

CAMBRIDGE TEXTBOOKS IN LINGUISTICS

# Syntactic theory and the structure of English

A minimalist approach

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# SYNTACTIC THEORY AND THE STRUCTURE OF ENGLISH

A MINIMALIST APPROACH

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## PREFACE

The aim of this book is to provide an intensive introduction to recent work in syntactic theory (more particularly, to key concepts which are presupposed in works written within the broad framework of the minimalist program in the version outlined in Chomsky 1995b). There are six main features which mark this book out as different from other introductions to syntax currently available.

The first is that it does not presuppose any background knowledge of syntactic theory: it is suitable for use with true beginners, and does not presuppose that students have already done a course on generative syntax (though it is also suitable for false beginners who have already taken a course on an earlier model of syntax, and want to learn about more recent work).

The second is that it does not adopt a historical approach, or presuppose any historical knowledge (for example, there is no discussion of earlier work in the 1980s *government and binding* paradigm). Rather (for the most part), it deals directly with 1990s work within the *minimalist program*.

The third is that cross-linguistic variation is illustrated in terms of different varieties of English (e.g. Belfast English, Jamaican Creole, Child English, Shakespearean English, etc.), rather than in terms of different languages. Hence it does not make the unrealistic assumption that the reader knows (for example) Spanish, German, Arabic, Chinese and Chuckchee.

The fourth is that the book contains a substantial *workbook section* at the end of each chapter, containing exercise material designed to be used for class discussion, self-study or coursework assignments, with fully worked out *model answers* provided for key examples, and *helpful hints* for potentially problematic points. Where a particular exercise presupposes understanding of key concepts introduced in particular sections of the text, the relevant text sections are indicated in parentheses, after the exercise number.

The fifth is that there is an extensive *glossary* at the end of the overall book, intended to alleviate the terminological trauma of doing syntax.

The sixth is that the book is published alongside an abridged version called *Syntax: a Minimalist Introduction*. The two books cover roughly the same range of topics: the

## Preface

abridged version is intended for use as a nonintensive introduction on short syntax courses, and includes less theoretical and descriptive detail and less exercise material; the full-length version is intended for use as an intensive introduction on longer syntax courses, and contains twice as much text material and three times as much exercise material (as well as a slightly extended glossary and bibliography). The full-length version can be used as a follow-up to the abridged version (e.g. students who read the abridged version and get interested in the syntax of agreement projections can then turn to read the more detailed account given in chapter 10 of this book).

This book is divided into ten chapters, with each chapter (on average) comprising 25–35 pages of text (divided up into ten numbered sections) and 10–20 pages of exercise material. In general, chapters are written in such a way as to become progressively more difficult: the first half of the text of each chapter introduces key ideas in a relatively accessible way; the second half typically discusses rather more complex descriptive details or theoretical issues, and is often considerably more challenging. In addition, the chapters become cumulatively more complex as the book progresses; the last two chapters are particularly challenging and involve a far higher level of abstraction than the others.

Because each new chapter serves to introduce a new set of ideas, you will find that earlier analyses are often revised in later chapters. Thus, the book introduces students to a range of different analyses of particular constructions (e.g. the analysis of double-object constructions presented in chapter 9 is substantially revised in chapter 10).

The extensive *workbook section* at the end of each chapter is designed as an integral part of the text: the *model answers* provided in some cases extend the analysis presented in the text, and are thus an essential part of the ‘learning experience’ provided by the book. As Sam Featherston remarked to me after teaching an earlier version of the book to a group of students: ‘I wish I’d told the students to read all the *model answers* even if they don’t tackle the relevant exercises – they contain a lot of important additional information.’

The *glossary* at the end of the book provides simple illustrations of how key terms (and abbreviations) are used – not just theory-specific technical terms like *enlightened self-interest*, but also more basic general terms such as *subject*.

I am grateful to Laura Rupp, Sam Featherston and Martin Atkinson (Essex), and Jon Erickson (Cologne) for helpful comments on an earlier draft of this manuscript; and above all to the series editor Neil Smith (University College London) for his patient and good-humoured comments on numerous ((re-)re-)revised drafts of the manuscript.

This book is dedicated to my father and my sister (who both died before I had time to thank them for all they did for me) and to my mother for battling so bravely against bereavement and blindness over the past couple of years, before finally passing away on 16 February 1997.

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# 1

## Principles and parameters

### 1.1 Overview

The aim of this chapter is to outline contemporary ideas on *the nature of grammar* and *the acquisition of grammar*. The approach adopted here is that associated with the **principles-and-parameters** model developed by Noam Chomsky during the 1980s and 1990s, in works ranging from his 1981 book *Lectures on Government and Binding* to his 1995c book *The Minimalist Program*.

