

# **Syntactic Theory**

a unified approach

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*for Ewa and Stefan*

# Preface

Why do we need a new textbook on syntactic theory? One answer is that new textbooks are always necessary in a field that is alive and developing, and syntactic theory is undoubtedly such a field. There is, however, a more specific answer that can be given in the present context. This is that there are no textbooks of the kind that I have tried to produce here. In this book, I attempt to introduce a body of ideas that are at the heart of more or less all approaches to syntax and to consider how they have been developed within two broad frameworks: the Government-Binding theory (GB) and Phrase Structure Grammar (PSG), by which I mean Generalized Phrase Structure Grammar and Head-driven Phrase Structure Grammar. The book introduces the two approaches more or less simultaneously. Each chapter focusses on a specific theoretical topic, and considers what both GB and PSG have to say about it. Other textbooks are either concerned with just one approach, or they look at a number of approaches, one at a time. The first type is unsatisfactory if one thinks that there is more than one approach that merits the student's attention. The second type is likely to make the various approaches seem more different than they really are and to give the impression that they are neat self-contained packages of ideas which you have to 'buy' in toto or not at all.

The book is an introduction to current syntactic theory and refers extensively to the recent literature. It places considerable emphasis, however, on ideas which antedate the emergence of current approaches and which are likely to remain when current approaches have been revised in major ways or abandoned. The organization of the book is designed to highlight these ideas. Most of the chapters focus on one of them. For example, chapter 10 highlights the idea that there is a class of raising sentences with a specific array of properties. This idea is unlikely to be abandoned even if both GB and PSG analyses of such sentences prove to be untenable.

I say little here about the history of the ideas that I am concerned with. The history of syntactic theory is a topic of considerable interest, but I do not think that knowing how the ideas developed necessarily makes it any easier to understand them. Moreover, there are good discussions of the history elsewhere, notably Newmeyer (1986). I do, however, make a point of indicating when and where various ideas emerged. I think it is important to give some sense that syntactic theory has a history, and that it did not appear fully formed the day before yesterday. Of course, readers who are not interested in these matters can ignore all references to them.

Each chapter in the book includes notes and exercises. The notes are not just an adornment to the basic text. They qualify and elaborate on the discussion in the text, provide further information and raise further issues, and give relevant

references. Many of the references are not at all easy to read. I make a point, however, of referring to other textbooks – I do not assume that this is the only syntax textbook that anyone could wish to read. The exercises reinforce the points made in the text and in some cases raise various questions. The book also includes a glossary bringing together the most important terms used.

The book introduces a lot of ideas in a relatively small space, and is therefore quite demanding. However, it presupposes very little knowledge of syntax. Essentially, all I assume is that the reader understands that linguistics is concerned with description and not prescription, and that she or he has some acquaintance with the traditional parts of speech. Of course, the book will be more accessible for readers with more extensive knowledge of syntax, but further knowledge is not strictly necessary.

I am grateful to a number of people for the help that they have given me in connection with this book. I am particularly grateful to Dick Hudson (University College London), who provided detailed comments on a draft of the book, and to Andrew Radford (University of Essex), who commented at length on most of the chapters. I have also had valuable comments from Geoff Horrocks (University of Cambridge). The comments that I have received have led to many improvements in the text. All remaining shortcomings are my responsibility. I am also grateful to the staff of Edward Arnold for their assistance, encouragement and patience. Finally, I am grateful to my wife, Ewa Jaworska, for encouragement and for various kinds of assistance.

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# 1

## Preliminaries

### 1.1 Introduction

There are many aspects of language that one might be interested in. One might study the systems of sounds that they employ, the way language reflects the structure of society, or the way it is used in literature or in propaganda of various kinds. Syntactic theory is concerned with the ways words are combined to form sentences. This might sound like a dry and unglamorous study and it has to be admitted that some people find it so. It is clear, however, that it is full of intellectual challenges. It is also a potential source of insight into the human mind. It is even potentially useful. In this chapter, we will consider a number of preliminary matters, and then in the next chapter, we will begin the real work.

### 1.2 The Goals of syntactic theory

Syntactic theory, as the term is used here, has its origins in Noam Chomsky's 1957 book *Syntactic Structures* and is widely seen as the heart of modern theoretical linguistics. It can be said to have two goals. On the one hand, it is concerned to develop grammars, i.e. precise descriptions of the syntax of various languages, the ways in which they combine words to form sentences. On the other hand, it aims to develop a general framework for specifying what languages have in common in this area and how they can vary. This is often known as a theory of universal grammar.

