that language; we refer to this as a **mental grammar**. In this book we will concentrate on the syntactic part of mental grammars. Language learners, and in our case second language learners, must construct a mental grammar for the language that they are learning. Part of this task is establishing the correct specifications for properties like agreement, selection, adjacency and movement for the language in question.

1.4 Evidence that the mechanisms which underlie grammar-building are innate

Section 1.4 explains why it is unlikely that language acquisition is determined solely by the sentences one hears (or reads), and why many linguists believe that the principles and parameters of Universal Grammar are biologically determined.

One might wonder if the construction of a mental grammar is not just a question of learning by heart the grammatical sentences one is exposed to, and then creating new sentences by a kind of analogy: substituting different words for those in

sentences one has already encountered. Ungrammatical sentences would simply be those one has not encountered. It seems, however, that this 'input-determined' view is an unlikely account of language acquisition for several reasons. One is that native speakers know more about the syntactic properties of their language than is available in the sentences they are exposed to. Input is said to **under-determine** the mental grammar. For example, native speakers of English know that the subjects of embedded (subordinate) clauses can be turned into grammatical *wh*-phrases as in (3):

- 3a She later discovered **who** had written the note
 b **Who** did she later discover had written the note?

They also know that objects in embedded clauses can be turned into grammatical *wh*-phrases, as in (4):

- 4a She later discovered **what** her friend had written
 b **What** did she later discover her friend had written?

Finally, they know that when both the subject and the object are *wh*-phrases, (5a-b) are ungrammatical, and only (5c) is possible:

- 5a *What did she later discover who had written?
 b *Who did she later discover what had written?
 c Who did she later discover had written what?

In acquiring English they will have come across sentences like (3) and (4). Such sentences will tell them that *wh*-phrases can appear at the beginning of main clauses and embedded clauses. But how do they come to know that when two *wh*-phrases are present only a sentence of the type in (5c) is possible? It seems that this is a case where speakers of English know more about the syntactic structure of English than they have evidence for in the sentences they hear when they are acquiring the language; syntactic knowledge is underdetermined by the input.

Another example is provided by the pair of sentences (1d)–(2d) which were used to illustrate the distinction between grammatical and ungrammatical sentences in section 1.2. There is nothing obvious about the sentences in which *give* and *donate* appear that would tell a language learner that verbs like *give* allow double objects, while verbs like *donate* do not. There is no tag attached to *give* saying 'allows double objects' and another attached to *donate* saying 'does not allow double objects'. Learners will come across sentences like *He gave his stamp collection to Oxfam*, *He gave Oxfam his stamp collection*, and they will come across sentences like *He donated his stamp collection to Oxfam*. They will not come across ungrammatical sentences like **He donated Oxfam his stamp collection*.

But when they are learning verbs like *give* and *donate* what is to stop them from assuming that *donate*, which is very close in meaning to *give*, behaves in all respects like *give*?

The factors which a learner has to establish would seem to be these.² Firstly, verbs which belong to the ‘double object’ class must be (a) monosyllabic, like *give*, *send*, *serve*; or (b) if they are polysyllabic, they must either have stress on the first vowel, e.g. *’offer*, *’promise*, or on the second vowel, if the first vowel is [ə]: *a’ward*, *a’llow*. Secondly, for verbs to be members of the ‘double object’ class they must have as part of their meaning that one of the objects becomes the ‘possessor’ of the other as a result of the action. For example, in *They awarded James the prize*, ‘James’ becomes the possessor of ‘the prize’. These restrictions rule out double object constructions in cases like the following: **She explained me the problem* (versus *She explained the problem to me*): *explain* is polysyllabic, the stress falls on the second syllable and not the first (*ex’plain*), but the first vowel is not [ə]; **Mary drove Bristol her mother* (versus *Mary drove her mother to Bristol*): *drive* is monosyllabic, but the verb does not imply that *Bristol* becomes the possessor of *her mother*.

Underdetermination by the input of the grammatical knowledge that native speakers develop is one piece of evidence which has led many linguists to believe that the mechanisms which underlie grammar-building – the principles and parameters of Universal Grammar – are biologically determined. Human beings have them as part of their genetic endowment. A range of further evidence is provided by first language acquisition. First language acquisition has a number of well-known characteristics which are consistent with the view that the mechanisms which underlie grammar-building are innate (see, e.g., Goodluck 1991; Atkinson 1992; Crain and Lillo-Martin 1999):

- All infants with normal abilities have equal potential for acquiring a native language. That is, take any infant, put that infant in any speech community, and given normal exposure the child will acquire the language of the community as a native language. Such *uniformity* of success is quite surprising given the vagaries in the quality of input children around the world are likely to get, and is compatible with the view that they have stable innate mechanisms for grammar-building.
- Acquisition is *rapid*. Children typically acquire all the major structures of their language by the age of three to three-and-a-half, and by the age of five their understanding of complex and subtle structural distinctions is effectively adult-like. (Obviously at this age their topics of conversation are limited by experience.) Such rapidity would be surprising if children had to build mental grammars on the basis of input alone. It is less surprising if the mechanisms which underlie grammar-building are innate.

Acquisition is *effortless*. Children do not have to engage in any special learning to acquire language; interaction with native speakers and exposure to samples of language is enough to ensure acquisition. If the mechanisms which underlie grammar-building are genetically determined, the acquisition of syntax should be no more effortful than learning to walk.

Correction (and other kinds of information about ungrammatical sentences in a language) *does not seem to play a significant role* in the development of syntactic knowledge (Brown and Hanlon 1970; Morgan and Travis 1989). Again, if the mechanisms which underlie grammar-building are genetically determined, corrective feedback would largely be irrelevant to acquisition, just as advice about how to walk is irrelevant to the development of walking.

1.5 Investigating the nature of mental grammars independently of other types of knowledge

Section 1.5 explains why the view is taken in this book that properties of the mental grammar can be investigated independently of other mental knowledge. It is argued that syntax is not necessarily designed for making communication easier, and it is shown that mental grammars can be impaired while other mental processes remain intact, and vice versa.

The view taken here will be that the properties of mental grammars can be investigated independently of other kinds of knowledge which might be involved in the full use of a language (e.g., the knowledge involved in drawing inferences, indicating one's intentions, determining the appropriateness of certain kinds of language to context, and a range of other things). There are two reasons for making this assumption. The first is that there is evidence that mental grammars are distinct from other kinds of mental knowledge. Syntactic structure, for example, is not apparently directly reducible to other properties of human psychology. One might imagine that syntax evolved in order to make the task of communicating meanings easier. But this is far from evident. Presumably, when a speaker wants to convey a meaning to a hearer, the important thing is that he or she should do so effectively (so that the hearer understands the intended meaning), concisely (so that the hearer's attention is not lost) and with the minimum of effort (without using more words than are necessary to convey the intention).

Many syntactic properties seem to be quite independent of notions like 'effectiveness', 'concision' and 'economy of effort'. For example, consider adverb placement as illustrated in (6). English requires fairly strict adjacency between verbs and their objects, so that an adverb like *rarely* cannot come between them. To explain this restriction one might initially suggest some principle connected with

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