### 1.2 Grammar

**Grammar** is traditionally subdivided into two different but inter-related areas of study – **morphology** and **syntax**. Morphology is the study of how words are formed out of smaller units (traditionally called *morphemes*), and so addresses questions such as ‘What are the various component parts (= morphemes) of a word like *antidisestablishmentarianism*, and what kinds of principles determine the ways in which the parts are combined together to form the whole?’ Syntax is concerned with the ways in which words can be combined together to form phrases and sentences, and so addresses questions like ‘Why is it OK in English to say *Who did you see Mary with?*, but not OK to say *\*Who did you see Mary and?*’ (A star in front of an expression means that it’s ungrammatical.) ‘What kinds of principles determine the ways in which we can and cannot combine words together to form phrases and sentences?’

However, grammar is traditionally concerned not just with the principles which determine the *formation* of words, phrases and sentences, but also with the principles which govern their *interpretation* – i.e. with the principles which tell us how to *interpret* (= assign meaning to) words, phrases and sentences. For example, any comprehensive grammar of English will specify that compound words like *man-eater* and *man-made* have very different interpretations: in compounds like *man-eater*, the word *man* is traditionally said to have a *patient* interpretation, in the sense that man is the patient/hapless victim on whom the act of eating is going to be performed; by contrast, in compounds like *man-made*, the word *man* is said to have an *agent* interpretation, in the sense that *man* is the agent responsible for the act of making. Thus, structural aspects of meaning are traditionally said to be part of the domain of grammar. We

might therefore characterize grammar as the study of *the principles which govern the formation and interpretation of words, phrases and sentences*. In terms of the traditional division of grammar into morphology and syntax, we can say that morphology studies the formation and interpretation of words, whereas syntax is concerned with the formation and interpretation of phrases and sentences.

In a fairly obvious sense, any native speaker of a language can be said to know the grammar of his or her native language. After all, native speakers clearly know how to *form and interpret words, phrases and sentences in their native language*. For example, any native speaker of English can tell you that the negative counterpart of *I like syntax* is *I don't like syntax*, and not e.g. *\*I no like syntax*: thus, we might say that native speakers know how to negate sentences in their language. However, it is important to emphasize that this grammatical knowledge is *tacit* (i.e. subconscious) rather than *explicit* (i.e. conscious): so, it's no good asking a native speaker of English a question such as 'How do you form negative sentences in English?', since human beings have no conscious awareness of the psychological processes involved in speaking and understanding a language. To introduce a technical term, we might say that native speakers have grammatical **competence** in their native language: by this, we mean that they have tacit knowledge of the grammar of their language – i.e. of how to form and interpret words, phrases and sentences in the language.

In work dating back to the 1960s, Chomsky has drawn a distinction between *competence* (the fluent native speaker's tacit knowledge of his language) and **performance** (what people actually say or understand by what someone else says on a given occasion). Competence is 'the speaker-hearer's knowledge of his language', while performance is 'the actual use of language in concrete situations' (Chomsky 1965, p. 4). Very often, performance is an imperfect reflection of competence: we all make occasional slips of the tongue, or occasionally misinterpret what someone else says to us. However, this doesn't mean that we don't know our native language, or don't have competence (i.e. fluency) in it. Misproductions and misinterpretations are *performance errors*, attributable to a variety of performance factors like tiredness, boredom, drunkenness, drugs, external distractions, and so forth. Grammars traditionally set out to tell you what you need to know about a language in order to have native speaker competence in the language (i.e. to be able to speak the language like a native speaker): hence, it is clear that grammar is concerned with *competence* rather than *performance*. This is not to deny the interest of *performance* as a field of study, but merely to assert that performance is more properly studied within the different – though related – discipline of psycholinguistics, which studies the psychological processes underlying speech production and comprehension. It seems reasonable to suppose that competence will play an important part in the study of performance, since you have to understand what native speakers tacitly know about their language before you can study the effects of tiredness, drunkenness, etc. on this knowledge.