One point that should be stressed immediately is that the two goals are not pursued separately. It is not a matter of first describing individual languages and then developing a theory of universal grammar. Rather, syntacticians are always concerned both with individual languages and with language in general. Investigations of individual languages are guided by ideas about what languages are like and how they should be described and in turn contribute towards the evaluation and refinement of these ideas.

The second of these aims entails a rejection of the view expressed by one linguist in the 50s that 'languages can vary without limit.' (Joos, 1957). If languages really could vary without limit, there could be no theory of universal grammar. We could have a theory of English syntax, a theory of Welsh syntax, and so on, but no general theory. It is in fact fairly clear that languages do not vary without limit in their syntax. Differences between languages which seem massive to the learner of foreign language can be seen to be rather minor when

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one has a sophisticated descriptive framework that can identify all the similarities.

One thing that is clear is that there are all sorts of situations that do not occur in languages. For example, it is clear that there are no languages in which questions are formed from statements by turning the whole statement back to front. In other words, there are no languages where the question related to (1) would be (2).

- (1) The boy ate the beefburger.
- (2) Beefburger the ate boy the?

Perhaps more interestingly, it is fairly clear that there are no languages where questions are formed from statements by moving the second word of the statement to the front. English might seem to be such a language if one looks at a pair of sentences like the following:

- (3) Stefan will be here.
- (4) Will Stefan be here?

Notice, however, that the question related to (5) is (7) not (6).

- (5) The boy will be here.
- (6) \* Boy the will be here?
- (7) Will the boy be here?

Following standard practice, I use an asterisk in (6) to mark an ungrammatical string.

Of course, it sometimes happens that things that were thought to be impossible do in fact occur. For example, it was widely assumed in the 70's that there are no languages whose normal order is object-verb-subject or object-subject-verb, no languages, that is, where the meaning of (1) is expressed by a sentence like (8) or a sentence like (9).

- (8) The beefburger ate the boy.
- (9) The beefburger the boy ate.

In the late 70s, however, it became clear that there are languages with these word orders, especially in the Amazon basin.

There is perhaps a moral here. In general, it seems likely that proposed universals which relate to relatively concrete and superficial features of languages are unlikely to be tenable. Viable universals are likely to be rather abstract. The various concepts and principles discussed in the following chapters are plausible candidates for universals. It may be, however, that they take a somewhat different form in different languages. Hence, as Chomsky has stressed, syntactic theory should not just seek a body of universal principles but should also try to identify the parameters within which these principles can vary.

A final point that we should note here is that the following pages will largely ignore languages other than English. The ideas that we will be concerned with will generally be illustrated with data from English. This is simply because English examples will be more accessible to most readers than examples in other languages.

### 1.3 Languages

We have used the term 'language' a number of times in the preceding discussion. It is appropriate, then, to ask what exactly a language is. When we use the term in ordinary conversation, we normally think of something that is shared by a group of people, possibly a very large group. This concept is quite problematic, however. Suppose we say we want to describe the English language using this term in its ordinary sense. What exactly do we describe? The English spoken by a Yorkshire miner is not the same as the English spoken by a Surrey stockbroker. Similarly, the English spoken in the West Indies is different from the English spoken in Australia. If we say we are interested in all varieties of English, what exactly do we count as a variety of English? Did Chaucer speak a variety of English or a variety of something else, say Middle English?

Because of problems like these, many linguists prefer to see a language as something essentially individual. Individuals have languages and in all probability no two individuals have exactly the same language if only because no two individuals use exactly the same set of words. We still need, however, to say what a language is. In *Syntactic Structures*, Chomsky defines a language as a set of sentences. Building on this, we might suggest the following:

- (10) A language is the set of sentences that some speaker uses.

There is, however, no fixed set of sentences that an individual uses over and over again. Speakers regularly use new sentences that they have never used before. We might, then, replace (10) by the following:

- (11) A language is the set of sentences that some speaker could use.

There are, however, many sentences which a speaker, for non-linguistic reasons, could never use. Presumably, no one is going to use a sentence over a thousand words long. That, however, is not a linguistic matter. Rather, it has to do with the limitations of human powers of concentration, which are seen in all sorts of human behaviour and not just in the use of language. In view of this, we might revise (11) as follows:

- (12) A language is the set of sentences that some speaker could use if no non-linguistic factors were operative.

This is probably a definition that many syntacticians would be happy with. Chomsky, however, has advanced a rather different conception of language in recent work. We can formulate this conception as follows:

- (13) A language is the set of rules and principles in the mind of a speaker specifying the set of sentences which he/she could use if non-linguistic factors were operative.