If we say that grammar is the study of grammatical competence, then we are implicitly taking a *cognitive* view of the nature of grammar. After all, if the term *grammatical competence* is used to denote what native speakers tacitly know about the grammar of their language, then grammar is part of the more general study of cognition (i.e. human knowledge). In the terminology adopted by Chomsky (1986a, pp. 19–56), we're studying language as a cognitive system *internalized* within the human brain/mind; our ultimate goal is to characterize the nature of the internalized linguistic system (or *I-language*, as Chomsky terms it) which enables humans to speak and understand their native language. Such a cognitive approach has obvious implications for the descriptive linguist who is interested in trying to describe the grammar of a particular language like English. What it means is that in devising a grammar of English, we are attempting to describe the grammatical knowledge possessed by the fluent native speaker of English. However, clearly this competence is not directly accessible to us: as noted above, you can't ask native speakers to introspect about the nature of the processes by which they produce and understand sentences in their native language, since they have no conscious awareness of such processes. Hence, we have to seek to study competence *indirectly*. But how?

Perhaps the richest vein of readily available evidence which we have about the nature of grammatical competence lies in native speakers' intuitions about the *grammaticality* and *interpretation* of words, phrases and sentences in their native language. For example, preschool children often produce past tense forms like *goed*, *comed*, *seed*, *buyed*, etc. and any adult native speaker of (Modern Standard) English will intuitively know that such forms are ungrammatical in English, and will know that their grammatical counterparts are *went*, *came*, *saw* and *bought*. Similarly, any native speaker of English would intuitively recognize that sentences like (1a) below are grammatical in English, but that sentences like (1b) are ungrammatical:

- (1) (a) If you don't know the meaning of a word, look it up in a dictionary
- (b) \*If you don't know the meaning of a word, look up it in a dictionary

(Recall that a star in front of an expression means that it is ungrammatical; by convention, any expression which does not have a star in front of it is grammatical; note that stars go *before* – not *after* – ungrammatical words, phrases or sentences.) Thus, we might say that *intuitions about grammaticality* form part of the native speaker's grammatical competence. Equivalently, we can say that native speakers have the ability to make *grammaticality judgments* about words, phrases and sentences in their native language – i.e. the ability to judge whether particular expressions are grammatical or ungrammatical within their native language. An interesting implication of this fact is that if grammars model competence, a grammar of a language must tell you not only what you *can* say in the language, but also what you *can't* say, since native speaker competence includes not only the ability to make the judgment that certain types of

sentence (e.g. (1a) above) are grammatical, but also the ability to judge that others (e.g. (1b) above) are ungrammatical. Indeed, much of contemporary work in syntax is concerned with trying to explain why certain types of structure are ungrammatical: it would perhaps not be too much of an exaggeration to say that whereas traditional grammars concentrate on *grammaticality* (i.e. on telling you how to form grammatical phrases and sentences), work on grammar within the Chomskyan paradigm tends to focus much more on explaining *ungrammaticality* (i.e. on explaining why certain types of structures are ungrammatical).

A second source of introspective evidence about the nature of grammatical competence relates to native speaker intuitions about the *interpretation* of words, phrases and sentences in their native language. For example, any native speaker of English can tell you that a sentence such as:

- (2) Sam loves you more than Jim

is ambiguous, and has two different interpretations which can be paraphrased as in (3a–b) below:

- (3) (a) Sam loves you more than Jim loves you  
(b) Sam loves you more than Sam loves Jim

So, it seems that the native speaker's grammatical competence is reflected not only in intuitions about *grammaticality*, but also in intuitions about *interpretation*.

### 1.3 Criteria of adequacy

Given that a grammar of a language is a model of the competence of a fluent speaker of the language, and given that competence is reflected in intuitions about grammaticality and interpretation, an important criterion of adequacy for a grammar of any natural language is that of *descriptive adequacy*. We can say that a grammar of a given language is *descriptively adequate* if it correctly describes whether any given string (i.e. sequence) of words in a language is or isn't grammatical, and also correctly describes what interpretation(s) the relevant string has. So, for example, a grammar of English would be descriptively adequate in the relevant respects if it told us that sentences like (1a) above are grammatical in English but those like (1b) are ungrammatical, and if it told us that sentences like (2) are ambiguous as between the two interpretations paraphrased in (3a) and (3b): conversely, our grammar would be descriptively inadequate if it wrongly told us that both the sentences in (1a–b) are grammatical in English, or that (2) can be paraphrased as in (3a), but not as in (3b).

While the concern of the descriptive linguist is to devise grammars of particular languages, the concern of the theoretical linguist is to devise a *theory of grammar*. A theory of grammar is a set of hypotheses about the nature of possible and impossible grammars of *natural* (i.e. human) languages: hence, a theory of grammar answers

questions like: 'What are the inherent properties which natural language grammars do and don't possess?' Just as there are *criteria of adequacy* for grammars, so too there are a number of criteria which any adequate theory of grammar must satisfy. One obvious criterion is *universality*, in the sense that a theory of grammar should provide us with the tools needed to describe the grammar of *any* natural language adequately; after all, a theory of grammar would be of little interest if it enabled us to describe the grammar of English and French, but not that of Swahili or Chinese. So, what we mean by saying that *universality* is a criterion of adequacy for a theory of grammar is that a theory of grammar must enable us to devise a descriptively adequate grammar for every natural language: in other words, our ultimate goal is to develop a *theory of Universal Grammar*. In the linguistic literature, it is a standard convention to abbreviate the term *Universal Grammar* to *UG*, and hence to talk of devising a *theory of UG*.