Chomsky (1985) calls language as defined in (12) E-language (externalized language) and language as defined in (13) I-language (internalized language) and argues that it is the latter that syntacticians should study. In his earlier work, particularly Chomsky (1965), he uses the term linguistic competence in essentially the same sense as I-language.

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On the face of it, these are two very different conceptions of language. It is not clear, however, that it really matters as far as the practice of syntactic theory is concerned which conception one assumes. Chomsky and his critics disagree on many details of syntactic theory, but it is doubtful whether any of these differences stem from the fact that they subscribe to different conceptions of language.

One point to note about Chomsky's conception of a language is that it makes syntactic theory a branch of psychology, and especially of cognitive psychology, the psychology of systems of knowledge and belief. Chomsky in fact argues not just that a language is a body of rules and principles in the mind of the speaker, but also that universal grammar is a body of principles and parameters which is an innate component of the mind. Thus, for Chomsky, syntactic theory is ultimately about the human mind. But even if one isn't prepared to go all the way with Chomsky, it is reasonable to assume that syntactic theory can offer some insight into the workings of the human mind. For many people, this is a major attraction of syntactic theory.

### 1.4 Acceptability and Grammaticality

Whichever view of language we adopt, it is necessary to specify what sentences a speaker could use if no non-linguistic factors were operative, or, as we will say, what sentences are grammatical for the speaker. We do this by eliciting speaker's judgements or intuitions about sentences. These intuitions establish that certain sentences are acceptable for unacceptable. Acceptability, however, is not the same thing as grammaticality. This is mainly because sentences can be unacceptable for a variety of reasons.

Sentences can be unacceptable because they cause problems for the perceptual mechanisms. We can look first at the following example:

(14) The horse raced past the barn fell.

This is unacceptable, but it is clear that this is because it leads the perceptual mechanisms astray. To use the standard terminology, it is a 'garden path' sentence. This view is supported by the fact that the very similar sentence (15) is perfectly acceptable.

(15) The horse ridden past the barn fell.

Notice also that (14) is a reduced version of (16) in essentially the same way as (15) is a reduced version of (17).

(16) The horse which was raced past the barn fell.

(17) The horse which was ridden past the barn fell.

We can also consider the following:

(18) The man the girl the boy knows likes is here.

This too is unacceptable, but it is clear that this is because it is just too complex for the perceptual mechanisms. This view is supported by the fact that the related sentences in (19) and (20) are perfectly acceptable.

- (19) The man the girl likes is here.  
 (20) The girl the boy knows likes the man.

Sentences can also be unacceptable because they involve contradictions or because they conflict with our views of how the world is, (21) illustrate the first of these possibilities and (22) the second.

- (21) Stefan succeeded in seeing Maja but he didn't see her.  
 (22) My lawnmower thinks that I don't like it.

Thus, there are a variety of ways in which sentences can be unacceptable without being ungrammatical.

All the unacceptable examples that we will consider in subsequent discussion will be ones which as far as anyone knows are unacceptable because they are ungrammatical. It is important, however, to remember when looking at data that sentences can be unacceptable without being ungrammatical.

A natural question to ask here is whether sentences can be acceptable when they are ungrammatical. It is questionable whether there are any such sentences. It has been suggested, however, that the phrase in (23) is ungrammatical although it is acceptable.

- (23) a not unintelligent person

*Not* cannot generally combine with a pre-nominal adjective, but it can combine with the adverb *very*, as the following illustrate:

- (24) \* a not intelligent person  
 (25) a not very intelligent person

It is suggested that speakers hear an example like (23) as if it involved an adverb like *very* and not the prefix *-un* and find it acceptable although it violates the rules they have internalized.

## 1.5 Syntactic theory and traditional grammar

Although syntactic theory, as the term is used here, dates from 1957, this does not mean that it is completely unlike earlier work on syntax – what we might call 'traditional grammar'. There are, however, some important differences. It is appropriate to look briefly at these differences here. Subsequent chapters will flesh out the picture.

Firstly, syntactic theory places great emphasis on the precise specification of analyses. It is often referred to as 'generative', which means precise and explicit. In this it is quite different from traditional grammar, which is characterized by a general lack of precision. The stress on precision is really just a matter of good scientific practice. If an analysis is not precisely formulated, we cannot determine what exactly it says. And if we cannot determine what exactly it says, we cannot evaluate it. In practice, the stress on precision means that syntacticians use various kinds of formalism, something largely absent from traditional grammar. For example, instead of the statement in (26), a syntactician might use the formula in (27).