However, since the ultimate goal of any theory is *explanation*, it is not enough for a theory of Universal Grammar simply to list sets of universal properties of natural language grammars; on the contrary, a theory of UG must seek to *explain* the relevant properties. So, a key question for any adequate theory of UG to answer is: 'Why do natural language grammars have the properties they do?' The requirement that a theory should *explain* why grammars have the properties they do is conventionally referred to as the criterion of *explanatory adequacy*.

Since the theory of Universal Grammar is concerned with characterizing the properties of *natural* (i.e. human) language grammars, an important question which we want our theory of UG to answer is: 'What are the essential defining characteristics of natural languages which differentiate them from, for example, artificial languages like those used in mathematics and computing (e.g. Basic, Prolog, etc.), or from animal communication systems (e.g. the tail-wagging dance performed by bees to communicate the location of a food source to other bees)?' It therefore follows that the descriptive apparatus which our theory of Universal Grammar allows us to make use of in devising natural language grammars must not be so powerful that it can be used to describe not only natural languages, but also computer languages or animal communication systems (since any such excessively powerful theory wouldn't be able to pinpoint the criterial properties of natural languages which differentiate them from other types of communication system). In other words, a third condition which we have to impose on our theory of language is that it be *maximally restrictive*: that is, we want our theory to provide us with technical devices which are so *constrained* in their expressive power that they can only be used to describe natural languages, and are not appropriate for the description of other communication systems. Any such restrictive theory would then enable us to characterize the very essence of natural language.

The neurophysiological mechanisms which underlie linguistic competence make it possible for young children to *acquire* language in a remarkably short period of time: children generally start to form elementary two-word structures at around 18 months of

age, and by the age of 30 months have acquired a wide range of different grammatical constructions and are able to produce sentences of considerable grammatical complexity. Accordingly, a fourth condition which any adequate linguistic theory must meet is that of *learnability*: it must provide grammars which are learnable by young children in a relatively short period of time.

A related requirement is that linguistic theory should provide grammars which make use of the *minimal* theoretical apparatus required to provide a descriptively adequate characterization of linguistic phenomena: in other words, grammars should be as simple as possible. Much of the work in syntax in the 1980s involved the postulation of ever more complex structures and principles: as a reaction to the excessive complexity of this kind of work, Chomsky in the 1990s has made **minimalism** (i.e. the requirement to minimize the theoretical and descriptive apparatus used to describe language) the cornerstone of linguistic theory. The *minimalist program for linguistic theory* which he has been developing (cf. Chomsky 1995c) is motivated to a large extent by the desire to minimize the acquisition burden placed on the child, and thereby maximize the learnability of natural language grammars.

#### 1.4 Language faculty

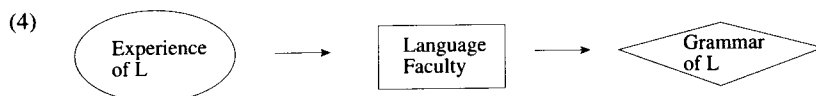
Our brief discussion of learnability leads us naturally to consider the goal of developing a *theory of the acquisition of grammar*. An acquisition theory is concerned with the question of how children acquire grammars of their native languages. One of the most fundamental questions which an acquisition theory seeks to answer is: 'How and when do children develop an initial grammar of the language they are acquiring, and what are the subsequent stages they go through in their grammatical development?'

Children generally produce their first recognizable word (e.g. *Mama* or *Dada*) by the age of 12 months. For the next 6 months or so, there is little apparent evidence of grammatical development, although the child's productive vocabulary typically increases by about three words a month until it reaches around a couple of dozen words at age 18 months. Throughout this *single-word stage*, children's utterances comprise single words spoken in isolation: e.g. a child may say *Apple* when reaching for an apple, or *Up* when wanting to get on her mother's knee. During the single-word stage, there is no evidence of the acquisition of grammar, in that children do not make productive use of *inflections* (e.g. they don't add the plural *+s* ending to nouns, or the past tense *+d* ending to verbs), and don't productively combine words together to form two- and three-word utterances. At around the age of 18 months, we find the first signs of the acquisition of grammar: children start to make productive use of inflections (e.g. using plural nouns like *doggies* alongside the singular form *doggy*, and participles like *going* alongside the uninflected verb form *go*), and similarly start to produce elementary two- and three-word utterances such as *Want Teddy*, *Eating cookie*, *Dolly go bed*, etc. From this point on, there is a rapid expansion in their grammatical

development, so that by the age of around 30 months, children have typically acquired most of the inflections and core grammatical constructions used in English, and are able to produce adultlike sentences such as *Where's Mummy gone? What's Daddy doing? Can we go to the zoo, Daddy?* etc. (though of course occasional morphological or syntactic errors occur – cf. e.g. *We goed there with Daddy, What we can do?* etc.).

Thus, the central phenomenon which any theory of language acquisition must seek to explain is this: how is it that after a long drawn-out period of many months in which there is no obvious sign of grammatical development, at around the age of 18 months there is a sudden *spurt* as multiword speech starts to emerge, and a phenomenal growth in grammatical development then takes place over the next twelve months? This *uniformity* and (once the spurt has started) *rapidity* in the pattern of children's linguistic development are the central facts which a theory of language acquisition must seek to explain. But how?

Chomsky maintains that the most plausible explanation for the uniformity and rapidity of first language acquisition is to posit that the course of acquisition is determined by a biologically endowed innate *language faculty* (or *language acquisition program*, to borrow a computer software metaphor) within the brain, which provides children with a (genetically transmitted) algorithm (i.e. set of procedures) for developing a grammar, on the basis of their linguistic *experience* (i.e. on the basis of the speech input they receive). The way in which Chomsky visualizes the acquisition process can be represented schematically as in (4) below (where *L* is the language being acquired):



Children acquiring a language will observe people around them using the language, and the set of expressions in the language which the child hears – and the contexts in which they are used – in the course of acquiring the language constitute the child's linguistic *experience* of the language. This experience serves as input to the child's *language faculty*, which provides the child with a procedure for (subconsciously) analysing the experience in such a way as to devise a *grammar* of the language being acquired. Thus, the input to the language faculty is the child's experience, and the output of the language faculty is a grammar of the language being acquired.

The hypothesis that the course of language acquisition is determined by an innate language faculty is known popularly as the *innateness hypothesis*. Chomsky maintains that language acquisition is an activity unique to human beings, and different in kind from any other type of learning which human beings experience, so that learning a language involves mental processes entirely distinct from those involved in e.g. learning to play chess, or learning to ride a bicycle.



## *Principles and parameters*

One piece of evidence which Chomsky adduces in support of positing an innate language faculty unique to humans is that language acquisition is a *species-specific* ability, possessed only by human beings: cf.

Whatever evidence we do have seems to me to support the view that the ability to acquire and use language is a species-specific human capacity, that there are very deep and restrictive principles that determine the nature of human language and are rooted in the specific character of the human mind. (Chomsky 1972a, p. 102)

Moreover, he notes, language acquisition is an ability which all humans possess, entirely independently of their general intelligence: cf.

Even at low levels of intelligence, at pathological levels, we find a command of language that is totally unattainable by an ape that may, in other respects, surpass a human imbecile in problem-solving activity and other adaptive behavior. (Chomsky 1972a, p. 10)

In addition, the apparent *uniformity* in the pattern of acquisition suggests that children have genetic guidance in the task of constructing a grammar of their native language: cf.

We know that the grammars that are in fact constructed vary only slightly among speakers of the same language, despite wide variations not only in intelligence but also in the conditions under which language is acquired. (Chomsky 1972a, p. 79)

Moreover, there is similar *uniformity* in the types of grammars developed by different speakers of a given language: cf.

Different speakers of the same language, with somewhat different experience and training, nonetheless acquire grammars that are remarkably similar. (Chomsky 1972a, p. 13)

Furthermore, the *rapidity* of acquisition (once the *grammar spurt* has started) also points to genetic guidance in grammar construction:

Otherwise it is impossible to explain how children come to construct grammars . . . under the given conditions of time and access to data. (Chomsky 1972a, p. 113)

(The sequence 'under . . . data' means simply 'in so short a time, and on the basis of such limited linguistic experience'.) What makes the *uniformity* and *rapidity* of acquisition even more remarkable is the fact that the child's linguistic experience is often *degenerate* (i.e. imperfect), since it is based on the linguistic performance of adult speakers, and this may be a poor reflection of their competence: cf.

A good deal of normal speech consists of false starts, disconnected phrases, and other deviations from idealized competence. (Chomsky 1972a, p. 158)