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(26) A sentence can consist of a noun phrase followed by a verb phrase.

(27)  $S \rightarrow NP VP$

As a result, work in syntactic theory has a somewhat mathematical appearance – at least to those with little background in mathematics.

Secondly, there is a stress in syntactic theory on the justification of analyses. This means that syntacticians seek to demonstrate that their analyses work well and especially that they work better than the obvious alternatives. In contrast, in traditional grammar, constructions are often analyzed in a particular way for no better reason than that they have always been analyzed that way.

Finally, as we have already indicated, syntactic theory is unlike traditional grammar in being concerned not just to describe specific languages but also to develop a general theory. It means that other languages are always potentially relevant when one is describing a particular language.

### 1.6 The usefulness of syntactic theory

It is probably true to say that most syntacticians are interested in syntax for its own sake and not because of any practical applications that an understanding of syntax might have. It has sometimes been suggested that syntactic theory is of no practical use. In fact, this has never been true. It has always been potentially useful in a number of areas. In particular, it has always had considerable potential in connection with language teaching (although attempts to exploit this potential have not always been very successful). Over the last ten years, however, an important development has made it much clearer than it once was that syntactic theory is useful. This is a major expansion in attempts to get computers to use ordinary language. Precise descriptions of languages are essential here because computers, unlike people, will not tolerate imprecision.

Among the things that it would be useful if computers could do are recognizing and producing speech. By the former we mean converting speech into writing, and by the latter we mean converting writing into speech. Getting computers to do these things is very difficult, and current achievements are quite limited. It is easy to show, however, that syntactic information is important in both cases.

We can look first at speech recognition. An obvious source of problems here is that different words with different spellings sometimes have the same pronunciation. Consider, for example, the verb *meet* and the noun *meat*. How can a computer know that it is the former in (28) and the latter in (29)?

(28) Can you meet me tomorrow?

(29) I bought some meat.

The answer is that it needs to have access to the following information:

(30) Only the basic form of a verb is possible in the context: *Can you — me.*

(31) Only a noun is possible in the context: *I bought some —*

Only if it incorporates a precise analysis of the relevant aspects of English syntax will this be the case. There are many other pairs of words that we might mention. One is the verb *write* and the adjective *right*. The computer needs syntactic information to know that it is the former in (32) and the latter in (33).



- (32) I made him write a letter.  
(33) I gave him the right letter.

Other examples will be found in the exercises.

Problems may also arise where pairs of expressions have similar pronunciations. Consider, for example, the very *oil* and the determiner *all*. Although they have distinct pronunciations, the computer may be unable to decide on the basis of the acoustic evidence which word has actually been produced. If so, it will need syntactic information to work out that it is the former in (34) and the latter in (35).

- (34) I tried to oil the wheels.  
(35) I talked to all the girls.

Specifically, it will need to know that the verb *tried* combines with what is known as an infinitive whereas the very *talked* combines with what is known as a prepositional phrase. Again, it is only if the computer incorporates a precise analysis of the relevant aspects of English syntax that this will be the case. A similar pair of words are the verb *reach* and the adjective *rich*, illustrated in the following examples:

- (36) I saw her rich aunt.  
(37) I saw her reach out.

Here again, if the computer is unable to decide on the basis of the acoustic evidence which word has been produced, it will need syntactic information to reach a decision.

We can turn now to speech synthesis. Here, the main problem is that different words which are pronounced differently are sometimes spelt in the same way. Consider, for example, *mouth*. This may be either a noun, in which case the *th* is pronounced as in *thin*, or a verb, in which case it is pronounced as in *then*. In (38) it is a noun, and in (39) it is a verb.

- (38) I saw her mouth move.  
(39) I saw her mouth the answer.

A computer, however, will only know this if it knows something about English syntax. *Mouth* is not a unique example. There are many similar examples. The following illustrate just one:

- (40) They made the council house filthy.  
(41) They made the council house the family.

In (40), *house* is a noun and rhymes with *mouse* while in (41) it is a verb and rhymes with *cows*. Another interesting example is *read*. This can be what can be called the non-third person singular present tense form, the form used where the subject is anything other than the pronouns *he*, *she* and *it* or singular expressions like *the boy*, and it can be the past tense form. In the former case, it is pronounced like *reed*. In the latter case, it is pronounced like *red*.

Consider now the following examples:

- (42) The boy read the paper.  
(43) The boys read the paper.